



Phase II Environmental Site Assessment

**10 Scarlett Road
Toronto, Ontario**

City of Toronto

March 14, 2023

Executive Summary

GHD Limited (GHD) was retained by the City of Toronto (the City) to complete a Phase II Environmental Site Assessment (ESA) for a property municipally known as 10 Scarlett Road in Toronto, Ontario (hereafter referred to as the Property or Site). The Site is currently in use for commercial purposes (a floral and event design business) and residential purposes. GHD understands that the Phase II ESA was completed for due diligence purposes to support the City's expropriation of the Site was part of the Scarlett Road Bridge Reconstruction project. The City plans to demolish the building at the Site and utilize the property as future road right-of-way.

The Site is approximately 214.3 square metres in size and is occupied by a two-storey building with a footprint of approximately 150 square metres. The building is currently leased for commercial purposes (a floral and event design business) on the ground level, with the second storey currently utilized as residential space. The exterior of the Property is asphalt-paved; with a small garden area on the east side of the building where it fronts onto Scarlett Road. The Site is located in the southwestern portion of Toronto (former borough of York), Ontario that is utilized for mixed residential, commercial and industrial land use; and is surrounded by the following:

- North:** The Site is bounded to the north by Bernice Crescent, and further north by various residential and commercial properties (Upholstery business and a Rogers Communications building).
- East:** The Site is bounded to the east by Scarlett Road, further east of which is Sun Convenience (Convenience Store) and Messina Bakery.
- South:** The Site is bounded to the south by a building occupied by Athletic Knit Wear, further south of which is St. Clair Avenue West.
- West:** The Site is bounded to the west by residential properties.

A Phase I ESA was completed by GHD at the Site and is dated February 24, 2022. Based on GHD's observations during the Phase I ESA, the ground floor tenant of the on-Site building utilizes the space for marketing, minor office administrative works, storage of flora and workshop areas for creating floral arrangements. Based on a review of historical records and information provided by the Site owner, the two-storey building was constructed in 1951 and the main floor was historically occupied by James Signs from the early 1950s until approximately 2017. Historical operations at the Site included administration, design, manufacturing, painting, and printing of a variety of custom signs. The second storey of the building has been utilized for residential and/or office purposes since the early 1950s.

Based on the findings of the Phase I ESA, the following areas of actual or potential Site contamination were identified to be associated with the Site:

- i) **Historical Site Use:** Based on discussions with the Site owner, James Signs occupied the main floor of the building from the early 1950s until around 2017. Operations at the Site included administration, design, manufacturing, painting and printing of a variety of custom signs. Releases, if any, associated with the historical sign manufacturer on the Site represents a potential impact to the soil and groundwater quality at the Site with respect to volatile organic compounds and metals.
- ii) **Historical Land Use:** Review of the 1963 FIP's indicate that Dominion Gasket & Manufacturing Co. Ltd. (Dominion) formerly occupied the adjacent southwest property. Based on the information provided in the plan; Dominion's operations included gasket stamping and curing, plastic hose manufacturing and cork splitting. An oil storage area affiliated with Dominion was located near the northeast corner of the Dominion property, in close proximity to the Site. This property was also identified in the waste generator listing under Bernard Athletic Knit & Enterprises Limited as a generator of paint/pigment/coating residues, aliphatic solvents, petroleum distillates; as well as waste oils and lubricant wastes between 2006 and 2018; and polychlorinated biphenyl (PCB) wastes in

2018. Releases, if any, associated with the historical manufacturing operations on the adjacent property to the southwest represent a potential impact to groundwater quality at the Site with respect to metals, petroleum hydrocarbons, volatile organic compounds and PCBs.

- iii) **Historical Gasoline Underground Storage Tanks:** Review of the 1930 FIP's indicated that two 500-litre gasoline underground storage tanks (USTs) were located approximately 40 metres north of the Site. Releases, if any, associated with the former operation of gasoline USTs to the north of the Site represent a potential impact to groundwater quality at the Site with respect to petroleum hydrocarbons and lead.

The Phase II ESA was completed in general accordance with the document entitled, "*CSA Standard Z769-00 (R2018), Phase II Environmental Site Assessment*" for conducting environmental assessments. The Phase II ESA included the advancement of two (2) boreholes, one (1) of which was instrumented as an overburden monitoring well, to facilitate the collection of soil and groundwater samples. Soil samples were submitted for laboratory analysis of one or more of the following parameters: volatile organic compounds (VOCs); petroleum hydrocarbon (PHC) fractions 1 to 4 (F1-F4); benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX); polycyclic aromatic hydrocarbons (PAHs); polychlorinated biphenyls (PCBs); and metal/inorganics.

Based on the proposed future use of the Site as a road right-of-way (community use), the soil analytical results were assessed to the following Ministry of Environment, Conservation and Parks (MECP) standards:

- Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use and coarse textured soils (herein referred to as the Table 3 Standards).

Based on the findings of the Site investigation activities undertaken by GHD, the following summary and conclusions are provided:

- The general stratigraphy at the Site consists of asphalt overlying a sand fill; underlain by native soils (primarily sand with a deep clay layer) to the maximum investigated depth of 11.58 metres (m) below ground surface (BGS).
- Groundwater was not encountered during the field investigative activities and, as such, groundwater direction flow at the Site could not be determined as part of the Phase II ESA. However, based on topography of the area, groundwater flow at the Site is anticipated to be in a southwesterly direction towards the Humber River.
- Based on the soil analytical results, the analyzed parameters were either not detected at the associated laboratory reporting limit or had concentrations that were below the applicable Table 3 Standards.
- Groundwater was not encountered during the field investigative activities and as such, groundwater samples were not collected or submitted for laboratory analysis as part of the Phase II ESA.

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1. Introduction

GHD Limited (GHD) was retained by the City of Toronto (the City) to complete a Phase II Environmental Site Assessment (ESA) for a property municipally known as 10 Scarlett Road in Toronto, Ontario (hereafter referred to as the Property or Site). The Site is currently in use for commercial purposes (a floral and event design business) and residential purposes. GHD understands that the Phase II ESA was completed for due diligence purposes to support the City's expropriation of the Site was part of the Scarlett Road Bridge Reconstruction project. The Site location map is provided on **Figure 1**. The Site Plan is presented on **Figure 2**. The City plans to demolish the building at the Site and utilize the property as future road right-of-way.

Based on the findings of a Phase I ESA¹ completed by GHD in February 2023, the following areas of actual or potential Site contamination were identified to be associated with the Site:

- i) **Historical Site Use:** Based on discussions with the current Site owner, James Signs occupied the main floor of the building from the early 1950s until around 2017. Operations at the Site included administration, design, manufacturing, painting and printing of a variety of custom signs. Releases, if any, associated with the historical sign manufacturer on the Site represents a potential impact to the soil and groundwater quality at the Site with respect to volatile organic compounds and metals.
- ii) **Historical Land Use:** Review of the 1963 FIP's indicate that Dominion Gasket & Manufacturing Co. Ltd. (Dominion) formerly occupied the adjacent southwest property. Based on the information provided in the plan; Dominion's operations included gasket stamping and curing, plastic hose manufacturing and cork splitting. An oil storage area affiliated with Dominion was located near the northeast corner of the Dominion property, in close proximity to the Site. This property was also identified in the waste generator listing under Bernard Athletic Knit & Enterprises Limited as a generator of paint/pigment/coating residues, aliphatic solvents, petroleum distillates; as well as waste oils and lubricant wastes between 2006 and 2018; and polychlorinated biphenyl (PCB) wastes in 2018. Releases, if any, associated with the historical manufacturing operations on the adjacent property to the southwest represent a potential impact to groundwater quality at the Site with respect to metals, petroleum hydrocarbons, volatile organic compounds and PCBs.
- iii) **Historical Gasoline Underground Storage Tanks:** Review of the 1930 FIP's indicated that two 500-litre gasoline underground storage tanks (USTs) were located approximately 40 metres north of the Site. Releases, if any, associated with the former operation of gasoline USTs to the north of the Site represent a potential impact to groundwater quality at the Site with respect to petroleum hydrocarbons and lead.

The objective of the Phase II ESA was to investigate soil and groundwater quality at the Property.

The Phase II ESA was completed in general accordance with the requirements outlined in the document entitled "CSA Z769-00 (R2018), *Phase II Environmental Site Assessment*" for conducting environmental site assessments. Although a Record of Site Condition (RSC) is not required, the field methodology and data collection generally followed the requirements of Ontario Regulation (O. Reg.) 153/04.

¹ "Phase I Environmental Site Assessment, 10 Scarlett Road, Toronto, Ontario"; prepared by GHD; prepared for The City of Toronto; dated February 24, 2023 (herein referred to as Phase I ESA).

2. Background

2.1 Site Description

The Site is approximately 214.3 square metres in size and is occupied by a two-storey building with a footprint of approximately 150 square metres. The building is currently leased for commercial purposes (a floral and event design business) on the ground level, and the second storey is currently utilized as residential space. The Site is located in the southwestern portion of York, Ontario that is utilized for mixed residential, commercial and industrial land use. The exterior of the Property is asphalt-paved; with a small garden area on the east side of the building where it fronts onto Scarlett Road. A Site Plan is presented on **Figure 2**.

Based on GHDs observations during the Phase I ESA, the ground floor tenant of the on-Site building utilizes the space for marketing, minor office administrative works, storage of flora and workshop areas for creating floral arrangements. Based on a review of historical records and information provided by the Site owner, the two-storey building was constructed in 1951 and the main floor was historically occupied by James Signs from the early 1950s until approximately 2017. Historical operations at the Site included administration, design, manufacturing, painting, and printing of a variety of custom signs. The second storey of the building has been utilized for residential and/or office purposes since the early 1950s.

2.2 Site Geology and Hydrogeology

The elevation of the Site is approximately 122 metres above mean sea level (mAMSL)². Regional topography slopes downward to the south towards Lake Ontario.

The Site is located in the broad physiographic region known as the Sand Plains³. The surficial geology consists of coarse-textured glaciolacustrine deposits consisting of sand, gravel, minor silt and clay. Beneath the overburden deposits is bedrock consisting of shale, limestone, dolostone, and siltstone of the Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, and Eastview Member⁴. The thickness of the overburden deposits varies due to surficial topographic relief, but is on the order of approximately 38 metres in the vicinity of the Site when comparing overburden and bedrock topography in the area⁵. The mapping is consistent with the soils that were encountered during the Phase II ESA drilling activities, which were predominantly native gravelly sand/sand underlain by clay. Bedrock was not encountered during drilling activities.

The closest water body to the Site is the Humber River, which is located approximately 600 m to the southwest of the Site. Based on local topography, groundwater is inferred to flow in a southwesterly direction towards the Humber River.

2.3 Adjacent and Neighbouring Properties

The Site is located in the southwestern portion of York, Ontario that is utilized for mixed residential, commercial and industrial land use; and is surrounded by the following:

² Natural Resources Canada [map]. "The Atlas of Canada - Toporama", governed by version 2.3 of the Open Government License – Canada. November 27, 2020. <http://atlas.gc.ca/toporama/en/index.html>.

³ Chapman, L. J., and D. F., Putnam (1984), "The Physiography of Southern Ontario", Ontario Geological Survey.

⁴ "Bedrock Geology of Ontario" [map]. Scale 1:250,000. OGS Earth Geoscience Data [computer files]. Sudbury, Ontario: Ontario Geological Survey & Ministry of Northern Development and Mines, 2010.

⁵ Miller, R.F., Farrell, Lorraine and Karrow, P.F., 1979. Bedrock Topography of the Oshawa Area, Southern Ontario; Ontario Geological Survey Prelim. Map P.1985, Bedrock Topography Ser., Scale 1:50,000. Geology 1978.

- North:** The Site is bound to the north by Bernice Crescent, and further north by various residential and commercial properties (Upholstery business and a Rogers Communications building).
- East:** The Site is bound to the east by Scarlett Road, further east of which is Sun Convenience (Convenience Store) and Messina Bakery.
- South:** The Site is bound to the south by an industrial building occupied by Athletic Knit Wear, further south of which is railway tracks.
- West:** The Site is bound to the west by residential properties.

2.4 Topography and Drainage

The elevation of the site is approximately 122 m AMSL based on topographic mapping⁶. During the Phase I ESA, the Site was observed to be slightly undulating, with an observed higher elevation on the northern portion of the property; and a lower elevation observed on the southern portion of the property. Stormwater generated at the Site either infiltrates the ground surface or is directed by overland flow towards St. Clair Avenue West.

No surface water bodies or watercourses are located on or adjacent to the Site. The closest waterbody is the Humber River, which is located approximately 60 m southwest of the Site.

3. Previous Investigations

GHD completed the Phase I ESA in February 2023. Based on the results of the Phase I ESA, the following potential sources or areas of potential environmental impairment (APEIs) were identified to be associated with the Site:

- i) **Historical Site Use:** Based on discussions with the Site owner, James Signs occupied the main floor of the building from the early 1950s until around 2017. Operations at the Site included administration, design, manufacturing, painting and printing of a variety of custom signs. Releases, if any, associated with the historical sign manufacturer on the Site represents a potential impact to the soil and groundwater quality at the Site with respect to volatile organic compounds and metals.
- ii) **Historical Land Use:** Review of the 1963 FIP's indicate that Dominion Gasket & Manufacturing Co. Ltd. (Dominion) formerly occupied the adjacent southwest property. Based on the information provided in the plan; Dominion's operations included gasket stamping and curing, plastic hose manufacturing and cork splitting. An oil storage area affiliated with Dominion was located near the northeast corner of the Dominion property, in close proximity to the Site. This property was also identified in the waste generator listing under Bernard Athletic Knit & Enterprises Limited as a generator of paint/pigment/coating residues, aliphatic solvents, petroleum distillates; as well as waste oils and lubricant wastes between 2006 and 2018; and polychlorinated biphenyl (PCB) wastes in 2018. Releases, if any, associated with the historical manufacturing operations on the adjacent property to the southwest represent a potential impact to groundwater quality at the Site with respect to metals, petroleum hydrocarbons, volatile organic compounds and PCBs.
- iii) **Historical Gasoline Underground Storage Tanks:** Review of the 1930 FIP's indicated that two 500-litre gasoline underground storage tanks (USTs) were located approximately 40 metres north of the Site. Releases, if any, associated with the former operation of gasoline USTs to the north of the Site represent a potential impact to groundwater quality at the Site with respect to petroleum hydrocarbons and lead.

⁶ Natural Resources Canada [map]. "The Atlas of Canada - Toporama", governed by version 2.3 of the Open Government License – Canada. November 27, 2020. <http://atlas.gc.ca/toporama/en/index.html>

No other previous environmental reports related to the Site were identified to exist.

4. Scope of Work

The Phase II ESA was completed in general accordance with the requirements of the document entitled "CSA Z769-00 (R2018), Phase II Environmental Site Assessment" for conducting environmental site assessments.

The Phase II ESA included the advancement of two (2) boreholes, one (1) of which was instrumented as an overburden monitoring well, to facilitate the collection of soil and groundwater samples. GHD collected environmental soil samples from two (2) borehole locations (BH1-22 and MW2-22) as part of the Phase II ESA. Due to the presence/size of the on-Site building, accessible exterior areas for drilling were limited to asphalt paved areas on the northern and southern portions of the Site. The investigative locations are shown on **Figure 2**.

The contaminants of potential concern (COPCs) were identified to be volatile organic compounds (VOCs), petroleum hydrocarbon (PHC) fractions 1 to 4 (F1-F4); benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX); polycyclic aromatic hydrocarbons (PAHs); polychlorinated biphenyls (PCBs); and metal/inorganics. Soil samples were submitted for selected laboratory analysis of the COPCs. A sample identification key is presented in **Table 1**.

The soil and groundwater sampling rationale for the Phase II ESA is summarized as follows:

Investigative Location	Rationale	Analytical Parameters	
		Soil	Groundwater
BH1-22	To investigate the soil quality in the northern portion of the Site and downgradient of the former fuel USTs located 40 metres north of the Site.	<ul style="list-style-type: none"> - VOCs - PHC - PAHs - PCBs - Metals/Inorganics 	<ul style="list-style-type: none"> - VOCs - PHC - PAHs - Metals/Inorganics
MW2-22	<p>To investigate the soil quality in the southern portion of the Site and in close proximity to the former manufacturing plant (Dominion) that operated adjacent to the southwest of the Site.</p> <p>MW2-22 was instrumented as a monitoring well to facilitate groundwater sampling, if sufficient water was present in the well.</p>	<ul style="list-style-type: none"> - VOCs - PHC - PAHs - PCBs - Metals/Inorganics 	<ul style="list-style-type: none"> - VOCs - PHC - PAHs - Metals/Inorganics

Note: N/A – Not applicable

5. Field Methodology

5.1 Preparation

5.1.1 Utility Locates

All applicable utility companies (gas, telephone, hydro, water, sewers, etc.) were contacted to demarcate the location of their respective underground utilities prior to initiating subsurface activities. GHD also retained a private utility locating contractor to demarcate any additional utilities. On November 29, 2022, Premier Locates completed private locates at the Site. A copy of the private locate report is provided in **Appendix A**.

5.1.2 Health and Safety Plan

A Site-specific Health and Safety Plan (HASP) was prepared in accordance with the requirements of the Occupational Health and Safety Act prior to initiating field activities. The HASP was maintained on the Site during the completion of the field activities.

5.2 Field Activities

5.2.1 Drilling

Two boreholes were advanced to depths of 11.58 m below ground surface (BGS) using a track-mounted direct push drill rig equipped with hollow stem augers (Powerprobe 9700 VTR PRO). Drilling activities were undertaken by Ontario Ministry of Environment, Conservation and Parks (MECP)⁷ licensed driller (Profile Drilling Inc.) on December 16, 2022.

During the advancement of the boreholes, soil samples were generally collected for soil classification and screening every 0.61 m to the total depth. Prior to use and between each borehole location, the drilling and sampling equipment were thoroughly cleaned using Alconox® soap and potable water rinse.

Soil samples were logged in the field to detail geologic conditions encountered using the modified unified soil classification system (USCS), noting stratigraphy and relative moisture content. The logged soil information is summarized on borehole stratigraphic and instrumentation logs provided in **Appendix B**.

Soil samples were also collected for field screening and/or laboratory analysis, which is further discussed in Section 5.2.2 below.

One of the boreholes (MW2-22) was instrumented with a monitoring well to a maximum depth of 10.36 m BGS. Following soil sampling, 108 mm inner diameter hollow stem augers were utilized to install the monitoring well. Each well was constructed with a 50 millimetre (mm) (2-inch) diameter, No. 10 slot, Schedule 40 PVC screen, 3.05 metres in length and completed with riser pipe. A silica sand pack was placed in the annular space between the PVC screen/riser pipe and the borehole to approximately 0.30 metres above the top of the screen. A bentonite seal was installed in the remaining borehole annulus above the sand pack. A protective steel casing with a concrete collar was placed around each monitoring well. The monitoring well was screened in native gravelly sand/clay as shown on the stratigraphic and instrumentation log provided in **Appendix B**.

⁷ MECP was previously known as the Ontario Ministry of Environment (MOE) or Ontario Ministry of the Environment and Climate Change (MOECC).

Survey data for BH1-22 and MW2-22 had not been completed at the time of this report, however field tie-in measurements were completed using Site features and landmarks to map the locations of the investigative locations as shown on **Figure 2**.

Drill soil cuttings were containerized in 205-litre metal drums for disposal at a later date.

5.2.2 Soil Sample Collection

Soil samples obtained from each borehole were qualitatively and quantitatively screened for the presence of impact. Qualitative screening was based on visual and olfactory observations, while quantitative screening was based on the presence of undifferentiated VOCs in the headspace of soil samples collected as measured using a photoionization detector (PID) (MiniRae 2000). Prior to screening, the PID was inspected and calibrated according to the manufacturer's recommendations. Calibrating the MiniRae 2000 is a two-point process using "fresh air" and the standard reference gas (also known as span gas). First, a "fresh air" calibration, which contained no detectable VOC [0.0 parts per million (ppm)], was used to set the zero point for the sensor. Then, a standard reference gas (isobutylene) that contains a known concentration (100 ppm) was used to set the second point of reference.

PID Model specifications are listed below:

Detector: Photoionization detector with 10.6 electron volt (eV) ultraviolet (UV) lamp

Measurement Accuracy

(isobutylene): 0-2000 ppm: +/- 2 ppm or 10% of reading
>2000 ppm: +/- 20% of reading

Calibration: Two-point field calibration of zero and standard reference gas

Soil samples collected for field screening were placed immediately into a sealable plastic bag and the headspace in the plastic bag was measured for undifferentiated VOC vapours using a PID. The PID readings ranged from 0 ppm to 0.1 ppm.

The rationale for the selection of samples for analyses was based on the results of the Phase I ESA, field evidence of impact, and/or general site coverage. The soil samples were collected in laboratory-supplied containers, which were placed in a cooler containing ice for sample preservation. All soil samples were collected using the required sampling techniques in accordance with O. Reg. 153/04. Soil samples were submitted for laboratory analysis of one or more of VOCs, PHC F1 to F4/BTEX, PAHs, PCBs and metals/inorganics. Additionally, two samples were also collected for grain size analyses; and one representative soil sample was collected from the generated soil cuttings for toxicity characteristic leaching procedure (TCLP) VOCs, benzo(a)pyrene, PCBs, metals and inorganics and ignitability analysis to characterize the soils for off-site disposal at a Ministry of the Environment Conservation and Parks (MECP) approved waste disposal facility.

The collected soil samples were submitted to a Standards Council of Canada (SCC) certified laboratory [ALS Environmental (ALS)] for chemical analysis of parameters presented in **Table 1**. A total of six (6) soil samples [including one (1) field duplicate sample] were collected from the two (2) borehole locations for laboratory analysis.

5.2.3 Groundwater Sample Collection

On December 20, 2022, GHD returned to the Site to develop and collect groundwater samples from MW2-22. However, MW2-22 did not produce any groundwater, and therefore groundwater samples could not be collected as part of the Phase II ESA.

5.2.4 Quality Assurance and Quality Control Measures

A quality assurance/quality control (QA/QC) program was implemented to ensure quality data was generated. The QA/QC program included the collection/submission of the following samples:

- One (1) field duplicate soil sample (i.e., one field duplicate sample per every ten soil samples collected).
- One (1) trip blank per each laboratory submission.

Field duplicate samples are one of two samples taken from the same media (i.e., soil or groundwater) at the same location and time following the same sampling procedures in an identical manner. The field duplicate samples are used to validate field and laboratory analysis. The trip blank was a sample of analyte-free media prepared by the laboratory, taken to the Site and returned to the laboratory unopened. The trip blank is used to document contamination attributable to shipping and field handling procedures. In addition to the above, QC samples were analyzed by the laboratory as required by their analytical methods. In general, one QA/QC sample was submitted for analysis for every ten samples collected.

All samples were submitted to the analytical laboratory following chain-of-custody procedures. The chain-of-custody forms document the condition and handling of the samples throughout the collection, transportation, and final analysis of the samples.

6. Results

6.1 Physical Conditions

6.1.1 Geology

The general stratigraphy at the Site consists of asphalt overlying a sand fill; underlain by native soils to the maximum investigated depth of 11.58 m BGS.

Details of the subsurface conditions are provided on the borehole logs presented in **Appendix B**.

The following subsurface materials and geologic deposits were encountered during the Phase II ESA investigation (from ground surface):

- *Asphalt* – Asphalt was encountered at the ground surface of both BH1-22 and MW-22. The thickness of the asphalt was measured to be 0.09 and 0.15 m, respectively.
- *Sand (Fill)* – Sand fill was encountered below the asphalt layer at BH1-22 and MW-22 and extended to a depth of 2.13 and 5.18 m BGS, respectively.
- *Native Gravelly Sand/Sand* – Below the fill material, gravelly sand was encountered at BH1-22 at depths ranging of between 2.13 and 6.40 m BGS. Gravelly sand was encountered at MW2-22 between 5.18 and 8.08 mBGS; and sand was encountered at a depth of 9.45 m BGS to the termination depth of the borehole (11.58 m BGS).
- *Native Clay* – Clay was encountered below the native gravelly sand/sand layers at BH1-22 at a depth of 10.36 m BGS to the termination depth of the borehole (11.58 m BGS). A clay seam was encountered underneath the gravelly sand and above the native sand at MW2-22 at depths between 8.08 and 9.45 m BGS.

Bedrock was not encountered as part of the Phase II ESA.

6.1.2 Groundwater Flow

As discussed above (see **section 5.2.3**), groundwater was not encountered during the field investigative activities; thus groundwater direction flow at the Site could not be determined as part of the Phase II ESA. However, based on topography of the area; groundwater flow at the Site is anticipated to be in a southwesterly direction towards the Humber River.

6.1.3 Field Evidence of Impact

During drilling and sampling activities, GHD did not observed any field evidence of impact at any of the investigative locations, with the exception of a thin layer of non-odorous impact at BH1-22. Black vegetative staining was observed at BH1-22 within the sand fill layer between 0.08 to 0.76 m BGS.

All PID headspace readings ranged between 0 and 0.1 ppm. The stratigraphic and instrumentation logs are provided in **Appendix B**.

6.2 Selection of Regulatory Standard

The soil and groundwater analytical results were compared to the generic standards provided in the Ministry of the Environment, Conservation and Parks (MECP, formerly Ministry of Environment and Climate Change or MOECC) document entitled "*Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011 (hereinafter referred to as the 2011 MECP Standards). The 2011 MECP Standards provide generic soil and groundwater quality standards for certain chemicals, based on combinations of the following site-specific conditions.

Property Use – Agricultural or Other or Residential/Parkland/Institutional/Industrial/Commercial/Community

The current on-Site property use is mixed commercial and residential property use. The intended property use is community property use (road right-of-way). Based on the intended future use of the Site, industrial/commercial/community property use was applied.

Restoration of Groundwater Quality – Potable/Non-Potable

There are no water wells currently located on Site. The Site is serviced with municipal potable water from the City of Toronto distribution system, which obtains its potable water from Lake Ontario. As such, the standards for a non-potable groundwater condition are considered applicable to the Site.

Restoration Depth – Full Depth or Stratified Depth

For comparative purposes, the results were compared to full depth standards.

Soil Texture – Coarse or Medium to Fine

Based on field observations of the soil encountered within the boreholes at the Site; as well as the grain size analysis of the native material, the predominant soil texture is coarse.

Shallow Soil Property

A shallow soil property means a property of which a third or more of the area consists of soil equal to or less than 2 metres in depth beneath the soil surface, excluding any non-soil surface treatment. The Site is not considered to be a shallow soil property as the Site contains more than 2 m of soil (presented in Section 6.1.1 and on **Appendix B**).

Within 30 m of a Water Body

The Site is not located within 30 m of a water body, as defined in Section 1 of O. Reg. 153/04.

Sensitive Site Condition

The Site is considered to be environmentally sensitive if:

- i. The property is located within an area of natural significance as defined by the conditions presented in Section 1 of O. Reg. 153/04, as amended.
- ii. The soil at the property as a pH value less than 5 or greater than 9 for surface soil or less than 5 or greater than 11 for subsurface soil.

The Site is not located in an area of natural significance as defined by the conditions presented in Section 1 of O. Reg. 153/04, as amended. Based on review of the analytical results, the pH of all analyzed soil samples were between the acceptable limits of 5 and 9 standard units as shown in **Table 2**.

Therefore, the Site is not considered to be environmentally sensitive.

Based on the collective information above, the applicable standards were determined to be Table 3: Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use and Coarse Textured Soil (Table 3 Standards).

6.3 Analytical Results

6.3.1 Soil Quality

Based on a review of the analytical results, the concentrations of all analyzed parameters were below the applicable Table 3 Standards. The soil analytical results are presented in **Table 2**.

Based on the TCLP analytical results for the drums of soil cuttings, the soils would be classified as non-hazardous for waste disposal purposes, in accordance with Schedule 4 of Ontario Regulation 347, as amended. The TCLP analytical results are presented in **Table 3**.

The laboratory certificates of analysis are provided in **Appendix C**.

6.3.2 Groundwater Quality

As discussed above, groundwater was not encountered during the field investigative activities and therefore groundwater samples were not collected or submitted for laboratory analysis as part of the Phase II ESA.

7. Summary and Conclusions

Based on the findings of the Site investigation activities undertaken by GHD, the following summary and conclusions are provided:

- On December 16, 2022, two (2) boreholes (BH1-22 and MW2-22) were advanced to depths of 11.58 m BGS; one (1) of which was instrumented with a monitoring well (MW2-22) to a maximum depth of 10.36 m BGS.

- The general stratigraphy at the Site consists of asphalt overlying a sand fill; underlain by native soils to the maximum investigated depth of 11.58 m BGS. The interpreted groundwater flow direction at the Site is in a southwesterly direction towards the Humber River.
- Based on the soil analytical results, the concentrations of all analyzed parameters were below the applicable Table 3 Standards.
- Groundwater was not encountered during the field investigative activities; thus groundwater samples were not collected or submitted for laboratory analysis as part of the Phase II ESA.

All of Which is Respectfully Submitted,

GHD

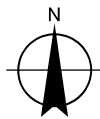
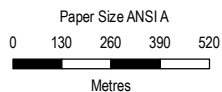
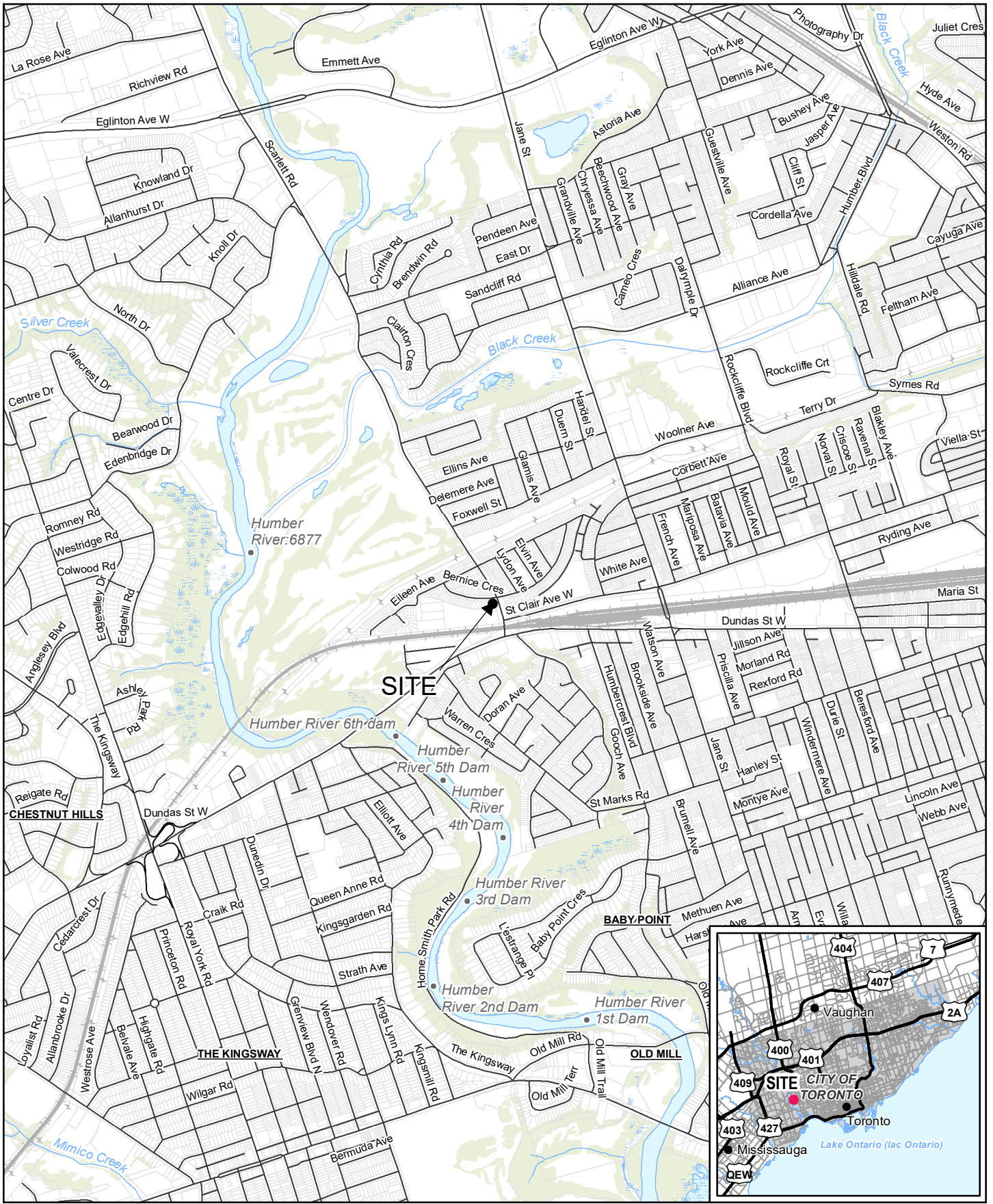


Chanel McMahon, B.Sc.



David Hutchinson, P.Eng.

Figures



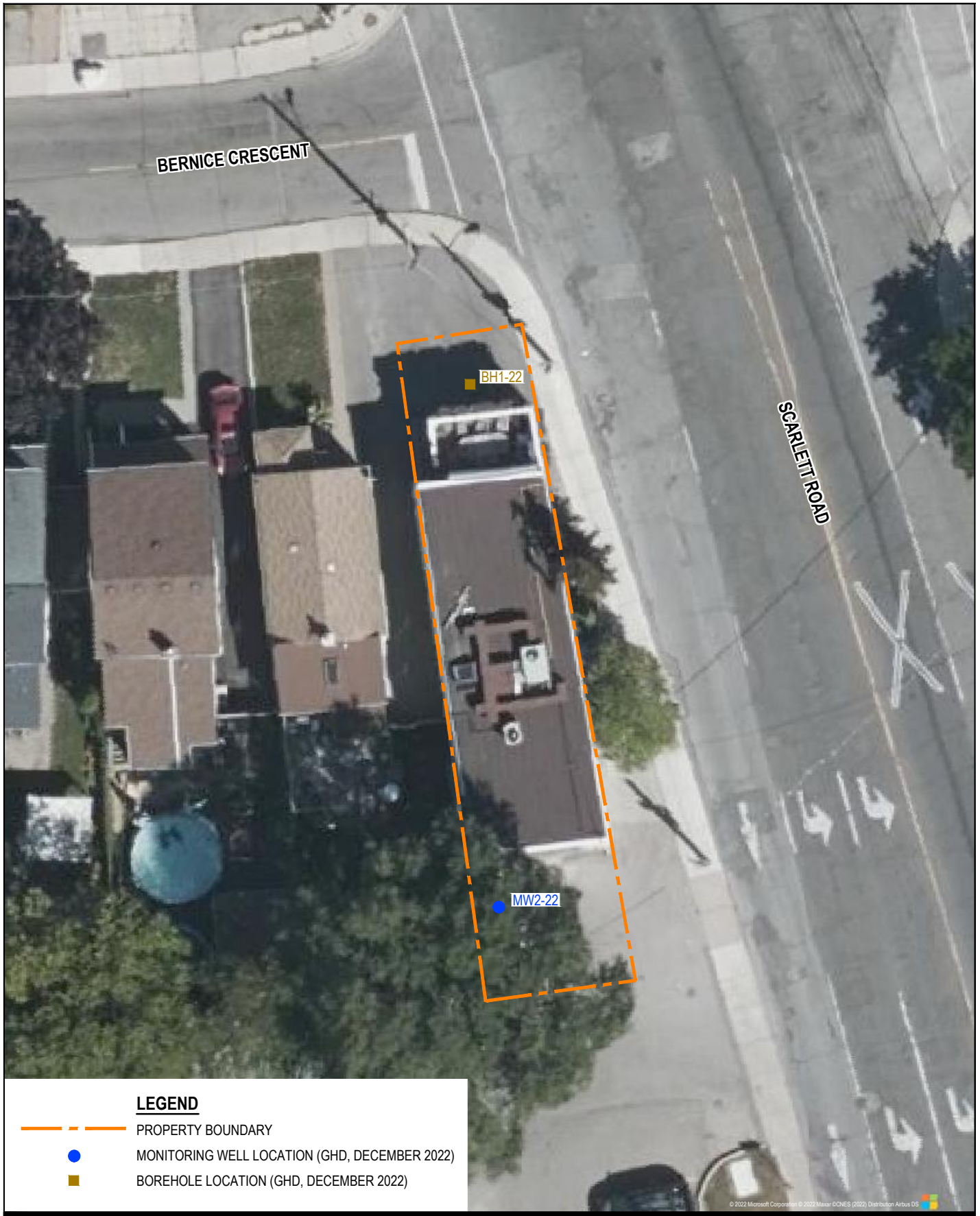
Map Projection: Transverse Mercator
 Horizontal Datum: North American 1983
 Grid: NAD 1983 UTM Zone 17N

CITY OF TORONTO
 10 SCARLETT ROAD, TORONTO, ONTARIO
 PHASE II ENVIRONMENTAL SITE ASSESSMENT




Project No. 12579218
 Revision No. -
 Date Feb 28, 2023

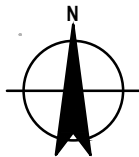
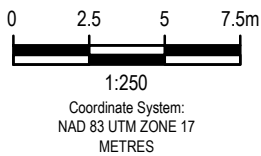
SITE LOCATION MAP

FIGURE 1



LEGEND

-  PROPERTY BOUNDARY
-  MONITORING WELL LOCATION (GHD, DECEMBER 2022)
-  BOREHOLE LOCATION (GHD, DECEMBER 2022)



CITY OF TORONTO
 10 SCARLETT ROAD, TORONTO, ONTARIO
 PHASE II ENVIRONMENTAL SITE ASSESSMENT

Project No. 12579218
 Date February 2023

**SITE PLAN AND
 INVESTIGATIVE LOCATIONS**

FIGURE 2

Tables

Table 1

Sample Identification Key
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto

Sample Location	Sample Identification ⁽¹⁾	Sample Date	Sample Interval (mBGS)	Laboratory Certificate of Analysis No.	Metals & Inorganics	PHCs	VOCs	PAHs	PCBs	Grain Size	TCLP
Soil											
MW2-22	S-12579218-121622-CM-MW2-22_4-6	16-Dec-22	1.22 - 1.83	WT2225546						√	
MW2-22	S-12579218-121622-CM-MW2-22_6-8	16-Dec-22	1.83 - 2.44	WT2225546	√	√	√	√	√		
MW2-22	S-12579218-121622-CM-MW2-22_28-30	16-Dec-22	8.53 - 9.14	WT2225546	√	√	√	√	√	√	
BH1-22	S-12579218-121622-CM-BH1-22_1-2	16-Dec-22	0.30 - 0.61	WT2225546	√	√	√	√	√		
BH1-22 (Field Duplicate)	S-12579218-121622-CM-DUP	16-Dec-22	0.30 - 0.61	WT2225546	√	√	√	√	√		
BH1-22	S-12579218-121622-CM-BH1-22_34-36	16-Dec-22	10.36 - 10.97	WT2225546	√	√	√	√			
Trip Blank	TRIP BLANK	16-Dec-22	- - -	WT2225546		√ ⁽²⁾					
Waste Characterization											
TCLP	S-12579218-121622-CM-TCLP	16-Dec-22	- - -	WT2225551							√

Notes:

⁽¹⁾ Complete sample identification for S-12579218-121622-CM-MW2-22_4-6: 'S' stands for Soil, 'S' stands for soil; the following digits are the project number; the following digits are the date (mmddy); 'CM' stands for the sampler's initials; the final characters represent the sample location followed by the sample depth.

mBGS metres Below Ground Surface

PHCs Petroleum Hydrocarbons

VOCs Volatile Organic Compounds

PAHs Polycyclic Aromatic Hydrocarbons

PCBs Polychlorinated Biphenyls

TCLP Toxicity Characteristic Leachate Procedure [VOCs, benzo(a)pyrene, PCBs, metals and inorganics]

⁽²⁾ Analyzed for PHC F₁ only

- No value/not applicable

**Summary of Soil Analytical Results
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto**

			Sample Location:	MW22-1	MW22-1
			Sample Identification:	S-12579218-121622-CM-MW22-1_1-2	S-12579218-121622-CM-DUP
			Sample Date:	12/16/2022	12/16/2022
			Sample Depth (mBGS):	0.30-0.61	0.30-0.61
			Laboratory Certificate of Analysis:	WT2225546	WT2225546 Duplicate
Parameters	Units	MOE Table 3 Standard ⁽¹⁾			
Volatile Organic Compounds (VOCs)					
1,1,1,2-Tetrachloroethane	mg/kg	0.087	ND(0.050)	ND(0.050)	ND(0.050)
1,1,1-Trichloroethane	mg/kg	6.1	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2,2-Tetrachloroethane	mg/kg	0.05	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2-Trichloroethane	mg/kg	0.05	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethane	mg/kg	17	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethene	mg/kg	0.064	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	0.05	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichlorobenzene	mg/kg	6.8	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloroethane	mg/kg	0.05	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloropropane	mg/kg	0.16	ND(0.050)	ND(0.050)	ND(0.050)
1,3-Dichlorobenzene	mg/kg	9.6	ND(0.050)	ND(0.050)	ND(0.050)
1,4-Dichlorobenzene	mg/kg	0.2	ND(0.050)	ND(0.050)	ND(0.050)
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	70	ND(0.50)	ND(0.50)	ND(0.50)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	31	ND(0.50)	ND(0.50)	ND(0.50)
Acetone	mg/kg	16	ND(0.50)	ND(0.50)	ND(0.50)
Benzene	mg/kg	0.32	ND(0.0050)	ND(0.0050)	ND(0.0050)
Bromodichloromethane	mg/kg	18	ND(0.050)	ND(0.050)	ND(0.050)
Bromoform	mg/kg	0.61	ND(0.050)	ND(0.050)	ND(0.050)
Bromomethane (Methyl bromide)	mg/kg	0.05	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	mg/kg	0.21	ND(0.050)	ND(0.050)	ND(0.050)
Chlorobenzene	mg/kg	2.4	ND(0.050)	ND(0.050)	ND(0.050)
Chloroform (Trichloromethane)	mg/kg	0.47	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,2-Dichloroethene	mg/kg	55	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,3-Dichloropropene	mg/kg	NV	ND(0.030)	ND(0.030)	ND(0.030)
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene	mg/kg	0.18	ND(0.05)	ND(0.05)	ND(0.05)
Dibromochloromethane	mg/kg	13	ND(0.050)	ND(0.050)	ND(0.050)
Dichlorodifluoromethane (CFC-12)	mg/kg	16	ND(0.050)	ND(0.050)	ND(0.050)
Ethylbenzene	mg/kg	9.5	ND(0.015)	ND(0.015)	ND(0.015)
Hexane	mg/kg	46	ND(0.050)	ND(0.050)	ND(0.050)
m&p-Xylenes	mg/kg	NV	ND(0.030)	ND(0.030)	ND(0.030)
Methylene chloride	mg/kg	1.6	ND(0.045)	ND(0.045)	ND(0.045)
o-Xylene	mg/kg	NV	ND(0.030)	0.032	0.032
Styrene	mg/kg	34	ND(0.050)	ND(0.050)	ND(0.050)
Tetrachloroethene	mg/kg	4.5	ND(0.050)	ND(0.050)	ND(0.050)
Toluene	mg/kg	68	ND(0.050)	ND(0.050)	ND(0.050)
Total BTEX	mg/kg	NV	ND(0.1)	ND(0.1)	ND(0.1)
trans-1,2-Dichloroethene	mg/kg	1.3	ND(0.050)	ND(0.050)	ND(0.050)
trans-1,3-Dichloropropene	mg/kg	NV	ND(0.030)	ND(0.030)	ND(0.030)
Trichloroethene	mg/kg	0.91	ND(0.010)	ND(0.010)	ND(0.010)
Trichlorofluoromethane (CFC-11)	mg/kg	4	ND(0.050)	ND(0.050)	ND(0.050)
Vinyl chloride	mg/kg	0.032	ND(0.020)	ND(0.020)	ND(0.020)
Xylenes (total)	mg/kg	26	ND(0.05)	ND(0.05)	ND(0.05)
Semi-VOCs					
1-Methylnaphthalene	mg/kg	76	ND(0.030)	ND(0.030)	ND(0.030)
1-Methylnaphthalene/2-Methylnaphthalene	mg/kg	76	ND(0.05)	ND(0.05)	ND(0.05)
2-Methylnaphthalene	mg/kg	76	ND(0.030)	ND(0.030)	ND(0.030)
Acenaphthene	mg/kg	96	ND(0.050)	ND(0.050)	ND(0.050)
Acenaphthylene	mg/kg	0.15	ND(0.050)	ND(0.050)	ND(0.050)
Anthracene	mg/kg	0.67	ND(0.050)	ND(0.050)	ND(0.050)
Benzo(a)anthracene	mg/kg	0.96	0.092	0.092	ND(0.050)
Benzo(a)pyrene	mg/kg	0.3	0.126	0.126	ND(0.050)
Benzo(b)fluoranthene/Benzo(j)fluoranthene	mg/kg	0.96	0.158	0.158	ND(0.050)
Benzo(g,h,i)perylene	mg/kg	9.6	0.079	0.079	ND(0.050)
Benzo(k)fluoranthene	mg/kg	0.96	0.066	0.066	ND(0.050)
Chrysene	mg/kg	9.6	0.104	0.104	ND(0.050)
Dibenz(a,h)anthracene	mg/kg	0.1	ND(0.050)	ND(0.050)	ND(0.050)
Fluoranthene	mg/kg	9.6	0.198	0.198	ND(0.050)
Fluorene	mg/kg	62	ND(0.050)	ND(0.050)	ND(0.050)
Indeno(1,2,3-cd)pyrene	mg/kg	0.76	0.094	0.094	ND(0.050)
Naphthalene	mg/kg	9.6	0.014	0.014	ND(0.010)
Phenanthrene	mg/kg	12	0.094	0.094	ND(0.050)
Pyrene	mg/kg	96	0.174	0.174	ND(0.050)

**Summary of Soil Analytical Results
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto**

Sample Location:			MW22-1	MW22-1
Sample Identification:			S-12579218-121622-CM-MW22-1_1-2	S-12579218-121622-CM-DUP
Sample Date:			12/16/2022	12/16/2022
Sample Depth (mBGS):			0.30-0.61	0.30-0.61
Laboratory Certificate of Analysis:			WT2225546	WT2225546 Duplicate
Parameters	Units	MOE Table 3 Standard ⁽¹⁾		
Polychlorinated Biphenyls (PCBs)				
Aroclor-1016 (PCB-1016)	mg/kg	NV	ND(0.010)	ND(0.010)
Aroclor-1221 (PCB-1221)	mg/kg	NV	ND(0.010)	ND(0.010)
Aroclor-1232 (PCB-1232)	mg/kg	NV	ND(0.010)	ND(0.010)
Aroclor-1242 (PCB-1242)	mg/kg	NV	ND(0.010)	ND(0.010)
Aroclor-1248 (PCB-1248)	mg/kg	NV	ND(0.010)	ND(0.010)
Aroclor-1254 (PCB-1254)	mg/kg	NV	ND(0.010)	ND(0.010)
Aroclor-1260 (PCB-1260)	mg/kg	NV	ND(0.010)	ND(0.010)
Aroclor-1262 (PCB-1262)	mg/kg	NV	ND(0.010)	ND(0.010)
Aroclor-1268 (PCB-1268)	mg/kg	NV	ND(0.010)	ND(0.010)
Total PCBs	mg/kg	1.1	ND(0.030)	ND(0.030)
Metals				
Antimony	mg/kg	40	ND(0.10)	0.14
Arsenic	mg/kg	18	2.10	3.08
Barium	mg/kg	670	14.5	18.6
Beryllium	mg/kg	8	0.16	0.18
Boron	mg/kg	120	ND(5.0)	ND(5.0)
Cadmium	mg/kg	1.9	0.051	0.074
Calcium (soluble)	mg/L	NV	7.21	7.22
Chromium	mg/kg	160	5.78	6.02
Chromium VI (hexavalent)	mg/kg	8	ND(0.10)	0.19
Cobalt	mg/kg	80	2.34	2.22
Copper	mg/kg	230	6.17	6.99
Lead	mg/kg	120	7.82	12.4
Magnesium (soluble)	mg/L	NV	ND(0.50)	ND(0.50)
Mercury	mg/kg	3.9	0.0105	0.0173
Molybdenum	mg/kg	40	0.14	0.16
Nickel	mg/kg	270	5.01	4.77
Selenium	mg/kg	5.5	ND(0.20)	ND(0.20)
Silver	mg/kg	40	ND(0.10)	ND(0.10)
Sodium (soluble)	mg/L	NV	36.2	39.6
Thallium	mg/kg	3.3	ND(0.050)	ND(0.050)
Uranium	mg/kg	33	0.253	0.239
Vanadium	mg/kg	86	12.5	13.3
Zinc	mg/kg	340	16.0	22.6
Petroleum Hydrocarbons (PHCs)				
Petroleum hydrocarbons F1 (C6-C10)	mg/kg	55	ND(5.0)	ND(5.0)
Petroleum hydrocarbons F1 minus BTEX	mg/kg	55	ND(5)	ND(5)
Petroleum hydrocarbons F2 (C10-C16)	mg/kg	230	ND(10)	ND(10)
Petroleum hydrocarbons F2 minus Naphthalene	mg/kg	230	ND(25)	ND(25)
Petroleum hydrocarbons F3 (C16-C34)	mg/kg	1700	ND(50)	ND(50)
Petroleum hydrocarbons F3 minus PAH	mg/kg	1700	ND(50)	ND(50)
Petroleum hydrocarbons F4 (C34-C50)	mg/kg	3300	ND(50)	ND(50)
Total Petroleum Hydrocarbons (C6-C50)	mg/kg	NV	ND(80)	ND(80)
Geotech				
Grain size >75um	%	NV	--	--
Grain Size 0.005-0.075	%	NV	--	--
Texture	none	NV	--	--
General Chemistry				
Boron (hot water soluble)	mg/kg	2	0.15	0.20
Conductivity	mS/cm	1.4	0.208	0.219
Cyanide, weak acid dissociable	mg/kg	0.051	ND(0.050)	ND(0.050)
Moisture	%	NV	7.02	8.65
pH, soluble (1:2)	s.u.	(5-11) 5-9	7.52	7.59
Sodium adsorption ratio (SAR)	none	12	3.71	4.06

Notes:

- (1) Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011.
- Table 3: Full Depth Generic Site Condition Standards in a Non Potable Groundwater Condition for Industrial/Commercial/Community property use and coarse-textured soils.
- mBGS metres Below Ground Surface
- NV No Value
- Parameter not analyzed
- ND(0.050) Not detected at the associated reporting limit, indicated in brackets.
- mg/kg milligrams per kilogram
- mg/L milligrams per litre
- mS/cm millisiemens per centimetre
- % percent
- s.u. standard units

**Summary of Soil Analytical Results
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto**

			Sample Location:	MW22-1	MW22-2
			Sample Identification:	S-12579218-121622-CM-MW22-1_34-36	S-12579218-121622-CM-MW22-2_4-6
			Sample Date:	12/16/2022	12/16/2022
			Sample Depth (mBGS):	10.36-10.97	1.22-1.83
			Laboratory Certificate of Analysis:	WT2225546	WT2225546
Parameters	Units	MOE Table 3 Standard ⁽¹⁾			
Volatile Organic Compounds (VOCs)					
1,1,1,2-Tetrachloroethane	mg/kg	0.087	ND(0.050)	--	
1,1,1-Trichloroethane	mg/kg	6.1	ND(0.050)	--	
1,1,2,2-Tetrachloroethane	mg/kg	0.05	ND(0.050)	--	
1,1,2-Trichloroethane	mg/kg	0.05	ND(0.050)	--	
1,1-Dichloroethane	mg/kg	17	ND(0.050)	--	
1,1-Dichloroethene	mg/kg	0.064	ND(0.050)	--	
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	0.05	ND(0.050)	--	
1,2-Dichlorobenzene	mg/kg	6.8	ND(0.050)	--	
1,2-Dichloroethane	mg/kg	0.05	ND(0.050)	--	
1,2-Dichloropropane	mg/kg	0.16	ND(0.050)	--	
1,3-Dichlorobenzene	mg/kg	9.6	ND(0.050)	--	
1,4-Dichlorobenzene	mg/kg	0.2	ND(0.050)	--	
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	70	ND(0.50)	--	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	31	ND(0.50)	--	
Acetone	mg/kg	16	ND(0.50)	--	
Benzene	mg/kg	0.32	ND(0.0050)	--	
Bromodichloromethane	mg/kg	18	ND(0.050)	--	
Bromoform	mg/kg	0.61	ND(0.050)	--	
Bromomethane (Methyl bromide)	mg/kg	0.05	ND(0.050)	--	
Carbon tetrachloride	mg/kg	0.21	ND(0.050)	--	
Chlorobenzene	mg/kg	2.4	ND(0.050)	--	
Chloroform (Trichloromethane)	mg/kg	0.47	ND(0.050)	--	
cis-1,2-Dichloroethene	mg/kg	55	ND(0.050)	--	
cis-1,3-Dichloropropene	mg/kg	NV	ND(0.030)	--	
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene	mg/kg	0.18	ND(0.05)	--	
Dibromochloromethane	mg/kg	13	ND(0.050)	--	
Dichlorodifluoromethane (CFC-12)	mg/kg	16	ND(0.050)	--	
Ethylbenzene	mg/kg	9.5	ND(0.015)	--	
Hexane	mg/kg	46	ND(0.050)	--	
m&p-Xylenes	mg/kg	NV	ND(0.030)	--	
Methylene chloride	mg/kg	1.6	ND(0.045)	--	
o-Xylene	mg/kg	NV	ND(0.030)	--	
Styrene	mg/kg	34	ND(0.050)	--	
Tetrachloroethene	mg/kg	4.5	ND(0.050)	--	
Toluene	mg/kg	68	ND(0.050)	--	
Total BTEX	mg/kg	NV	ND(0.1)	--	
trans-1,2-Dichloroethene	mg/kg	1.3	ND(0.050)	--	
trans-1,3-Dichloropropene	mg/kg	NV	ND(0.030)	--	
Trichloroethene	mg/kg	0.91	ND(0.010)	--	
Trichlorofluoromethane (CFC-11)	mg/kg	4	ND(0.050)	--	
Vinyl chloride	mg/kg	0.032	ND(0.020)	--	
Xylenes (total)	mg/kg	26	ND(0.05)	--	
Semi-VOCs					
1-Methylnaphthalene	mg/kg	76	ND(0.030)	--	
1-Methylnaphthalene/2-Methylnaphthalene	mg/kg	76	ND(0.05)	--	
2-Methylnaphthalene	mg/kg	76	ND(0.030)	--	
Acenaphthene	mg/kg	96	ND(0.050)	--	
Acenaphthylene	mg/kg	0.15	ND(0.050)	--	
Anthracene	mg/kg	0.67	ND(0.050)	--	
Benzo(a)anthracene	mg/kg	0.96	ND(0.050)	--	
Benzo(a)pyrene	mg/kg	0.3	ND(0.050)	--	
Benzo(b)fluoranthene/Benzo(j)fluoranthene	mg/kg	0.96	ND(0.050)	--	
Benzo(g,h,i)perylene	mg/kg	9.6	ND(0.050)	--	
Benzo(k)fluoranthene	mg/kg	0.96	ND(0.050)	--	
Chrysene	mg/kg	9.6	ND(0.050)	--	
Dibenz(a,h)anthracene	mg/kg	0.1	ND(0.050)	--	
Fluoranthene	mg/kg	9.6	ND(0.050)	--	
Fluorene	mg/kg	62	ND(0.050)	--	
Indeno(1,2,3-cd)pyrene	mg/kg	0.76	ND(0.050)	--	
Naphthalene	mg/kg	9.6	ND(0.010)	--	
Phenanthrene	mg/kg	12	ND(0.050)	--	
Pyrene	mg/kg	96	ND(0.050)	--	

**Summary of Soil Analytical Results
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto**

Sample Location:			MW22-1	MW22-2
Sample Identification:			S-12579218-121622-CM-MW22-1_34-36	S-12579218-121622-CM-MW22-2_4-6
Sample Date:			12/16/2022	12/16/2022
Sample Depth (mBGS):			10.36-10.97	1.22-1.83
Laboratory Certificate of Analysis:			WT2225546	WT2225546
Parameters	Units	MOE Table 3 Standard ⁽¹⁾		
Polychlorinated Biphenyls (PCBs)				
Aroclor-1016 (PCB-1016)	mg/kg	NV	--	--
Aroclor-1221 (PCB-1221)	mg/kg	NV	--	--
Aroclor-1232 (PCB-1232)	mg/kg	NV	--	--
Aroclor-1242 (PCB-1242)	mg/kg	NV	--	--
Aroclor-1248 (PCB-1248)	mg/kg	NV	--	--
Aroclor-1254 (PCB-1254)	mg/kg	NV	--	--
Aroclor-1260 (PCB-1260)	mg/kg	NV	--	--
Aroclor-1262 (PCB-1262)	mg/kg	NV	--	--
Aroclor-1268 (PCB-1268)	mg/kg	NV	--	--
Total PCBs	mg/kg	1.1	--	--
Metals				
Antimony	mg/kg	40	ND(0.10)	--
Arsenic	mg/kg	18	3.26	--
Barium	mg/kg	670	77.6	--
Beryllium	mg/kg	8	0.55	--
Boron	mg/kg	120	8.9	--
Cadmium	mg/kg	1.9	0.070	--
Calcium (soluble)	mg/L	NV	11.5	--
Chromium	mg/kg	160	20.5	--
Chromium VI (hexavalent)	mg/kg	8	ND(0.10)	--
Cobalt	mg/kg	80	9.09	--
Copper	mg/kg	230	19.1	--
Lead	mg/kg	120	7.72	--
Magnesium (soluble)	mg/L	NV	0.90	--
Mercury	mg/kg	3.9	0.0131	--
Molybdenum	mg/kg	40	0.23	--
Nickel	mg/kg	270	20.1	--
Selenium	mg/kg	5.5	ND(0.20)	--
Silver	mg/kg	40	ND(0.10)	--
Sodium (soluble)	mg/L	NV	98.5	--
Thallium	mg/kg	3.3	0.133	--
Uranium	mg/kg	33	0.495	--
Vanadium	mg/kg	86	30.1	--
Zinc	mg/kg	340	42.8	--
Petroleum Hydrocarbons (PHCs)				
Petroleum hydrocarbons F1 (C6-C10)	mg/kg	55	ND(5.0)	--
Petroleum hydrocarbons F1 minus BTEX	mg/kg	55	ND(5)	--
Petroleum hydrocarbons F2 (C10-C16)	mg/kg	230	ND(10)	--
Petroleum hydrocarbons F2 minus Naphthalene	mg/kg	230	ND(25)	--
Petroleum hydrocarbons F3 (C16-C34)	mg/kg	1700	ND(50)	--
Petroleum hydrocarbons F3 minus PAH	mg/kg	1700	ND(50)	--
Petroleum hydrocarbons F4 (C34-C50)	mg/kg	3300	ND(50)	--
Total Petroleum Hydrocarbons (C6-C50)	mg/kg	NV	ND(80)	--
Geotech				
Grain size >75um	%	NV	--	91.9
Grain Size 0.005-0.075	%	NV	--	8.1
Texture	none	NV	--	Coarse
General Chemistry				
Boron (hot water soluble)	mg/kg	2	0.14	--
Conductivity	mS/cm	1.4	0.555	--
Cyanide, weak acid dissociable	mg/kg	0.051	ND(0.050)	--
Moisture	%	NV	18.9	--
pH, soluble (1:2)	s.u.	(5-11) 5-9	7.71	--
Sodium adsorption ratio (SAR)	none	12	7.53	--

Notes:

- (1) Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011.
- Table 3: Full Depth Generic Site Condition Standards in a Non Potable Groundwater Condition for Industrial/Commercial/Community property use and coarse-textured soils.
- mBGS metres Below Ground Surface
- NV No Value
- Parameter not analyzed
- ND(0.050) Not detected at the associated reporting limit, indicated in brackets.
- mg/kg milligrams per kilogram
- mg/L milligrams per litre
- mS/cm millisiemens per centimetre
- % percent
- s.u. standard units

**Summary of Soil Analytical Results
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto**

Sample Location:			MW22-2	MW22-2
Sample Identification:			S-12579218-121622-CM-MW22-2_6-8	S-12579218-121622-CM-MW22-2_28-30
Sample Date:			12/16/2022	12/16/2022
Sample Depth (mBGS):			1.83-2.44	8.53-9.14
Laboratory Certificate of Analysis:			WT2225546	WT2225546
Parameters	Units	MOE Table 3 Standard ⁽¹⁾		
Volatile Organic Compounds (VOCs)				
1,1,1,2-Tetrachloroethane	mg/kg	0.087	ND(0.050)	ND(0.050)
1,1,1-Trichloroethane	mg/kg	6.1	ND(0.050)	ND(0.050)
1,1,2,2-Tetrachloroethane	mg/kg	0.05	ND(0.050)	ND(0.050)
1,1,2-Trichloroethane	mg/kg	0.05	ND(0.050)	ND(0.050)
1,1-Dichloroethane	mg/kg	17	ND(0.050)	ND(0.050)
1,1-Dichloroethene	mg/kg	0.064	ND(0.050)	ND(0.050)
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	0.05	ND(0.050)	ND(0.050)
1,2-Dichlorobenzene	mg/kg	6.8	ND(0.050)	ND(0.050)
1,2-Dichloroethane	mg/kg	0.05	ND(0.050)	ND(0.050)
1,2-Dichloropropane	mg/kg	0.16	ND(0.050)	ND(0.050)
1,3-Dichlorobenzene	mg/kg	9.6	ND(0.050)	ND(0.050)
1,4-Dichlorobenzene	mg/kg	0.2	ND(0.050)	ND(0.050)
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	70	ND(0.50)	ND(0.50)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	31	ND(0.50)	ND(0.50)
Acetone	mg/kg	16	ND(0.50)	ND(0.50)
Benzene	mg/kg	0.32	ND(0.0050)	ND(0.0050)
Bromodichloromethane	mg/kg	18	ND(0.050)	ND(0.050)
Bromoform	mg/kg	0.61	ND(0.050)	ND(0.050)
Bromomethane (Methyl bromide)	mg/kg	0.05	ND(0.050)	ND(0.050)
Carbon tetrachloride	mg/kg	0.21	ND(0.050)	ND(0.050)
Chlorobenzene	mg/kg	2.4	ND(0.050)	ND(0.050)
Chloroform (Trichloromethane)	mg/kg	0.47	ND(0.050)	ND(0.050)
cis-1,2-Dichloroethene	mg/kg	55	ND(0.050)	ND(0.050)
cis-1,3-Dichloropropene	mg/kg	NV	ND(0.030)	ND(0.030)
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene	mg/kg	0.18	ND(0.05)	ND(0.05)
Dibromochloromethane	mg/kg	13	ND(0.050)	ND(0.050)
Dichlorodifluoromethane (CFC-12)	mg/kg	16	ND(0.050)	ND(0.050)
Ethylbenzene	mg/kg	9.5	ND(0.015)	ND(0.015)
Hexane	mg/kg	46	ND(0.050)	ND(0.050)
m&p-Xylenes	mg/kg	NV	ND(0.030)	ND(0.030)
Methylene chloride	mg/kg	1.6	ND(0.045)	ND(0.045)
o-Xylene	mg/kg	NV	ND(0.030)	ND(0.030)
Styrene	mg/kg	34	ND(0.050)	ND(0.050)
Tetrachloroethene	mg/kg	4.5	ND(0.050)	0.070
Toluene	mg/kg	68	ND(0.050)	ND(0.050)
Total BTEX	mg/kg	NV	ND(0.1)	ND(0.1)
trans-1,2-Dichloroethene	mg/kg	1.3	ND(0.050)	ND(0.050)
trans-1,3-Dichloropropene	mg/kg	NV	ND(0.030)	ND(0.030)
Trichloroethene	mg/kg	0.91	ND(0.010)	ND(0.010)
Trichlorofluoromethane (CFC-11)	mg/kg	4	ND(0.050)	ND(0.050)
Vinyl chloride	mg/kg	0.032	ND(0.020)	ND(0.020)
Xylenes (total)	mg/kg	26	ND(0.05)	ND(0.05)
Semi-VOCs				
1-Methylnaphthalene	mg/kg	76	ND(0.030)	ND(0.030)
1-Methylnaphthalene/2-Methylnaphthalene	mg/kg	76	ND(0.05)	ND(0.05)
2-Methylnaphthalene	mg/kg	76	ND(0.030)	ND(0.030)
Acenaphthene	mg/kg	96	ND(0.050)	ND(0.050)
Acenaphthylene	mg/kg	0.15	ND(0.050)	ND(0.050)
Anthracene	mg/kg	0.67	ND(0.050)	ND(0.050)
Benzo(a)anthracene	mg/kg	0.96	ND(0.050)	ND(0.050)
Benzo(a)pyrene	mg/kg	0.3	ND(0.050)	ND(0.050)
Benzo(b)fluoranthene/Benzo(j)fluoranthene	mg/kg	0.96	ND(0.050)	ND(0.050)
Benzo(g,h,i)perylene	mg/kg	9.6	ND(0.050)	ND(0.050)
Benzo(k)fluoranthene	mg/kg	0.96	ND(0.050)	ND(0.050)
Chrysene	mg/kg	9.6	ND(0.050)	ND(0.050)
Dibenz(a,h)anthracene	mg/kg	0.1	ND(0.050)	ND(0.050)
Fluoranthene	mg/kg	9.6	ND(0.050)	ND(0.050)
Fluorene	mg/kg	62	ND(0.050)	ND(0.050)
Indeno(1,2,3-cd)pyrene	mg/kg	0.76	ND(0.050)	ND(0.050)
Naphthalene	mg/kg	9.6	ND(0.010)	ND(0.010)
Phenanthrene	mg/kg	12	ND(0.050)	ND(0.050)
Pyrene	mg/kg	96	ND(0.050)	ND(0.050)

**Summary of Soil Analytical Results
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto**

Sample Location:			MW22-2	MW22-2
Sample Identification:			S-12579218-121622-CM-MW22-2_6-8	S-12579218-121622-CM-MW22-2_28-30
Sample Date:			12/16/2022	12/16/2022
Sample Depth (mBGS):			1.83-2.44	8.53-9.14
Laboratory Certificate of Analysis:			WT2225546	WT2225546
Parameters	Units	MOE Table 3 Standard ⁽¹⁾		
Polychlorinated Biphenyls (PCBs)				
Aroclor-1016 (PCB-1016)	mg/kg	NV	ND(0.010)	--
Aroclor-1221 (PCB-1221)	mg/kg	NV	ND(0.010)	--
Aroclor-1232 (PCB-1232)	mg/kg	NV	ND(0.010)	--
Aroclor-1242 (PCB-1242)	mg/kg	NV	ND(0.010)	--
Aroclor-1248 (PCB-1248)	mg/kg	NV	ND(0.010)	--
Aroclor-1254 (PCB-1254)	mg/kg	NV	ND(0.010)	--
Aroclor-1260 (PCB-1260)	mg/kg	NV	ND(0.010)	--
Aroclor-1262 (PCB-1262)	mg/kg	NV	ND(0.010)	--
Aroclor-1268 (PCB-1268)	mg/kg	NV	ND(0.010)	--
Total PCBs	mg/kg	1.1	ND(0.030)	--
Metals				
Antimony	mg/kg	40	ND(0.10)	ND(0.10)
Arsenic	mg/kg	18	1.09	3.22
Barium	mg/kg	670	8.24	51.1
Beryllium	mg/kg	8	0.10	0.45
Boron	mg/kg	120	ND(5.0)	7.6
Cadmium	mg/kg	1.9	ND(0.020)	0.063
Calcium (soluble)	mg/L	NV	3.66	ND(0.50)
Chromium	mg/kg	160	4.39	16.8
Chromium VI (hexavalent)	mg/kg	8	ND(0.10)	ND(0.10)
Cobalt	mg/kg	80	1.91	8.08
Copper	mg/kg	230	4.84	17.2
Lead	mg/kg	120	2.35	6.62
Magnesium (soluble)	mg/L	NV	ND(0.50)	ND(0.50)
Mercury	mg/kg	3.9	ND(0.0050)	0.0123
Molybdenum	mg/kg	40	ND(0.10)	0.20
Nickel	mg/kg	270	3.67	17.0
Selenium	mg/kg	5.5	ND(0.20)	ND(0.20)
Silver	mg/kg	40	ND(0.10)	ND(0.10)
Sodium (soluble)	mg/L	NV	11.8	95.3
Thallium	mg/kg	3.3	ND(0.050)	0.102
Uranium	mg/kg	33	0.249	0.470
Vanadium	mg/kg	86	9.97	27.0
Zinc	mg/kg	340	8.4	35.4
Petroleum Hydrocarbons (PHCs)				
Petroleum hydrocarbons F1 (C6-C10)	mg/kg	55	ND(5.0)	ND(5.0)
Petroleum hydrocarbons F1 minus BTEX	mg/kg	55	ND(5)	ND(5)
Petroleum hydrocarbons F2 (C10-C16)	mg/kg	230	ND(10)	ND(10)
Petroleum hydrocarbons F2 minus Naphthalene	mg/kg	230	ND(25)	ND(25)
Petroleum hydrocarbons F3 (C16-C34)	mg/kg	1700	ND(50)	ND(50)
Petroleum hydrocarbons F3 minus PAH	mg/kg	1700	ND(50)	ND(50)
Petroleum hydrocarbons F4 (C34-C50)	mg/kg	3300	ND(50)	ND(50)
Total Petroleum Hydrocarbons (C6-C50)	mg/kg	NV	ND(80)	ND(80)
Geotech				
Grain size >75um	%	NV	--	10.9
Grain Size 0.005-0.075	%	NV	--	89.1
Texture	none	NV	--	Fine
General Chemistry				
Boron (hot water soluble)	mg/kg	2	ND(0.10)	0.12
Conductivity	mS/cm	1.4	0.0968	0.433
Cyanide, weak acid dissociable	mg/kg	0.051	ND(0.050)	ND(0.050)
Moisture	%	NV	3.00	13.5
pH, soluble (1:2)	s.u.	(5-11) 5-9	7.95	7.72
Sodium adsorption ratio (SAR)	none	12	1.70	ND(0.10) Incalclable

Notes:

- (1) Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011.
- Table 3: Full Depth Generic Site Condition Standards in a Non Potable Groundwater Condition for Industrial/Commercial/Community property use and coarse-textured soils.
- mBGS metres Below Ground Surface
- NV No Value
- Parameter not analyzed
- ND(0.050) Not detected at the associated reporting limit, indicated in brackets.
- mg/kg milligrams per kilogram
- mg/L milligrams per litre
- mS/cm millisiemens per centimetre
- % percent
- s.u. standard units

**Summary of Soil Analytical Results
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto**

			Sample Location:	Trip Blank
			Sample Identification:	TRIP BLANK
			Sample Date:	12/16/2022
			Sample Depth (mBGS):	-
			Laboratory Certificate of Analysis:	WT2225546
Parameters	Units	MOE Table 3 Standard ⁽¹⁾		
Volatile Organic Compounds (VOCs)				
1,1,1,2-Tetrachloroethane	mg/kg	0.087	ND(0.050)	
1,1,1-Trichloroethane	mg/kg	6.1	ND(0.050)	
1,1,2,2-Tetrachloroethane	mg/kg	0.05	ND(0.050)	
1,1,2-Trichloroethane	mg/kg	0.05	ND(0.050)	
1,1-Dichloroethane	mg/kg	17	ND(0.050)	
1,1-Dichloroethene	mg/kg	0.064	ND(0.050)	
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	0.05	ND(0.050)	
1,2-Dichlorobenzene	mg/kg	6.8	ND(0.050)	
1,2-Dichloroethane	mg/kg	0.05	ND(0.050)	
1,2-Dichloropropane	mg/kg	0.16	ND(0.050)	
1,3-Dichlorobenzene	mg/kg	9.6	ND(0.050)	
1,4-Dichlorobenzene	mg/kg	0.2	ND(0.050)	
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	70	ND(0.50)	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	31	ND(0.50)	
Acetone	mg/kg	16	ND(0.50)	
Benzene	mg/kg	0.32	ND(0.0050)	
Bromodichloromethane	mg/kg	18	ND(0.050)	
Bromoform	mg/kg	0.61	ND(0.050)	
Bromomethane (Methyl bromide)	mg/kg	0.05	ND(0.050)	
Carbon tetrachloride	mg/kg	0.21	ND(0.050)	
Chlorobenzene	mg/kg	2.4	ND(0.050)	
Chloroform (Trichloromethane)	mg/kg	0.47	ND(0.050)	
cis-1,2-Dichloroethene	mg/kg	55	ND(0.050)	
cis-1,3-Dichloropropene	mg/kg	NV	ND(0.030)	
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene	mg/kg	0.18	ND(0.05)	
Dibromochloromethane	mg/kg	13	ND(0.050)	
Dichlorodifluoromethane (CFC-12)	mg/kg	16	ND(0.050)	
Ethylbenzene	mg/kg	9.5	ND(0.015)	
Hexane	mg/kg	46	ND(0.050)	
m&p-Xylenes	mg/kg	NV	ND(0.030)	
Methylene chloride	mg/kg	1.6	ND(0.045)	
o-Xylene	mg/kg	NV	ND(0.030)	
Styrene	mg/kg	34	ND(0.050)	
Tetrachloroethene	mg/kg	4.5	ND(0.050)	
Toluene	mg/kg	68	ND(0.050)	
Total BTEX	mg/kg	NV	ND(0.1)	
trans-1,2-Dichloroethene	mg/kg	1.3	ND(0.050)	
trans-1,3-Dichloropropene	mg/kg	NV	ND(0.030)	
Trichloroethene	mg/kg	0.91	ND(0.010)	
Trichlorofluoromethane (CFC-11)	mg/kg	4	ND(0.050)	
Vinyl chloride	mg/kg	0.032	ND(0.020)	
Xylenes (total)	mg/kg	26	ND(0.05)	
Semi-VOCs				
1-Methylnaphthalene	mg/kg	76	--	
1-Methylnaphthalene/2-Methylnaphthalene	mg/kg	76	--	
2-Methylnaphthalene	mg/kg	76	--	
Acenaphthene	mg/kg	96	--	
Acenaphthylene	mg/kg	0.15	--	
Anthracene	mg/kg	0.67	--	
Benzo(a)anthracene	mg/kg	0.96	--	
Benzo(a)pyrene	mg/kg	0.3	--	
Benzo(b)fluoranthene/Benzo(j)fluoranthene	mg/kg	0.96	--	
Benzo(g,h,i)perylene	mg/kg	9.6	--	
Benzo(k)fluoranthene	mg/kg	0.96	--	
Chrysene	mg/kg	9.6	--	
Dibenz(a,h)anthracene	mg/kg	0.1	--	
Fluoranthene	mg/kg	9.6	--	
Fluorene	mg/kg	62	--	
Indeno(1,2,3-cd)pyrene	mg/kg	0.76	--	
Naphthalene	mg/kg	9.6	--	
Phenanthrene	mg/kg	12	--	
Pyrene	mg/kg	96	--	

**Summary of Soil Analytical Results
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto**

		Sample Location:	Trip Blank
		Sample Identification:	TRIP BLANK
		Sample Date:	12/16/2022
		Sample Depth (mBGS):	-
		Laboratory Certificate of Analysis:	WT2225546
Parameters	Units	MOE Table 3 Standard ⁽¹⁾	
Polychlorinated Biphenyls (PCBs)			
Aroclor-1016 (PCB-1016)	mg/kg	NV	--
Aroclor-1221 (PCB-1221)	mg/kg	NV	--
Aroclor-1232 (PCB-1232)	mg/kg	NV	--
Aroclor-1242 (PCB-1242)	mg/kg	NV	--
Aroclor-1248 (PCB-1248)	mg/kg	NV	--
Aroclor-1254 (PCB-1254)	mg/kg	NV	--
Aroclor-1260 (PCB-1260)	mg/kg	NV	--
Aroclor-1262 (PCB-1262)	mg/kg	NV	--
Aroclor-1268 (PCB-1268)	mg/kg	NV	--
Total PCBs	mg/kg	1.1	--
Metals			
Antimony	mg/kg	40	--
Arsenic	mg/kg	18	--
Barium	mg/kg	670	--
Beryllium	mg/kg	8	--
Boron	mg/kg	120	--
Cadmium	mg/kg	1.9	--
Calcium (soluble)	mg/L	NV	--
Chromium	mg/kg	160	--
Chromium VI (hexavalent)	mg/kg	8	--
Cobalt	mg/kg	80	--
Copper	mg/kg	230	--
Lead	mg/kg	120	--
Magnesium (soluble)	mg/L	NV	--
Mercury	mg/kg	3.9	--
Molybdenum	mg/kg	40	--
Nickel	mg/kg	270	--
Selenium	mg/kg	5.5	--
Silver	mg/kg	40	--
Sodium (soluble)	mg/L	NV	--
Thallium	mg/kg	3.3	--
Uranium	mg/kg	33	--
Vanadium	mg/kg	86	--
Zinc	mg/kg	340	--
Petroleum Hydrocarbons (PHCs)			
Petroleum hydrocarbons F1 (C6-C10)	mg/kg	55	ND(5.0)
Petroleum hydrocarbons F1 minus BTEX	mg/kg	55	ND(5)
Petroleum hydrocarbons F2 (C10-C16)	mg/kg	230	--
Petroleum hydrocarbons F2 minus Naphthalene	mg/kg	230	--
Petroleum hydrocarbons F3 (C16-C34)	mg/kg	1700	--
Petroleum hydrocarbons F3 minus PAH	mg/kg	1700	--
Petroleum hydrocarbons F4 (C34-C50)	mg/kg	3300	--
Total Petroleum Hydrocarbons (C6-C50)	mg/kg	NV	--
Geotech			
Grain size >75um	%	NV	--
Grain Size 0.005-0.075	%	NV	--
Texture	none	NV	--
General Chemistry			
Boron (hot water soluble)	mg/kg	2	--
Conductivity	mS/cm	1.4	--
Cyanide, weak acid dissociable	mg/kg	0.051	--
Moisture	%	NV	ND(0.25)
pH, soluble (1:2)	s.u.	(5-11) 5-9	--
Sodium adsorption ratio (SAR)	none	12	--

Notes:

- (1) Ontario Ministry of the Environment (MOE), "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011.
- Table 3: Full Depth Generic Site Condition Standards in a Non Potable Groundwater Condition for Industrial/Commercial/Community property use and coarse-textured soils.
- mBGS metres Below Ground Surface
- NV No Value
- Parameter not analyzed
- ND(0.050) Not detected at the associated reporting limit, indicated in brackets.
- mg/kg milligrams per kilogram
- mg/L milligrams per litre
- mS/cm millisiemens per centimetre
- % percent
- s.u. standard units

Table 3

**Summary of Waste Characterization Results
Phase II Environmental Site Assessment
10 Scarlett Road, Toronto, Ontario
City of Toronto**

		Sample Location:	TCLP
		Sample Identification:	S-12579218-121622-CM-TCLP
		Sample Date:	12/16/2022
		Lab Certificate of Analysis Number:	WT2225551
Parameters	Units	Ontario Regulation 347 Criteria ⁽¹⁾	
Volatiles (TCLP)			
1,1-Dichloroethene	mg/L	1.4	ND(0.025)
1,2-Dichlorobenzene	mg/L	20	ND(0.025)
1,2-Dichloroethane	mg/L	0.5	ND(0.025)
1,4-Dichlorobenzene	mg/L	0.5	ND(0.025)
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	200	ND(0.10)
Benzene	mg/L	0.5	ND(0.0050)
Carbon tetrachloride	mg/L	0.5	ND(0.025)
Chlorobenzene	mg/L	8	ND(0.025)
Chloroform (Trichloromethane)	mg/L	10	ND(0.10)
Methylene chloride	mg/L	5	ND(0.10)
Tetrachloroethene	mg/L	3	ND(0.025)
Trichloroethene	mg/L	5	ND(0.025)
Vinyl chloride	mg/L	0.2	ND(0.050)
Semi-volatiles (TCLP)			
Benzo(a)pyrene	mg/L	0.001	ND(0.00050)
Metals (TCLP)			
Arsenic	mg/L	2.5	ND(1.0)
Barium	mg/L	100	ND(2.5)
Boron	mg/L	500	ND(0.50)
Cadmium	mg/L	0.5	ND(0.050)
Chromium	mg/L	5	ND(0.25)
Lead	mg/L	5	ND(0.25)
Mercury	mg/L	0.1	ND(0.0010)
Selenium	mg/L	1	ND(0.10)
Silver	mg/L	5	ND(0.050)
Uranium	mg/L	10	ND(0.20)
PCBs (TCLP)			
Aroclor-1016 (PCB-1016)	mg/L	NV	ND(0.00020)
Aroclor-1221 (PCB-1221)	mg/L	NV	ND(0.00020)
Aroclor-1232 (PCB-1232)	mg/L	NV	ND(0.00020)
Aroclor-1242 (PCB-1242)	mg/L	NV	ND(0.00020)
Aroclor-1248 (PCB-1248)	mg/L	NV	ND(0.00020)
Aroclor-1254 (PCB-1254)	mg/L	NV	ND(0.00020)
Aroclor-1260 (PCB-1260)	mg/L	NV	ND(0.00020)
Aroclor-1262 (PCB-1262)	mg/L	NV	ND(0.00020)
Aroclor-1268 (PCB-1268)	mg/L	NV	ND(0.00020)
Total PCBs	mg/L	0.3	ND(0.00060)
General Chemistry (TCLP)			
Comment	none	NV	Brown Sand
Cyanide, weak acid dissociable	mg/L	20	ND(0.10)
Final pH	s.u.	NV	5.80
Flow rate	m/sec	NV	0.44
Fluoride	mg/L	150	ND(10)
Ignitability	none	NV	Negative
Ignitability temperature	Deg C	NV	20.0
Nitrate (as N)	mg/L	NV	ND(5.0)
Nitrite (as N)	mg/L	NV	ND(5.0)
Nitrite/Nitrate	mg/L	1000.00	ND(7.5)
pH, TCLP Extraction fluid initial	s.u.	NV	2.89

Notes:

⁽¹⁾ Environmental Protection Act, Waste Management Regulation 347, as amended by O. Reg. 558, Schedule 4, 1990.

NV no value

mg/L milligrams per litre

s.u. standard units

m/sec metre per second

Deg C degrees celcius

% percent

ND(0.025) Not detected above laboratory detection limited indicated in brackets

Appendices

Appendix A

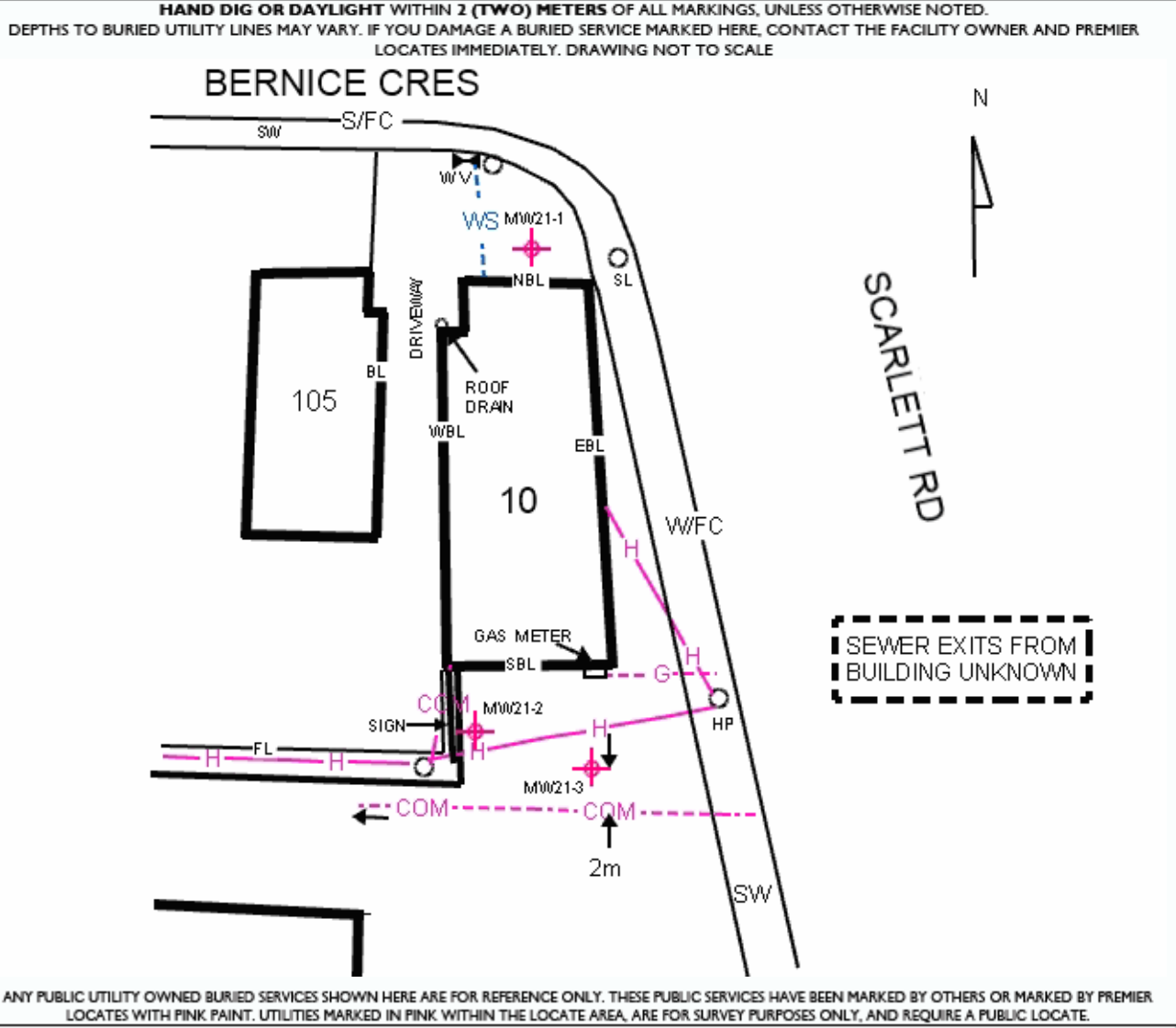
Private Utility Locates

UTILITY SERVICES LOCATED: <input type="checkbox"/> PRIVATELY OWNED	REQUEST / TICKET #: 37083	VALIDITY: 60 days from this date:	DATE LOCATED: 29-Nov-2022
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LOCATED AREA:	FROM: 1m radius at BH marks FROM: ___	TO: ___ TO: ___
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LEGEND

BOREHOLE	⊕
TEST PIT	⊞
PROPERTY LINE	FL
FENCE LINE	FL
BOLLARD	B
POST INDICATOR	PIV
VALVE	
CENTER LINE	CL
FACE CURB	FC
PAVED EDGE	PE
BUILDING LINE	BL
DRIVEWAY	DW
CRITICAL ZONE	CZ
RAILWAY	++++
SIDEWALK	SW
UTILITY POLE	UP
LIGHT STANDARD	LS
MANHOLE	MH
HAND HOLE	HH
CATCH BASIN	CB
FIRE HYDRANT	FH
TRANSFORMER	TX or ⓧ
VAULT	V
WATER VALVE	WV
WATER MANHOLE	WMH
WATER	W
HYDRO	H
GAS	G
ELECTRICAL	E
COMMUNICATION	C
FIBRE OPTIC	FO
TELEPHONE	T
CABLE TV	TV
SEWER	S
SPRINKLER	SP
SANITARY	SAN
STORM	STM
CLEANOUT	CLO
UNKNOWN TYPE	?
KIOSK	K
PHONE BOOTH	PB
PEDESTAL	ⓧ
DEMARICATION	DM
NORTH	N
SOUTH	S
EAST	E
WEST	W
OVERHEAD	---
UNDERGROUND	---
LOSS OF SIGNAL	~



DOCUMENTS TO BE USED WITH THIS LOCATE:
 PRIVATE LOCATE GUIDELINE (OWN YOUR SAFETY, 2021)
 DAMAGE PREVENTION FOR THE PROTECTION OF UNDERGROUN INFRASTRUCTURE, (CSA Z-247-15, AUG 2016)
 GUIDELINE FOR EXCAVATING PROXIMITY OF UNDERGROUND DISTRIBUTION LINES (ESA, FEB 2021)

(If you would like a copy of any of these documents, please contact our office at the number above.)

LOCATE METH- **ODS:**

UTILITY LOCATE METHODS USED: ACTIVE PASSIVE INDUCTIVE SWEEP PRIVATE DETECTABLE SERVICES FOUND: AS SHOWN ON DRAWING NONE

SEWER LINES: TRACED NOT TRACED MH OR CB INVERTS MARKED WHERE FOUND / VISIBLE

GEOPHYSICS: EXTERIOR 250 MHz GPR LINE SCAN EXTERIOR 250 MHz GPR GRID SCAN INTERIOR 1,000 MHz GPR LINE SCAN INTERIOR 1,000 MHz GPR GRID SCAN

SITE CONDITIONS / LIMITATIONS:
 IF THERE IS A LIMITATION INDICATED HERE, WRITTEN OR CHECKED, THERE IS AN **ELEVATED RISK** OF STRIKING A BURIED FACILITY. THE CLIENT REPRESENTATIVE IS TO NOTIFY ALL INVOLVED WITH THE PROJECT (INCLUDING AND NOT LIMITED TO ALL FIELD STAFF, PROJECT MANAGERS, THEIR CLIENT AND/OR PROPERTY OWNER OF THE SUBJECT PROPERTY IF THE SAME). ANY LIMITATION NOTED TRANSLATES INTO AN INCREASED RISK OF NOT FINDING ALL BURIED FACILITIES WITHIN THE WORK AREA.

AS-BUILT OR UTILITY DRAWINGS REQUESTED FROM: _____

SITE PLAN (SHOWING WORK AREA): Yes No PROPERTY AS-BUILT OR UTILITY DRAWINGS: Yes No SURVEY: Yes No

BUILDING ACCESS: Yes No NA SITE OPERATIONS PERSONNEL INTERVIEWED: Yes No NA

WEATHER: 3 C GROUND SNOW COVERED: Yes No

OBSTRUCTIONS: PARKED VEHICLES OVERGROWN VEGETATION PRODUCT STORAGE OTHER (specify): _____

LIST ANY OTHER LIMITATIONS:
 See notes and limitations on auxiliary page

UTILITY SERVICES LOCATED: <input type="checkbox"/> PRIVATELY OWNED	REQUEST / TICKET #: 37083	VALIDITY: 60 days from this date:	DATE LOCATED: 29-Nov-2022
--	---------------------------	-----------------------------------	---------------------------

LOCATED AREA:	FROM:	TO:
	FROM:	TO:

LEGEND	
BOREHOLE	⊕
TEST PIT	⊞
PROPERTY LINE	PL
FENCE LINE	— FL —
BOLLARD	B
POST INDICATOR	PIV
VALVE	V
CENTER LINE	CL
FACE CURB	FC
PAVED EDGE	PE
BUILDING LINE	BL
DRIVEWAY	DW
CRITICAL ZONE	CZ
RAILWAY	+++++
SIDEWALK	SW
UTILITY POLE	UP
LIGHT STANDARD	LS
MANHOLE	MH
HAND HOLE	HH
CATCH BASIN	▣ CB
FIRE HYDRANT	⊙ FH
TRANSFORMER	TX or ⓧ
VAULT	V
WATER VALVE	WV
WATER MANHOLE	WMH
WATER	— W —
HYDRO	— H —
GAS	— G —
ELECTRICAL	— E —
COMMUNICATION	— C —
FIBRE OPTIC	— FO —
TELEPHONE	— T —
CABLE TV	— TV —
SEWER	— S —
SPRINKLER	— SP —
SANITARY	SAN
STORM	STM
CLEANOUT	CLO
UNKNOWN TYPE	— ? —
KIOSK	K
PHONE BOOTH	PB
PEDESTAL	⊞
DEMARICATION	⓪
NORTH	N.
SOUTH	S.
EAST	E.
WEST	W.
OVERHEAD	— — —
UNDERGROUND	— — —
LOSS OF SIGNAL	~

HAND DIG OR DAYLIGHT WITHIN 2 (TWO) METERS OF ALL MARKINGS, UNLESS OTHERWISE NOTED.
 DEPTHS TO BURIED UTILITY LINES MAY VARY. IF YOU DAMAGE A BURIED SERVICE MARKED HERE, CONTACT THE FACILITY OWNER AND PREMIER LOCATES IMMEDIATELY. DRAWING NOT TO SCALE

NOTES AND LIMITATIONS

--Reviewed public locate package
 --No asbuilt or survey drawings available for review at time of locate
 --Confirmed gas service to building and buried communications just south of south property line
 --Overhead hydro and comm
 --Sewer exits from building unknown
 --Water service enters off of Bernice Cres.
 --Some visible cuts and patches in asphalt
 --Possible abandoned or untoneable infrastructure on property.
 --1m radius at BH marks

ANY PUBLIC UTILITY OWNED BURIED SERVICES SHOWN HERE ARE FOR REFERENCE ONLY. THESE PUBLIC SERVICES HAVE BEEN MARKED BY OTHERS OR MARKED BY PREMIER LOCATES WITH PINK PAINT. UTILITIES MARKED IN PINK WITHIN THE LOCATE AREA, ARE FOR SURVEY PURPOSES ONLY, AND REQUIRE A PUBLIC LOCATE.

DOCUMENTS TO BE USED WITH THIS LOCATE: PRIVATE LOCATE GUIDELINE (OWN YOUR SAFETY, 2021) DAMAGE PREVENTION FOR THE PROTECTION OF UNDERGROUN INFRASTRUCTURE, (CSA Z-247-15, AUG 2016) GUIDELINE FOR EXCAVATING PROXIMITY OF UNDERGROUND DISTRIBUTION LINES (ESA, FEB 2021)	(If you would like a copy of any of these documents, please contact our office at the number above.)
--	--

LOCATE METH- UTILITY LOCATE METHODS USED: <input checked="" type="checkbox"/> ACTIVE <input checked="" type="checkbox"/> PASSIVE <input type="checkbox"/> INDUCTIVE SWEEP SEWER LINES: <input type="checkbox"/> TRACED <input type="checkbox"/> NOT TRACED <input type="checkbox"/> MH OR CB INVERTS MARKED WHERE FOUND / VISIBLE GEOPHYSICS: <input type="checkbox"/> EXTERIOR 250 MHz GPR LINE SCAN <input type="checkbox"/> EXTERIOR 250 MHz GPR GRID SCAN <input type="checkbox"/> INTERIOR 1,000 MHz GPR LINE SCAN <input type="checkbox"/> INTERIOR 1,000 MHz GPR GRID SCAN	ODS: PRIVATE DETECTABLE SERVICES FOUND: <input checked="" type="checkbox"/> AS SHOWN ON DRAWING <input type="checkbox"/> NONE
---	---

SITE CONDITIONS / LIMITATIONS:
 IF THERE IS A LIMITATION INDICATED HERE, WRITTEN OR CHECKED, THERE IS AN **ELEVATED RISK** OF STRIKING A BURIED FACILITY. THE CLIENT REPRESENTATIVE IS TO NOTIFY ALL INVOLVED WITH THE PROJECT (INCLUDING AND NOT LIMITED TO ALL FIELD STAFF, PROJECT MANAGERS, THEIR CLIENT AND/OR PROPERTY OWNER OF THE SUBJECT PROPERTY IF THE SAME). ANY LIMITATION NOTED TRANSLATES INTO AN INCREASED RISK OF NOT FINDING ALL BURIED FACILITIES WITHIN THE WORK AREA.

AS-BUILT OR UTILITY DRAWINGS REQUESTED FROM: _____

SITE PLAN (SHOWING WORK AREA): Yes No PROPERTY AS-BUILT OR UTILITY DRAWINGS: Yes No SURVEY: Yes No

BUILDING ACCESS: Yes No NA SITE OPERATIONS PERSONNEL INTERVIEWED: Yes No NA

WEATHER: 3 C GROUND SNOW COVERED: Yes No

OBSTRUCTIONS: PARKED VEHICLES OVERGROWN VEGETATION PRODUCT STORAGE OTHER (specify): _____

LIST ANY OTHER LIMITATIONS:
 See notes and limitations on auxiliary page



PREMIER LOCATES

PRIVATELY-OWNED UTILITY LOCATE CLIENT COMPANY ACKNOWLEDGEMENTS

PAGE 3 OF 3

BY SIGNING OR RECEIVING AN EMAILED COPY OF THIS LOCATE REPORT, THE CLIENT HAS READ, ACKNOWLEDGES AND AGREES TO THE FOLLOWING:

EXCAVATOR
AN EXCAVATOR IS ANY PERSON, PARTNERSHIP, CORPORATION, PUBLIC AGENCY, AGENT, OR OTHER ENTITY THAT IS RESPONSIBLE FOR CARRYING OUT A GROUND DISTURBANCE.

GROUND DISTURBANCE / EXCAVATE
GROUND DISTURBANCE OR EXCAVATE MEANS ANY WORK, OPERATION, OR ACTIVITY ON OR UNDER THE EXISTING SURFACE RESULTING IN A DISTURBANCE OR DISPLACEMENT OF THE SOILD OR GROUND COVER. GROUND DISTURBANCE OR EXCAVATE CAN INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: DIGGING; EXCAVATION; TRENCHING; DITCHING; TUNNELING; BORING/DRILLING/PUSHING; AUGERING; TOPSOIL STRIPPING; LAND LEVELLING/GRADING; FLOWING TO INSTALL UNDERGROUND INFRASTRUCTURE; TREE PLANTING; CLEARING AND STUMP REMOVAL; SUBSOILING; BLASTING/USE OF EXPLOSIVES; QUARRYING; GRINDING AND MILLING OF ASPHALT/CONCRETE; SEISMIC EXPLORATION; DRIVING FENCE POSTS, BARS, RODS, PINS, ANCHORS, OR PILLING; AND, CROSSING OF BURIED PIPELINES OR OTHER UNDERGROUND INFRASTRUCTURE BY HEAVY LOADS OFF THE TRAVELLED PORTION OF A PUBLIC ROADWAY.

LIMIT OF LOCATE
THE EXCAVATOR MUST NOT WORK OUTSIDE THE INDICATED LOCATE AREA WITHOUT FURTHER LOCATES BY PREMIER LOCATES INC. (SUBSEQUENTLY REFERRED TO AS "PLI").

MULTIPLE EXCAVATORS
WHEN A LOCATE IS BEING PROVIDED FOR MORE THAN ONE PARTY WORKING ON THE PROJECT, THE PERSON NAMED ON THIS LOCATE REPORT IS CONSIDERED TO BE ACTING ON BEHALF OF THE EXCAVATOR IN ACCEPTING AND ENSURING THE EXCAVATOR RECEIVES A COPY OF THIS LOCATE.

VALIDITY OF LOCATE
THIS LOCATE IS ONLY VALID FOR 60 DAYS UNLESS STATED OTHERWISE ON THE LOCATE REPORT. A RE-MARK OF SURFICIAL MARKINGS PLACED ON THE SITE BY PLI MUST BE OBTAINED PRIOR TO ANY EXCAVATION IF: THE DATE OF EXCAVATION IS PAST THE VALIDATION PERIOD; MARKINGS BECOME UNCLEAR, DISAPPEAR, ARE DISTURBED OR DISPLACED; THE SKETCH AND SITE MARKINGS DO NOT COINCIDE; THE WORK LOCATION HAS CHANGED; AND, IF ANYTHING OCCURS WHICH MAY INDICATE THAT A NEW, BETTER, OR DIFFERENT LOCATE SERVICE IS NEEDED.

GROUND MARKINGS
IF THE MARKINGS DISAPPEAR OR ARE DISPLACED OR SHOULD SKETCH MARKINGS NOT COINCIDE WITH GROUND MARKINGS. THE PRIVATE LOCATE IS INVALID AND PLI WILL NEED TO BE CONTACTED TO EITHER REFRESH THE MARKINGS OR FIX ANY DISCREPANCY.

LEGAL REQUIREMENTS
YOU ARE REQUIRED BY LAW TO HAVE ALL BURIED PUBLIC AND PRIVATE UTILITIES LOCATED AND MARKED IN THE VICINITY OF ANY WORK BEFORE PERFORMING ANY TYPE OF EXCAVATION OR DRILLING ACTIVITIES. YOU MUST HAVE VALID PUBLIC LOCATES FOR YOUR WORK AREA. FINES AND PENALTIES BY PUBLIC AUTHORITIES CAN BE GIVEN IF WORKING WITH EXPIRED LOCATES.

PUBLIC LOCATES
ANY PUBLIC UTILITY OWNED SERVICES (GAS, TELEPHONE, CABLE TV, HYDRO, WATER, SEWER, ETC.) WITHIN THE LIMITS OF THIS LOCATE AND SHOWN ON THIS LOCATE REPORT, ARE FOR REFERENCE ONLY. THESE PUBLIC UTILITIES HAVE BEEN MARKED BY OTHERS OR MARKED BY PLI WITH PINK PAINT. ANY BURIED UTILITIES MARKED IN PINK WITHIN THE LOCATE AREA, ARE FOR SURVEY PURPOSES ONLY, AND REQUIRE A PUBLIC LOCATE BEFORE EXCAVATING. IT IS THE RESPONSIBILITY OF THE CLIENT TO ENSURE AND VERIFY THAT THE INTENDED WORK ARE COINCIDES WITH THE WORK AREAS DRAWN OR DESCRIBED ON ALL PUBLIC AND PRIVATE UTILITY LOCATE REPORTS.

SCOPE OF WORK
THIS PRIVATE LOCATE REPORT IS BASED ON INFORMATION GIVEN AT THE TIME OF THE LOCATE. ANY CHANGES TO THE LOCATION OR SCOPE OF WORK REQUIRES A NEW LOCATE REPORT.

BUILDING AND/OR SERVICE ROOM ACCESS
SOME CABLES OR PIPES MAY NOT BE DETECTED OR LOCATED IF DIRECT PHYSICAL ACCESS TO BUILDING SERVICE ROOMS ARE NOT PROVIDED AT THE TIME OF THE LOCATE.

PHYSICAL LIMITATIONS
IF THERE ARE ANY PHYSICAL LIMITATIONS AT THE SITE (I.E. SNOW-COVERED GROUND, PARKED CARS, EQUIPMENT OR MATERIALS, ETC. CONGESTING THE AREA TO BE LOCATED), THE CLIENT IS HEREBY MADE AWARE AND ACKNOWLEDGES THAT SOME CABLES OR PIPES MAY NOT BE DETECTED OR LOCATED IF THE LOCATE AREA IS NOT CLEAR OF THESE OBSTRUCTIONS AT THE TIME OF THE LOCATE.

INTERIOR LOCATES
DUE TO BUILDING INTERFERENCES, CONGESTION, AND HIDDEN OR INACCESSIBLE ELECTRICAL CONDUITS OR PIPES, SOME CABLES OR PIPES MAY OR MAY NOT BE DETECTED WITH THE EQUIPMENT EMPLOYED BY PLI. PLI USES GROUND PENETRATING RADAR (GPR) WITH A 1000 MHZ ANTENNA ALONG WITH ELECTROMAGNETIC CABLE LOCATE EQUIPMENT WHILE PERFORMING INTERIOR PRIVATE LOCATES. SEWER LINES INSIDE BUILDINGS MAY NOT BE VISIBLE WITH GPR IF THEY ARE DEEPER THAN 2 FEET OR ARE COMPRISED OF A MATERIAL SUCH AS PLASTIC OR CLAY THAT ARE NOT VISIBLE TO GPR.

SANITARY AND STORM SEWERS
PLI USES A CCTV CAMERA WITH BUILT-IN SONDE TO LOCATE SEWER LINES PROVIDED: SEWER DRAWINGS HAVE BEEN PROVIDED TO PLI FROM THE PRIVATE LANDOWNER; THERE IS SUFFICIENT ACCESS TO THE SEWER LINE THAT DOES NOT REQUIRE CONFINED SPACE ENTRY; AND, THE SEWER LINE IS ON PRIVATE PROPERTY. IF A MANHOLE OR CATCHBASIN IS SHOWN ON A DRAWING OR FOUND DURING THE LOCATE, PLI WILL ATTEMPT TO OPEN THEM, MARK THE INVERT DIRECTION, AND USE A CCTV CAMERA WITH SONDE TO LOCATE THE LINE IF SO REQUESTED BY THE CLIENT. IF PLI IS UNABLE OPEN THE MH OR CB, DETERMINE THE DIRECTION OF THE INVERTS, OR LOCATE THE BURIED LINE, IT WILL BE INDICATED AS A LIMITATION AND NOTED ON THE LOCATE REPORT. THE CLIENT ALSO ACKNOWLEDGES THAT TRUNK SEWER AND WATER MAINS MAY NOT BE DETECTABLE AND REQUIRE A PUBLIC LOCATE IF WITHIN AN EASEMENT ON PRIVATE PROPERTY.

UNDERGROUND STORAGE TANKS AND ASSOCIATED EQUIPMENT
PLI DOES NOT LOCATE UNDERGROUND STORAGE TANKS OR ANY ASSOCIATED EQUIPMENT UNLESS GROUND PENETRATING RADAR AND/OR AN EM61 TIME DOMAIN METAL DETECTOR IS EMPLOYED AT THE TIME OF THE LOCATE. THE CLIENT ALSO HAS BEEN MADE AWARE OF AND ACKNOWLEDGES THAT ANY EXCAVATING OR DRILLING WITHIN PLI DEFINED CRITICAL AREAS (FOUND IN THE MEMBER LOGIN AREA AT WWW.PREMIERLOCATES.CA) AROUND ANY UNDERGROUND PETROLEUM EQUIPMENT AND STRUCTURES SUCH AS UNDERGROUND STORAGE TANKS (USTS) AND FUEL DISPENSERS; AND, WITHIN THE AREA BETWEEN USTS, PUMP DISPENSERS AND FUEL KIOSK, REQUIRES HAND DIGGING OR SOFT DIGGING WITH VACUUM EXCAVATION EQUIPMENT TO EXPOSE THE WORK AREA.

- LIMITATIONS**
- THE TECHNOLOGIES EMPLOYED BY PLI TO TRACE AND MARK BURIED FACILITIES ARE COMPLIANT WITH ACSE STANDARD 38-02 LEVEL B, WHICH ARE ASSIGNED TO HAVE A MODERATE RISK. THESE GEO-PHYSICAL METHODS ARE NOT 100% EFFECTIVE AND CANNOT DETECT ALL BURIED SERVICES SINCE THERE ARE TOO MANY VARIABLES THAT CAN WORK AGAINST THE EQUIPMENT. IT MAY NOT BE POSSIBLE TO ABSOLUTELY "CLEAR" REGARDLESS OF THE SKILL, EFFORT, OR TECHNOLOGIES USED BY PLI. LOCATING METHODS USED BY PLI ONLY HELPS REDUCE RISK OF STRIKING A BURIED UTILITY AND DOES NOT ELIMINATE THE RISK. IF PRECISE HORIZONTAL AND VERTICAL LOCATIONS OF BURIED FACILITIES ARE NEEDED, THEN ACSE STANDARD 38-02 QUALITY LEVEL A METHODS WOULD NEED TO BE EMPLOYED. QUALITY LEVEL A METHODS INVOLVE THE ACTUAL EXPOSURE OF A FACILITY BY MEANS OF EITHER HAND DIGGING OR THE USE OF VACUUM EXCAVATION SYSTEMS.
 - SOME CABLES OR PIPES MAY NOT BE DETECTABLE OR LOCATED ACCURATELY DUE TO DEPTH, LACK OF OR MALFUNCTIONING TRACER WIRES, MATERIAL MAKEUP, CONFINED SPACES, OR INABILITY TO CONNECT PROPERLY. THIS MAY BE COMPOUNDED BY THE LACK OF ACCESS OR ACCESS TOO FAR FROM THE AREA TO BE TRACED.
 - THE LOCATION AND MARKING OF BURIED FACILITIES BY THE PLI LOCATE TECHNICIAN FOR THE CLIENT REPRESENTATIVE IS FOR THE CONVENIENCE OF THAT SAID APPLICANT ONLY AND DOES NOT RELIEVE SAID APPLICANT, OR ANY PERSON OR CORPORATION, FROM LIABILITY FOR DAMAGES OR PERSONAL INJURY INCLUDING DEATH TO ANY PERSON OR FOR PROPERTY DAMAGE CAUSED TO THE SAID PLANT OR TO ANY OTHER PROPERTY. BY REASON OF THE SAID APPLICANT, OR ANY OTHER PERSON OR CORPORATION, HAVING RELIED UPON THE LOCATION AND MARKING OF FACILITIES BY PLI.
 - IF THERE ARE ANY LIMITATIONS NOTED ON THE LOCATE REPORT AND/OR SITE SERVICES CHECKLIST, THE CLIENT ACCEPTING THIS LOCATE REPORT MUST INFORM ALL INVOLVED WITH THE PROJECT OF THE LIMITATION INCLUDING AND NOT LIMITED TO: ALL FIELD STAFF; PROJECT MANAGERS; THEIR CLIENT; AND THE PROPERTY OWNER OF THE SUBJECT PROPERTY. THE PROPERTY OWNER IS ULTIMATELY RESPONSIBLE FOR THEIR BURIED FACILITIES AND SHOULD HAVE THE FINAL DECISION IN HOW TO EXCAVATE NEAR THEIR BURIED FACILITIES IF THEY CANNOT BE ACCURATELY LOCATED AND MARKED. WHOEVER ACCEPTS THE LIMITATION CLAIMS RESPONSIBILITY IF A BURIED FACILITY IS DAMAGED AS A RESULT OF THE LIMITATION.
 - THE PRIVATE UTILITY LOCATE PREPARED BY PLI IS FOR THE USE OF THE CLIENT. IF THE CLIENT'S PROVIDES THE LOCATE REPORT TO A SUB-CONTRACTORS FOR RELIANCE, THE SUB-CONTRACTOR MUST BE GIVEN A COPY OF THE LOCATE REPORT AND NOTIFIED OF ANY LIMITATIONS NOTED WITHIN THE LOCATE REPORT.

THE PERSON ACCEPTING THIS PRIVATE UTILITY LOCATE REPORT, AGREES THAT THEY FULLY UNDERSTAND ALL OF THE INFORMATION PRESENTED IN THE LOCATE REPORT, SITE SERVICES CHECKLIST, AND CLIENT COMPANY ACKNOWLEDGEMENT.

THE CLIENT WARRANTS THAT PLI IS NOT LIABLE FOR ANY CLAIMS FOR DAMAGES TO ANY UNDERGROUND FACILITY WHERE PLI WAS NOT NOTIFIED OF SUCH DAMAGE FORTHWITH, SUCH THAT PLI CAN COMPLETE A DAMAGE INVESTIGATION TO PHYSICALLY VIEW ANY SUCH DAMAGED UNDERGROUND FACILITY WHETHER OR NOT ANY SUCH DAMAGE MAY ATTRIBUTED TO ERRORS OR OMISSIONS COMMITTED BY PLI IN PERFORMING THE WORK.

PLI SHALL NOT BE LIABLE FOR ANY AMOUNT IN EXCESS OF THE FEES PAID BY THE CLIENT TO PLI FOR THE SERVICE ON ACCOUNT OF ANY LOSS, INJURY, DEATH OR DAMAGE WHETHER RESULTING DIRECTLY OR INDIRECTLY TO A PERSON OR PROPERTY IRRESPECTIVE OF THE CAUSE OR ORIGIN OF SUCH LOSS, INJURY, DEATH OR DAMAGE INCLUDING, WITHOUT LIMITATION, LOSS, INJURY, DEATH OR DAMAGE ATTRIBUTABLE TO THE NEGLIGENCE OF PLI, ITS EMPLOYEES AND AGENTS IN THE PERFORMANCE OR NON-PERFORMANCE OF THE SERVICE.

CLIENT COMPANY ACKNOWLEDGEMENTS - GPR & EM61

BY SIGNING OR RECEIVING AN EMAILED COPY OF THIS LOCATE REPORT, THE CLIENT HAS READ, ACKNOWLEDGES AND AGREES TO THE FOLLOWING:

DATA PRESENTATION

THE GEOPHYSICAL DATA WERE ACQUIRED AT THE STATION SPACING AND ON THE DATE AS SHOWN ON THE FRONT OF THIS SHEET.

THE INTERPRETATION OF THE GROUND PENETRATING RADAR (GPR) AND/OR EM61 IS PRESENTED ON THE SKETCH ON THE FRONT OF THIS SHEET AND WITH PAINT MARKS IN THE WORK STUDY AREA.

THE GPR AND EM61 DATA ARE PRESENTED ALONG A SURVEY LINE, DISPLAYED FROM LEFT TO RIGHT. THE GPR DATA IS A REPRESENTATIVE IMAGE OF THE GPR SIGNAL AMPLITUDE AND IS NOT AN IMAGE OF THE SUBSURFACE. THE GPR SIGNAL PENETRATION DEPTH IS NOTED ON THE FRONT OF THIS SHEET. THE STANDARD EM61 CANNOT DETECT SINGLE OBJECTS AND DEPTHS MUCH GREATER THAN 3-4 METERS.

GEOPHYSICAL DATA RECORDED ON-SITE IS RE-EXAMINED AFTER THE COMPLETION OF THE SURVEY AND A SUPPLEMENTAL REPORT WILL BE SENT IF COMPUTER ANALYZED DATA DIFFERS FROM THE FIELD TECHNICIANS INTERPRETATION.

TECHNICAL LIMITATIONS

THE INTERPRETATION OF THE GEOPHYSICAL DATA OBTAINED DURING THE INVESTIGATION IS INTENDED FOR THE GUIDANCE OF THE CLIENT ONLY. SHOULD THIS INTERPRETATION OF THE DATA BE USED DURING ANY SUBSEQUENT PROGRAMS, THE USER MUST BE AWARE OF THE FOLLOWING INTERPRETIVE RESTRICTIONS:

THE CLIENT ACKNOWLEDGES THAT THE LAWS OF FUNDAMENTAL PHYSICS APPLY AND DO NOT ENABLE PREMIER LOCATES INC. (PLI) LOCATING EQUIPMENT TO DETECT ALL UTILITIES, OBJECTS, FEATURES, AND STRUCTURES OR TO PROVIDE ALL COORDINATES OF THE POSITION THEREOF. PIPE, CABLE, CONDUIT, UTILITIES, OBJECTS, FEATURES OR STRUCTURES WHICH ARE NOT DETECTABLE (I.E. NOT "LOCATABLE") BECAUSE OF THE LAWS OF FUNDAMENTAL PHYSICS CANNOT BE LOCATED BY PLI AND ARE NOT THE SUBJECT OF THE PROVISION OF THE "SERVICE" PURSUANT TO THIS CONTRACT.

THE "SERVICE" PROVIDED TO THIS CONTRACT IS THE LOCATION, Laterally and longitudinally, of utilities, objects, features or structures and the subsequent marking of the site according to the standard subsurface utility locating industry practice. The depth and/or size of pipe, cable, conduits, utilities, objects, features and structures is recorded only if the client has requested prior to the start of the survey.

A "DETECTABLE FEATURE" DEFINED BY THIS INVESTIGATION MAY CONSIST OF A CABLE, WIRE, PIPE, CONDUIT, STRUCTURE OR OTHER OBJECT CONTAINED WITHIN THE SUBSURFACE. DIFFERENTIATION BETWEEN THESE TYPES OF FEATURES IS NOT PROMISED NOR GUARANTEED. A FEATURE IS ONLY DETECTABLE IF THE SUBSURFACE ALLOWS THE GPR SIGNAL TO PROPAGATE DEEP ENOUGH TO DEFINE THE FEATURE. GPR PENETRATION INTO THE SUBSURFACE VARIES DEPENDING UPON THE SUBSURFACE CONDITIONS AND IS NOT CONTROLLED BY THE RADAR EQUIPMENT OR THE TECHNICIAN'S ABILITY. LIMITED PENETRATION IS CAUSED BY HIGH-CONDUCTIVITY MATERIALS SUCH AS CLAY AND SILT SOILS AND SOLIDS THAT ARE SALT CONTAMINATED. PERFORMANCE IS ALSO LIMITED BY SIGNAL SCATTERING IN HETEROGENEOUS CONDITIONS (E.G. ROCKY SOILS, LARGE TREE ROOTS, CONSTRUCTION DEBRIS ETC.), SNOW, DISSOLVED SOLIDS, MOISTURE, Voids, AND FEATURES HAVING A SIGNIFICANT ELECTROMAGNETIC VARIANCE.

ACCURACY OF INFERRED BURIED DETECTABLE FEATURES WILL VARY DUE TO SUBSURFACE SOIL CONDITIONS AND SURFACE CONDITIONS (I.E. LOOSE DIRT, ICE, SNOW, TALL GRASS, AND WATER).

PLI IS NOT LIABLE FOR DAMAGES, IF ANY, RESULTING FROM PHYSICAL EXPOSURE OF ANY 'DETECTABLE FEATURES' BY THE CLIENT, OR THEIR REPRESENTATIVES, OR THEIR SUB-CONTRACTORS, OR ANY OTHER PERSON, OR CORPORATION, BASED ON THE INFORMATION PROVIDED.

AREAS CONSIDERED TO BE INACCESSIBLE (AN "INACCESSIBLE AREA") FOR THE SERVICE INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: THOSE OF PHYSICALLY RESTRICTED ACCESS; THOSE COVERED BY A STRUCTURE OR OBJECT (I.E. BUILDING WALLS, VEHICLES, EQUIPMENT, DEBRIS, STOCKPILES OF MATERIAL OR SNOW ETC.); THOSE COVERED BY OPEN WATER; THOSE COVERED BY WOODS OR VEGETATION TOO THICK TO PERMIT EASY WALKING; THOSE WITH SURFACE TERRAIN SLOPES STEEPER THAN 1:3; AND, THOSE WHERE THE SAFETY OF THE TECHNICIAN IS JEOPARDIZED (I.E. UNSTABLE FOOTING, ENVIRONMENTAL HAZARDS, UNCONTROLLED ROADS, ETC.). THE JUDGEMENT OF THE PLI TECHNICIAN WILL PREVAIL ON ACCESSIBILITY DECISIONS.

IT IS THE RESPONSIBILITY OF THE CLIENT TO PROVIDE DIRECT AND SIMPLE ACCESS FREE FROM SURFACE OBJECTS TO ANY AND ALL SURVEY AREAS. PLI ACCEPTS NO RESPONSIBILITY FOR SURVEYING IN ANY AREAS WHERE THE CLIENT DOES NOT PROVIDE ACCESS AND/OR APPROPRIATE WORKPLACE SAFETY MEASURES. AREAS CONSIDERED TO BE INACCESSIBLE FOR SCANNING AND MARKING, ASIDE FROM RESTRICTED ACCESS, INCLUDE THE FOLLOWING, BUT NOT LIMITED TO: WITHIN 1.0 M OF A STRUCTURE OR OBJECT (I.E. WALLS, VEHICLES, EQUIPMENT, DEBRIS, STOCKPILES OF MATERIALS, ETC.).

THE EM61 AND/OR EM31 RESPONSES OF TARGETS MAY BE DETECTED ONLY IF THEY ARE GREATER THAN THE BACKGROUND NOISE LEVELS. GEOPHYSICAL NOISE (NOT SENSOR SENSITIVITY) IS THEREFORE THE LIMITING FACTOR IN DETERMINING THRESHOLDS AND DETECTION DEPTHS.

LIMITS OF PREMIER LOCATES INC. LIABILITY

ANY INFORMATION PROVIDED BY PLI REGARDING THE LOCATION OF UNDERGROUND UTILITIES BY GPR AND/OR EM61 AND/OR EM31, DOES NOT SUBSTITUTE FOR A FULL PRIVATE UTILITY LOCATE PERFORMED BY PLI. THE SERVICE IS PROVIDED TO ASSIST WITH EXCAVATION PLANNING ONLY. THE CLIENT IS ALWAYS RESPONSIBLE FOR OBTAINING SANCTIONED LOCATES FROM THE OWNERS OF UNDERGROUND PLANT SUCH AS ELECTRIC CABLES, NATURAL GAS, ANY TYPE OF PIPELINE, TELECOMMUNICATIONS, CABLE TV, FIBRE-OPTIC CABLES, WATER, SEWER, OIL, STEAM, ETC. THE CLIENT MUST CONTACT THE UTILITY OWNERS DIRECTLY, OR THEIR CALL CENTRE, TO FACILITATE THESE LOCATES.

PLI MARKING OF UNDERGROUND FEATURES IS ONLY FOR THE CONVENIENCE OF THE CLIENT, AND THIS DOES NOT RELIEVE THE CLIENT, OR ANY OTHER PERSON, OR CORPORATION, FROM LIABILITY FOR DAMAGES FOR PERSON INJURY INCLUDING DEATH, OR FOR PROPERTY DAMAGE OR LIABILITY CAUSED TO OR FROM ANY UNDERGROUND UTILITY, WITHIN THE AREA ON THE PROPERTY WHERE THE UNDERGROUND UTILITY AND/OR CLEARANCE WAS MARKED, OR ANY OTHER PROPERTY, BY REASON OF THE CLIENT, ITS REPRESENTATIVES, OR ANY OTHER PERSON, OR CORPORATION HAVING RELIED UPON THE SURFACE MARKING PROVIDED BY PLI.

PLI IS NOT LIABLE FOR DAMAGES RESULTING FROM PHYSICAL EXPOSURE OF ANY UNDERGROUND FEATURES BY THE CLIENT, ITS REPRESENTATIVES, THEIR SUB-CONTRACTORS OR ANY OTHER PERSON OR CORPORATION.

THE SERVICE COMPLETED BY PLI IS BASED ON INFORMATION PROVIDED BY THE CLIENT AT OR PRIOR TO THE EARLIER OF THE TIME WHEN THE SERVICE IS DESCRIBED IN THIS CONTRACT OR THE PERFORMANCE OF THE SERVICE. THE SERVICE PROVIDED BY PLI REGARDING THE LOCATION OF ANY UNDERGROUND UTILITY, OBJECT OR STRUCTURE, IS ON A BEST EFFORT AND BEST PRACTICES BASIS.

A RE-MARK OF SURFICIAL MARKINGS PLACED ON THE SITE BY PLI MUST BE OBTAINED PRIOR TO ANY EXCAVATION IF:

- MARKINGS BECOME UNCLEAR, DISAPPEAR, ARE DISTURBED OR DISPLACED;
- THE SKETCH AND SITE MARKINGS DO NOT COINCIDE;
- THE WORK LOCATION HAS CHANGED;
- IF ANYTHING OCCURS WHICH MAY INDICATE THAT A NEW OR BETTER OR DIFFERENT LOCATE SERVICE IS NEEDED.

IF THE CLIENT EXCAVATES OUTSIDE THE LIMIT OF LOCATE AREA, PLI ACCEPTS NO RESPONSIBILITY.

THE CLIENT WARRANTS THAT PLI IS NOT LIABLE FOR ANY CLAIMS FOR DAMAGES TO ANY UNDERGROUND PLANT WHERE PLI WAS NOT NOTIFIED OF SUCH DAMAGE FORTHWITH SUCH THAT PLI CAN COMPLETE A DAMAGE INVESTIGATION TO PHYSICALLY VIEW ANY SUCH DAMAGED UNDERGROUND PLANT WHETHER OR NOT ANY SUCH DAMAGE MAY BE ATTRIBUTED TO ERRORS OR OMISSIONS COMMITTED BY PLI IN PERFORMING THE WORK.

PLI SHALL NOT BE LIABLE FOR ANY AMOUNT IN EXCESS OF THE FEES PAID BY THE CLIENT TO PLI FOR THE SERVICE ON ACCOUNT OF ANY LOSS, INJURY, DEATH OR DAMAGE WHETHER RESULTING DIRECTLY OR INDIRECTLY TO A PERSON OR PROPERTY IRRESPECTIVE OF THE CAUSE OR ORIGIN OF SUCH LOSS, INJURY, DEATH OR DAMAGE.

DATE OF LOCATE: 29-Nov-2022 (see each auxiliary page(s) for the validity period for each buried service marked)

COMPANY: GHD Limited TICKET #: 37083 PLI JOB #:

REQUESTED BY: David Hutchinson PHONE #: 6475396726 EMAIL ADDRESS: david.hutchinson@ghd.com

COMPANY ADDRESS: 111 Brunel Road, Suite 200, Mississauga P.O. / JOB #: 12579218

LOCATE ADDRESS: 10 Scarlett Road, YORK EXCAVATION DATE: 05-Dec-2022

SITE MEET WITH EXCAVATOR?: Yes No IF YES, SITE CONTACT NAME: SITE CONTACT PHONE #:

TYPE AND LOCATION OF WORK (check all that apply):
 PUBLIC PROPERTY PRIVATE PROPERTY EXTERIOR INTERIOR
 BOREHOLE DRILLING DIRECTIONAL DRILLING MACHINE DIG VACUUM EXCAVATION HAND DIG OTHER:

CLIENT REMARKS / INSTRUCTIONS: 	LOCATE TECHNICIAN (DPT) REMARKS: <input checked="" type="checkbox"/> IF CHECKED, PRIVATE UTILITY LOCATE LIMITATIONS EXIST FOR THIS WORK SITE. SEE THE PRIVATE AUXILIARY PAGE FOR THE LIMITATION(S)	THIRD PARTY NOTIFICATION: <i>If there is a STOP warning in this box, you must not dig and:</i> <ul style="list-style-type: none"> • Check each Auxiliary Locate Report in this locate package and follow the STOP instructions from that Utility Owner
---	--	---

LOCATE SERVICES PROVIDED: PRIVATELY-OWNED INFRASTRUCTURE GEOPHYSICAL SURVEY PRE-ENGINEERING (SUE / SUM)
 THE FOLLOWING UTILITY OWNED INFRASTRUCTURE:

AN AUXILIARY REPORT WILL ACCOMPANY THIS PRIMARY SHEET FOR EVERY CHECKED AND LISTED SERVICE HERE.

PLEASE READ AND UNDERSTAND ALL SPECIAL INSTRUCTIONS FROM EACH UTILITY OWNER CHECKED HERE. THESE INSTRUCTIONS CAN BE FOUND ON EACH INDIVIDUAL AUXILIARY LOCATE REPORT THAT ACCOMPANIES THIS PRIMARY LOCATE REPORT.

MARKING COLOURS: (These colours are used by Premier Locates to identify each Utility line marked as part of this locate.)

- | | |
|--|--|
| <p>YELLOW Gas, Oil, Steam, Petroleum, or Gaseous Materials</p> <p>ORANGE Communications - Phones, Cable TV, Alarm or Signal Lines, Cables, or Conduit</p> <p>RED Electric Power Lines, Cables, Conduit, and Lighting</p> <p>BLUE Potable Water</p> | <p>GREEN Sewers and Drains (Sanitary & Storm Infrastructure)</p> <p>PINK Temporary Survey Marks (SUE / SUM)</p> <p>PURPLE Reclaimed Water, Irrigation, and Slurry Lines</p> <p>WHITE Proposed Excavation Limits (White Lining)</p> |
|--|--|

EQUIPMENT USED:
 EM TRANSMITTER / RECEIVER PUSH SEWER CAMERA / SONDE ROBOTIC SEWER CAMERA LATERAL LAUNCH SEWER CAMERA MAGNOMETER / PIN FINDER
 NOGGIN GPR 250 MHz WITH GPS CONQUEST GPR 1000 MHz EM61 EM31

DAY 1: START TIME: 8:00am TECH 1: JP 3.0 hrs. hrs. TECH 2: _____ hrs. FINISH TIME: 9:00am TECH 3: _____ hrs. TECH 4: _____ hrs.	DAY 2: START TIME: _____ TECH 1: _____ hrs. TECH 2: _____ hrs. FINISH TIME: _____ TECH 3: _____ hrs. TECH 4: _____ hrs.	DPT NAME: J. Paquette DPT ID #: LOCATE DELIVERED VIA EMAIL
--	--	--

ACKNOWLEDGMENTS / WARNINGS:

READ AND FULLY UNDERSTAND ALL THE PAGES CONTAINED IN THIS LOCATE REPORT. THIS LOCATE REPORT INCLUDES THIS PRIMARY LOCATE REPORT, AN AUXILIARY LOCATE REPORT FOR EACH LOCATE SERVICE PROVIDED BY PREMIER LOCATES INC., AS WELL AS THE DISCLAIMER AND CLIENT ACKNOWLEDGEMENT SHEETS FOR EACH AUXILIARY REPORT.

LOCATES ARE VALID FOR A LIMITED TIME FRAME. SEE THE VALIDITY PERIODS FOR EACH UTILITY OWNER INDICATED ON EACH AUXILIARY SHEET IN THIS REPORT.

THIS LOCATE REPORT IN ITS ENTIRETY MUST BE AT THE WORK SITE AND IN THE HANDS OF THE PERSON EXCAVATING DURING ANY TYPE OF GROUND DISTURBANCE WORK FOR THIS LOCATE TO BE VALID. IF GROUND MARKINGS DO NOT MATCH THE LOCATE REPORT, ARE MISSING, OR THE EXCAVATOR FINDS AN ERROR WITH THIS REPORT, THIS LOCATE IS INVALID.

ANY CHANGES TO LOCATION OR NATURE OF EXCAVATION WORK REQUIRES A NEW LOCATE. THE EXCAVATOR MUST NOT WORK OUTSIDE THE LOCATED AREA WITHOUT A NEW LOCATE. FOR ALL LOCATE REQUESTS, INCLUDING REMARKS, CONTACT PREMIER LOCATES AT THE NUMBER ABOVE FOR A NEW LOCATE.

EACH UTILITY OWNER DEFINES THEIR OWN TOLERANCE DISTANCE. THE TOLERANCE DISTANCE IS THE HORIZONTAL SPACE ON EITHER SIDE OF THE MARKED FACILITY THAT MUST BE EXPOSED USING SOFT EXCAVATION TECHNIQUES (CHECK WITH EACH UTILITY OWNER FOR THEIR APPROVED PROCEDURES FOR SOFT EXCAVATION TECHNIQUES). PLEASE CHECK THE TOLERANCE DISTANCE NOTED ON EACH AUXILIARY SHEET. DO NOT USE MECHANICAL EXCAVATION EQUIPMENT WITHIN THE TOLERANCE DISTANCE OF A MARKED BURIED FACILITY.

BY ACCEPTING THIS REPORT VIA EMAIL AND RELYING UPON THIS LOCATE REPORT, THE RECIPIENT ACKNOWLEDGES AND IS IN AGREEMENT TO ALL THE TERMS AND CONDITIONS AND LIMITATIONS ON EACH LOCATE SHEET.

Appendix B

Stratigraphic and Instrumentation Logs



STRATIGRAPHIC LOG (OVERBURDEN)

PROJECT NAME: Phase II Environmental Site Assessment
 PROJECT NUMBER: 12579218
 CLIENT: City of Toronto
 LOCATION: 10 Scarlett Road, Toronto, Ontario

HOLE DESIGNATION: BH1-22
 DATE COMPLETED: 16 December 2022
 DRILLING METHOD: Direct Push
 FIELD PERSONNEL: C. McMahon

File: \\GHDNET\GHD\CAMISS\SAUGA\PROJECTS\66212579218\TECH\GINT\12579218-MI.GPJ Library File: GHD_ENV\IRO_V08.GLB Report: OVERBURDEN LOG Date: 10/3/23

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE				
			NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.09	ASPHALT	0.09		X			
0.5	SP-SAND (FILL), loose, poorly graded, brown, moist, vegetative black staining, no odour		1	X			0.0
1.0	- no staining, no odour from 0.76 to 11.58m BGS		2	X			0.0
1.5			3	X			0.0
2.0			4	X			0.0
2.13	SW-GRAVELLY SAND, loose, brown, moist	2.13		X			
2.5			5	X			0.0
3.0			6	X			0.0
3.5			7	X			0.0
4.0			8	X			0.0
4.5	- rock fragments from 4.57 to 4.72m BGS		9	X			0.0
5.0			10	X			0.0
5.5			11	X			0.0
6.0				X			
6.40	SP-SAND, trace clay, trace gravel, loose, brown, moist	6.40		X			
6.5				X			0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



STRATIGRAPHIC LOG (OVERBURDEN)

PROJECT NAME: Phase II Environmental Site Assessment
 PROJECT NUMBER: 12579218
 CLIENT: City of Toronto
 LOCATION: 10 Scarlett Road, Toronto, Ontario

HOLE DESIGNATION: BH1-22
 DATE COMPLETED: 16 December 2022
 DRILLING METHOD: Direct Push
 FIELD PERSONNEL: C. McMahon

File: \\GHDNET\GHD\CAMISS\SAUGA\PROJECTS\66212579218\TECH\INT\12579218-MI.GPJ Library File: GHD_ENV\IRO_V08.GLB Report: OVERBURDEN LOG Date: 10/3/23

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE				
			NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
7.5			12	X			0.0
8.0			13	X			0.0
8.5			14	X			0.0
9.0	- clay seam, shale fragments from 8.99 to 9.14m BGS		15	X			0.0
9.5			16	X			0.0
10.0			17	X			0.0
10.5	CL-CLAY, few sand, trace gravel, firm, medium plasticity, brown, wet	10.36	18	X			0.0
11.0	- moist from 10.97 to 11.58m BGS		19	X			0.0
11.5	END OF BOREHOLE @ 11.58m BGS	11.58					
12.0							
12.5							
13.0							
13.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Phase II Environmental Site Assessment
 PROJECT NUMBER: 12579218
 CLIENT: City of Toronto
 LOCATION: 10 Scarlett Road, Toronto, Ontario

HOLE DESIGNATION: MW2-22
 DATE COMPLETED: 16 December 2022
 DRILLING METHOD: Direct Push
 FIELD PERSONNEL: C. McMahon

File: \\GHDNET\GHD\CAMISS\SAUGA\PROJECTS\66212579218\TECH\GINT\12579218-MI.GPJ Library File: GHD_ENV\IRO_V08.GLB Report: OVERBURDEN LOG Date: 10/3/23

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
0.0 - 0.15	ASPHALT	0.15						
0.15 - 1.52	SP-SAND (FILL), loose, poorly graded, brown, moist - clay seam, with gravel from 0.61 to 0.76m BGS			1	X	90		0.0
				2	X	90		0.0
				3	X	95		0.0
				4	X	95		0.0
				5	X	95		0.0
				6	X	95		0.1
				7	X	95		0.0
				8	X	95		0.0
				9	X	95		0.0
				10	X	95		0.0
			11	X	95		0.0	
1.52 - 6.5	SW-GRAVELLY SAND, loose, brown, moist	1.52						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



GRAIN SIZE ANALYSIS





STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Phase II Environmental Site Assessment
 PROJECT NUMBER: 12579218
 CLIENT: City of Toronto
 LOCATION: 10 Scarlett Road, Toronto, Ontario

HOLE DESIGNATION: MW2-22
 DATE COMPLETED: 16 December 2022
 DRILLING METHOD: Direct Push
 FIELD PERSONNEL: C. McMahon

File: \\GHDNET\GHD\CAMISS\SAUGA\PROJECTS\66212579218\TECH\INT\12579218-ML.GPJ Library File: GHD_ENV\IRO_V08.GLB Report: OVERBURDEN LOG Date: 10/3/23

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITOR INSTALLATION	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
7.5				12	X	95		0.1
8.0				13	X	50		0.0
8.5	CL-CLAY, firm, medium plasticity, brown, moist	8.08		14	X	60		0.0
9.0	CL-CLAY, few gravel, trace sand, firm, medium plasticity, brown, moist - very moist from 8.84 to 9.14m BGS	8.69	Well Screen	15	X	95		0.0
9.5	SP-SAND, trace gravel, loose, brown, moist	9.45	Sand Pack	16	X	95		0.0
10.0				17	X	75		0.0
10.5				18	X	75		0.0
11.0				19	X	59		0.0
11.5	END OF BOREHOLE @ 11.58m BGS	11.58	COMPLETION DETAILS Screened interval: 7.32 to 10.36m BGS Length: 3.05m Diameter: 51mm Slot Size: #10 Material: PVC Sand Pack: 6.71 to 11.58m BGS Material: Silica					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



GRAIN SIZE ANALYSIS



Appendix C

Laboratory Certificates of Analysis



CERTIFICATE OF ANALYSIS

Work Order	: WT2225546	Page	: 1 of 19
Amendment	: 1		
Client	: GHD Limited	Laboratory	: Waterloo - Environmental
Contact	: Jennifer Balkwill	Account Manager	: Rick Hawthorne
Address	: 455 Phillip Street Waterloo ON Canada N2L 3X2	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: 12579218	Date Samples Received	: 19-Dec-2022 15:51
PO	: 735-005186	Date Analysis	: 20-Dec-2022
		Commenced	
C-O-C number	: ----	Issue Date	: 08-Feb-2023 12:45
Sampler	: CLIENT		
Site	: ----		
Quote number	: 12579218-SSOW-735-005186 City of Toronto Quote Q88890		
No. of samples received	: 7		
No. of samples analysed	: 7		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Amanda Ganouri-Lumsden	Department Manager - Microbiology and Prep	Centralized Prep, Waterloo, Ontario
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Organics, Waterloo, Ontario
Jeremy Gingras	Team Leader - Semi-Volatile Instrumentation	Organics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Metals, Waterloo, Ontario
Sarah Birch	VOC Section Supervisor	Organics, Waterloo, Ontario
Xihua Yao	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan



General Comments

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
%	percent
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
mS/cm	millisiemens per centimetre
pH units	pH units

>: greater than.

<: less than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

08-Feb-2023. IDs updated for ALS samples 1 through 5. All analysis results are as per the previous report.



Analytical Results

WT2225546-001

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-MW2-22_4-6

Client sampling date / time: 16-Dec-2022 09:30

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Particle Size								
Sand (>0.075mm)	----	91.9	1.0	%	E178	-	21-Dec-2022	786020
Fines (<0.075mm)	----	8.1	1.0	%	E178	-	21-Dec-2022	786020
Texture class	----	Coarse	-	-	E178	-	21-Dec-2022	786020

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

Analytical Results

WT2225546-002

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-MW2-22_6-8

Client sampling date / time: 16-Dec-2022 10:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Physical Tests								
Conductivity (1:2 leachate)	----	0.0968	0.00500	mS/cm	E100-L	28-Dec-2022	29-Dec-2022	784920
Moisture	----	3.00	0.25	%	E144	-	20-Dec-2022	784516
pH (1:2 soil:CaCl2-aq)	----	7.95	0.10	pH units	E108A	20-Dec-2022	23-Dec-2022	784512
Cyanides								
Cyanide, weak acid dissociable	----	<0.050	0.050	mg/kg	E336A	20-Dec-2022	22-Dec-2022	784513
Fixed-Ratio Extractables								
Calcium, soluble ion content	7440-70-2	3.66	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Magnesium, soluble ion content	7439-95-4	<0.50	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium, soluble ion content	17341-25-2	11.8	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium adsorption ratio [SAR]	----	1.70	0.10	-	E484	28-Dec-2022	28-Dec-2022	784919
Metals								
Antimony	7440-36-0	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Arsenic	7440-38-2	1.09	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Barium	7440-39-3	8.24	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Beryllium	7440-41-7	0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron	7440-42-8	<5.0	5.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron, hot water soluble	7440-42-8	<0.10	0.10	mg/kg	E487	28-Dec-2022	28-Dec-2022	784921
Cadmium	7440-43-9	<0.020	0.020	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Chromium	7440-47-3	4.39	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Cobalt	7440-48-4	1.91	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Copper	7440-50-8	4.84	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Lead	7439-92-1	2.35	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Mercury	7439-97-6	<0.0050	0.0050	mg/kg	E510	28-Dec-2022	29-Dec-2022	784917
Molybdenum	7439-98-7	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Nickel	7440-02-0	3.67	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Selenium	7782-49-2	<0.20	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Silver	7440-22-4	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Thallium	7440-28-0	<0.050	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Uranium	7440-61-1	0.249	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Vanadium	7440-62-2	9.97	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Zinc	7440-66-6	8.4	2.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Speciated Metals								



Analytical Results

WT2225546-002

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-MW2-22_6-8

Client sampling date / time: 16-Dec-2022 10:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Speciated Metals								
Chromium, hexavalent [Cr VI]	18540-29-9	<0.10	0.10	mg/kg	E532	20-Dec-2022	22-Dec-2022	784514
Volatile Organic Compounds								
Acetone	67-64-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Benzene	71-43-2	<0.0050	0.0050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromodichloromethane	75-27-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromoform	75-25-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromomethane	74-83-9	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Carbon tetrachloride	56-23-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chlorobenzene	108-90-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chloroform	67-66-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromochloromethane	124-48-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromoethane, 1,2-	106-93-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,2-	95-50-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,3-	541-73-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,4-	106-46-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorodifluoromethane	75-71-8	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,1-	75-34-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,2-	107-06-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, 1,1-	75-35-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, cis-1,2-	156-59-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, trans-1,2-	156-60-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloromethane	75-09-2	<0.045	0.045	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropane, 1,2-	78-87-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis+trans-1,3-	542-75-6	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis-1,3-	10061-01-5	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, trans-1,3-	10061-02-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Ethylbenzene	100-41-4	<0.015	0.015	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hexane, n-	110-54-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl ethyl ketone [MEK]	78-93-3	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl isobutyl ketone [MIBK]	108-10-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl-tert-butyl ether [MTBE]	1634-04-4	<0.040	0.040	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Styrene	100-42-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2-	630-20-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2-	79-34-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethylene	127-18-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Toluene	108-88-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,1-	71-55-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,2-	79-00-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethylene	79-01-6	<0.010	0.010	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichlorofluoromethane	75-69-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Vinyl chloride	75-01-4	<0.020	0.020	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, m+p-	179601-23-1	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, o-	95-47-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylenes, total	1330-20-7	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
BTEX, total	----	<0.10	0.1	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hydrocarbons								



Analytical Results

WT2225546-002

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-MW2-22_6-8

Client sampling date / time: 16-Dec-2022 10:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QC/OT
Hydrocarbons								
F1 (C6-C10)	----	<5.0	5.0	mg/kg	E581.F1	21-Dec-2022	22-Dec-2022	786352
F2 (C10-C16)	----	<10	10	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F2-Naphthalene	----	<25	25	mg/kg	EC600	-	30-Dec-2022	-
F3 (C16-C34)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F3-PAH	n/a	<50	50	mg/kg	EC600	-	30-Dec-2022	-
F4 (C34-C50)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F1-BTEX	----	<5.0	5	mg/kg	EC580	-	22-Dec-2022	-
Hydrocarbons, total (C6-C50)	----	<80	80	mg/kg	EC581	-	22-Dec-2022	-
Chromatogram to baseline at nC50	n/a	YES	-	-	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Hydrocarbons Surrogates								
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	85.8	1.0	%	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Dichlorotoluene, 3,4-	95-75-0	105	1.0	%	E581.F1	21-Dec-2022	22-Dec-2022	786352
Volatile Organic Compounds Surrogates								
Bromofluorobenzene, 4-	460-00-4	88.1	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Difluorobenzene, 1,4-	540-36-3	97.2	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	83-32-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Acenaphthylene	208-96-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Anthracene	120-12-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benz(a)anthracene	56-55-3	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(a)pyrene	50-32-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(b+j)fluoranthene	n/a	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(g,h,i)perylene	191-24-2	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(k)fluoranthene	207-08-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Chrysene	218-01-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Dibenz(a,h)anthracene	53-70-3	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluoranthene	206-44-0	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluorene	86-73-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Indeno(1,2,3-c,d)pyrene	193-39-5	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1-	90-12-0	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1+2-	----	<0.050	0.05	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 2-	91-57-6	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene	91-20-3	<0.010	0.010	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene	85-01-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Pyrene	129-00-0	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Polycyclic Aromatic Hydrocarbons Surrogates								
Acridine-d9	34749-75-2	69.8	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Chrysene-d12	1719-03-5	78.0	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene-d8	1146-65-2	80.4	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene-d10	1517-22-2	81.4	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Polychlorinated Biphenyls								
Aroclor 1016	12674-11-2	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1221	11104-28-2	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1232	11141-16-5	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1242	53469-21-9	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1248	12672-29-6	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343



Analytical Results

WT2225546-002

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-MW2-22_6-8

Client sampling date / time: 16-Dec-2022 10:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Polychlorinated Biphenyls								
Aroclor 1254	11097-69-1	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1260	11096-82-5	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1262	37324-23-5	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1268	11100-14-4	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Polychlorinated biphenyls [PCBs], total	----	<0.030	0.030	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Polychlorinated Biphenyls Surrogates								
Decachlorobiphenyl	2051-24-3	88.8	0.1	%	E687	22-Dec-2022	23-Dec-2022	786343
Tetrachloro-m-xylene	877-09-8	82.4	0.1	%	E687	22-Dec-2022	23-Dec-2022	786343

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

Analytical Results

WT2225546-003

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-MW2-22_28-30

Client sampling date / time: 16-Dec-2022 12:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Physical Tests								
Conductivity (1:2 leachate)	----	0.433	0.00500	mS/cm	E100-L	28-Dec-2022	29-Dec-2022	784920
Moisture	----	13.5	0.25	%	E144	-	20-Dec-2022	784516
pH (1:2 soil:CaCl2-aq)	----	7.72	0.10	pH units	E108A	20-Dec-2022	23-Dec-2022	784512
Particle Size								
Sand (>0.075mm)	----	10.9	1.0	%	E178	-	21-Dec-2022	786020
Fines (<0.075mm)	----	89.1	1.0	%	E178	-	21-Dec-2022	786020
Texture class	----	Fine	-	-	E178	-	21-Dec-2022	786020
Cyanides								
Cyanide, weak acid dissociable	----	<0.050	0.050	mg/kg	E336A	20-Dec-2022	22-Dec-2022	784513
Fixed-Ratio Extractables								
Calcium, soluble ion content	7440-70-2	<0.50	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Magnesium, soluble ion content	7439-95-4	<0.50	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium, soluble ion content	17341-25-2	95.3	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium adsorption ratio [SAR]	----	Incalculable	0.10	-	E484	28-Dec-2022	28-Dec-2022	784919
Metals								
Antimony	7440-36-0	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Arsenic	7440-38-2	3.22	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Barium	7440-39-3	51.1	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Beryllium	7440-41-7	0.45	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron	7440-42-8	7.6	5.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron, hot water soluble	7440-42-8	0.12	0.10	mg/kg	E487	28-Dec-2022	28-Dec-2022	784921
Cadmium	7440-43-9	0.063	0.020	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Chromium	7440-47-3	16.8	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Cobalt	7440-48-4	8.08	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Copper	7440-50-8	17.2	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Lead	7439-92-1	6.62	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Mercury	7439-97-6	0.0123	0.0050	mg/kg	E510	28-Dec-2022	29-Dec-2022	784917



Analytical Results

WT2225546-003

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-MW2-22_28-30

Client sampling date / time: 16-Dec-2022 12:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Metals								
Molybdenum	7439-98-7	0.20	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Nickel	7440-02-0	17.0	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Selenium	7782-49-2	<0.20	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Silver	7440-22-4	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Thallium	7440-28-0	0.102	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Uranium	7440-61-1	0.470	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Vanadium	7440-62-2	27.0	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Zinc	7440-66-6	35.4	2.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Speciated Metals								
Chromium, hexavalent [Cr VI]	18540-29-9	<0.10	0.10	mg/kg	E532	20-Dec-2022	22-Dec-2022	784514
Volatile Organic Compounds								
Acetone	67-64-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Benzene	71-43-2	<0.0050	0.0050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromodichloromethane	75-27-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromoform	75-25-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromomethane	74-83-9	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Carbon tetrachloride	56-23-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chlorobenzene	108-90-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chloroform	67-66-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromochloromethane	124-48-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromoethane, 1,2-	106-93-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,2-	95-50-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,3-	541-73-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,4-	106-46-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorodifluoromethane	75-71-8	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,1-	75-34-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,2-	107-06-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, 1,1-	75-35-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, cis-1,2-	156-59-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, trans-1,2-	156-60-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloromethane	75-09-2	<0.045	0.045	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropane, 1,2-	78-87-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis+trans-1,3-	542-75-6	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis-1,3-	10061-01-5	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, trans-1,3-	10061-02-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Ethylbenzene	100-41-4	<0.015	0.015	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hexane, n-	110-54-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl ethyl ketone [MEK]	78-93-3	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl isobutyl ketone [MIBK]	108-10-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl-tert-butyl ether [MTBE]	1634-04-4	<0.040	0.040	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Styrene	100-42-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2-	630-20-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2,2-	79-34-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethylene	127-18-4	0.070	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Toluene	108-88-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,1-	71-55-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351



Analytical Results

WT2225546-003

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-MW2-22_28-30

Client sampling date / time: 16-Dec-2022 12:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Volatile Organic Compounds								
Trichloroethane, 1,1,2-	79-00-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethylene	79-01-6	<0.010	0.010	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichlorofluoromethane	75-69-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Vinyl chloride	75-01-4	<0.020	0.020	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, m+p-	179601-23-1	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, o-	95-47-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylenes, total	1330-20-7	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
BTEX, total	----	<0.10	0.1	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hydrocarbons								
F1 (C6-C10)	----	<5.0	5.0	mg/kg	E581.F1	21-Dec-2022	22-Dec-2022	786352
F2 (C10-C16)	----	<10	10	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F2-Naphthalene	----	<25	25	mg/kg	EC600	-	30-Dec-2022	-
F3 (C16-C34)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F3-PAH	n/a	<50	50	mg/kg	EC600	-	30-Dec-2022	-
F4 (C34-C50)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F1-BTEX	----	<5.0	5	mg/kg	EC580	-	22-Dec-2022	-
Hydrocarbons, total (C6-C50)	----	<80	80	mg/kg	EC581	-	22-Dec-2022	-
Chromatogram to baseline at nC50	n/a	YES	-	-	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Hydrocarbons Surrogates								
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	86.5	1.0	%	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Dichlorotoluene, 3,4-	95-75-0	80.1	1.0	%	E581.F1	21-Dec-2022	22-Dec-2022	786352
Volatile Organic Compounds Surrogates								
Bromofluorobenzene, 4-	460-00-4	77.9	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Difluorobenzene, 1,4-	540-36-3	85.9	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	83-32-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Acenaphthylene	208-96-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Anthracene	120-12-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(a)anthracene	56-55-3	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(a)pyrene	50-32-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(b+j)fluoranthene	n/a	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(g,h,i)perylene	191-24-2	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(k)fluoranthene	207-08-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Chrysene	218-01-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Dibenz(a,h)anthracene	53-70-3	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluoranthene	206-44-0	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluorene	86-73-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Indeno(1,2,3-c,d)pyrene	193-39-5	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1-	90-12-0	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1+2-	----	<0.050	0.05	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 2-	91-57-6	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene	91-20-3	<0.010	0.010	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene	85-01-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Pyrene	129-00-0	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Polycyclic Aromatic Hydrocarbons Surrogates								
Acridine-d9	34749-75-2	82.3	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279



Analytical Results

WT2225546-003

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-MW2-22_28-30

Client sampling date / time: 16-Dec-2022 12:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Polycyclic Aromatic Hydrocarbons Surrogates								
Chrysene-d12	1719-03-5	89.8	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene-d8	1146-65-2	88.0	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene-d10	1517-22-2	93.6	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279

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

Analytical Results

WT2225546-004

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-BH1-22_1-2

Client sampling date / time: 16-Dec-2022 14:45

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Physical Tests								
Conductivity (1:2 leachate)	----	0.208	0.00500	mS/cm	E100-L	28-Dec-2022	29-Dec-2022	784920
Moisture	----	7.02	0.25	%	E144	-	20-Dec-2022	784516
pH (1:2 soil:CaCl2-aq)	----	7.52	0.10	pH units	E108A	20-Dec-2022	23-Dec-2022	784512
Cyanides								
Cyanide, weak acid dissociable	----	<0.050	0.050	mg/kg	E336A	20-Dec-2022	22-Dec-2022	784513
Fixed-Ratio Extractables								
Calcium, soluble ion content	7440-70-2	7.21	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Magnesium, soluble ion content	7439-95-4	<0.50	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium, soluble ion content	17341-25-2	36.2	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium adsorption ratio [SAR]	----	3.71	0.10	-	E484	28-Dec-2022	28-Dec-2022	784919
Metals								
Antimony	7440-36-0	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Arsenic	7440-38-2	2.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Barium	7440-39-3	14.5	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Beryllium	7440-41-7	0.16	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron	7440-42-8	<5.0	5.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron, hot water soluble	7440-42-8	0.15	0.10	mg/kg	E487	28-Dec-2022	28-Dec-2022	784921
Cadmium	7440-43-9	0.051	0.020	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Chromium	7440-47-3	5.78	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Cobalt	7440-48-4	2.34	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Copper	7440-50-8	6.17	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Lead	7439-92-1	7.82	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Mercury	7439-97-6	0.0105	0.0050	mg/kg	E510	28-Dec-2022	29-Dec-2022	784917
Molybdenum	7439-98-7	0.14	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Nickel	7440-02-0	5.01	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Selenium	7782-49-2	<0.20	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Silver	7440-22-4	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Thallium	7440-28-0	<0.050	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Uranium	7440-61-1	0.253	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Vanadium	7440-62-2	12.5	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Zinc	7440-66-6	16.0	2.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Speciated Metals								



Analytical Results

WT2225546-004

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-BH1-22_1-2

Client sampling date / time: 16-Dec-2022 14:45

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Speciated Metals								
Chromium, hexavalent [Cr VI]	18540-29-9	<0.10	0.10	mg/kg	E532	20-Dec-2022	22-Dec-2022	784514
Volatile Organic Compounds								
Acetone	67-64-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Benzene	71-43-2	<0.0050	0.0050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromodichloromethane	75-27-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromoform	75-25-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromomethane	74-83-9	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Carbon tetrachloride	56-23-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chlorobenzene	108-90-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chloroform	67-66-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromochloromethane	124-48-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromoethane, 1,2-	106-93-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,2-	95-50-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,3-	541-73-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,4-	106-46-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorodifluoromethane	75-71-8	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,1-	75-34-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,2-	107-06-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, 1,1-	75-35-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, cis-1,2-	156-59-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, trans-1,2-	156-60-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloromethane	75-09-2	<0.045	0.045	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropane, 1,2-	78-87-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis+trans-1,3-	542-75-6	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis-1,3-	10061-01-5	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, trans-1,3-	10061-02-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Ethylbenzene	100-41-4	<0.015	0.015	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hexane, n-	110-54-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl ethyl ketone [MEK]	78-93-3	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl isobutyl ketone [MIBK]	108-10-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl-tert-butyl ether [MTBE]	1634-04-4	<0.040	0.040	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Styrene	100-42-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2-	630-20-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2-	79-34-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethylene	127-18-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Toluene	108-88-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,1-	71-55-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,2-	79-00-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethylene	79-01-6	<0.010	0.010	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichlorofluoromethane	75-69-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Vinyl chloride	75-01-4	<0.020	0.020	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, m+p-	179601-23-1	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, o-	95-47-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylenes, total	1330-20-7	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
BTEX, total	----	<0.10	0.1	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hydrocarbons								



Analytical Results

WT2225546-004

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-BH1-22_1-2

Client sampling date / time: 16-Dec-2022 14:45

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Hydrocarbons								
F1 (C6-C10)	----	<5.0	5.0	mg/kg	E581.F1	21-Dec-2022	22-Dec-2022	786352
F2 (C10-C16)	----	<10	10	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F2-Naphthalene	----	<25	25	mg/kg	EC600	-	30-Dec-2022	-
F3 (C16-C34)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F3-PAH	n/a	<50	50	mg/kg	EC600	-	30-Dec-2022	-
F4 (C34-C50)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F1-BTEX	----	<5.0	5	mg/kg	EC580	-	22-Dec-2022	-
Hydrocarbons, total (C6-C50)	----	<80	80	mg/kg	EC581	-	22-Dec-2022	-
Chromatogram to baseline at nC50	n/a	YES	-	-	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Hydrocarbons Surrogates								
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	86.1	1.0	%	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Dichlorotoluene, 3,4-	95-75-0	110	1.0	%	E581.F1	21-Dec-2022	22-Dec-2022	786352
Volatile Organic Compounds Surrogates								
Bromofluorobenzene, 4-	460-00-4	93.3	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Difluorobenzene, 1,4-	540-36-3	111	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	83-32-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Acenaphthylene	208-96-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Anthracene	120-12-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benz(a)anthracene	56-55-3	0.092	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(a)pyrene	50-32-8	0.126	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(b+j)fluoranthene	n/a	0.158	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(g,h,i)perylene	191-24-2	0.079	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(k)fluoranthene	207-08-9	0.066	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Chrysene	218-01-9	0.104	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Dibenz(a,h)anthracene	53-70-3	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluoranthene	206-44-0	0.198	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluorene	86-73-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Indeno(1,2,3-c,d)pyrene	193-39-5	0.094	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1-	90-12-0	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1+2-	----	<0.050	0.05	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 2-	91-57-6	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene	91-20-3	0.014	0.010	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene	85-01-8	0.094	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Pyrene	129-00-0	0.174	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Polycyclic Aromatic Hydrocarbons Surrogates								
Acridine-d9	34749-75-2	71.8	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Chrysene-d12	1719-03-5	75.0	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene-d8	1146-65-2	82.8	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene-d10	1517-22-2	83.7	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Polychlorinated Biphenyls								
Aroclor 1016	12674-11-2	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1221	11104-28-2	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1232	11141-16-5	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1242	53469-21-9	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1248	12672-29-6	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343



Analytical Results

WT2225546-004

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-BH1-22_1-2

Client sampling date / time: 16-Dec-2022 14:45

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Polychlorinated Biphenyls								
Aroclor 1254	11097-69-1	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1260	11096-82-5	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1262	37324-23-5	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1268	11100-14-4	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Polychlorinated biphenyls [PCBs], total	----	<0.030	0.030	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Polychlorinated Biphenyls Surrogates								
Decachlorobiphenyl	2051-24-3	98.8	0.1	%	E687	22-Dec-2022	23-Dec-2022	786343
Tetrachloro-m-xylene	877-09-8	83.5	0.1	%	E687	22-Dec-2022	23-Dec-2022	786343

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

Analytical Results

WT2225546-005

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-BH1-22_34-36

Client sampling date / time: 16-Dec-2022 15:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Physical Tests								
Conductivity (1:2 leachate)	----	0.555	0.00500	mS/cm	E100-L	28-Dec-2022	29-Dec-2022	784920
Moisture	----	18.9	0.25	%	E144	-	20-Dec-2022	784516
pH (1:2 soil:CaCl2-aq)	----	7.71	0.10	pH units	E108A	20-Dec-2022	23-Dec-2022	784512
Cyanides								
Cyanide, weak acid dissociable	----	<0.050	0.050	mg/kg	E336A	20-Dec-2022	22-Dec-2022	784513
Fixed-Ratio Extractables								
Calcium, soluble ion content	7440-70-2	11.5	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Magnesium, soluble ion content	7439-95-4	0.90	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium, soluble ion content	17341-25-2	98.5	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium adsorption ratio [SAR]	----	7.53	0.10	-	E484	28-Dec-2022	28-Dec-2022	784919
Metals								
Antimony	7440-36-0	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Arsenic	7440-38-2	3.26	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Barium	7440-39-3	77.6	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Beryllium	7440-41-7	0.55	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron	7440-42-8	8.9	5.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron, hot water soluble	7440-42-8	0.14	0.10	mg/kg	E487	28-Dec-2022	28-Dec-2022	784921
Cadmium	7440-43-9	0.070	0.020	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Chromium	7440-47-3	20.5	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Cobalt	7440-48-4	9.09	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Copper	7440-50-8	19.1	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Lead	7439-92-1	7.72	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Mercury	7439-97-6	0.0131	0.0050	mg/kg	E510	28-Dec-2022	29-Dec-2022	784917
Molybdenum	7439-98-7	0.23	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Nickel	7440-02-0	20.1	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Selenium	7782-49-2	<0.20	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Silver	7440-22-4	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918



Analytical Results

WT2225546-005

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-BH1-22_34-36

Client sampling date / time: 16-Dec-2022 15:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Metals								
Thallium	7440-28-0	0.133	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Uranium	7440-61-1	0.495	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Vanadium	7440-62-2	30.1	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Zinc	7440-66-6	42.8	2.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Speciated Metals								
Chromium, hexavalent [Cr VI]	18540-29-9	<0.10	0.10	mg/kg	E532	20-Dec-2022	22-Dec-2022	784514
Volatile Organic Compounds								
Acetone	67-64-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Benzene	71-43-2	<0.0050	0.0050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromodichloromethane	75-27-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromoform	75-25-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromomethane	74-83-9	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Carbon tetrachloride	56-23-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chlorobenzene	108-90-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chloroform	67-66-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromochloromethane	124-48-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromoethane, 1,2-	106-93-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,2-	95-50-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,3-	541-73-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,4-	106-46-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorodifluoromethane	75-71-8	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,1-	75-34-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,2-	107-06-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, 1,1-	75-35-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, cis-1,2-	156-59-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, trans-1,2-	156-60-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloromethane	75-09-2	<0.045	0.045	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropane, 1,2-	78-87-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis+trans-1,3-	542-75-6	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis-1,3-	10061-01-5	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, trans-1,3-	10061-02-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Ethylbenzene	100-41-4	<0.015	0.015	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hexane, n-	110-54-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl ethyl ketone [MEK]	78-93-3	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl isobutyl ketone [MIBK]	108-10-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl-tert-butyl ether [MTBE]	1634-04-4	<0.040	0.040	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Styrene	100-42-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2-	630-20-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2,2-	79-34-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethylene	127-18-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Toluene	108-88-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,1-	71-55-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,2-	79-00-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethylene	79-01-6	<0.010	0.010	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichlorofluoromethane	75-69-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Vinyl chloride	75-01-4	<0.020	0.020	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351



Analytical Results

WT2225546-005

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-BH1-22_34-36

Client sampling date / time: 16-Dec-2022 15:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Volatile Organic Compounds								
Xylene, m+p-	179601-23-1	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, o-	95-47-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylenes, total	1330-20-7	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
BTEX, total	----	<0.10	0.1	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hydrocarbons								
F1 (C6-C10)	----	<5.0	5.0	mg/kg	E581.F1	21-Dec-2022	22-Dec-2022	786352
F2 (C10-C16)	----	<10	10	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F2-Naphthalene	----	<25	25	mg/kg	EC600	-	30-Dec-2022	-
F3 (C16-C34)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F3-PAH	n/a	<50	50	mg/kg	EC600	-	30-Dec-2022	-
F4 (C34-C50)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F1-BTEX	----	<5.0	5	mg/kg	EC580	-	22-Dec-2022	-
Hydrocarbons, total (C6-C50)	----	<80	80	mg/kg	EC581	-	22-Dec-2022	-
Chromatogram to baseline at nC50	n/a	YES	-	-	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Hydrocarbons Surrogates								
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	86.0	1.0	%	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Dichlorotoluene, 3,4-	95-75-0	98.0	1.0	%	E581.F1	21-Dec-2022	22-Dec-2022	786352
Volatile Organic Compounds Surrogates								
Bromofluorobenzene, 4-	460-00-4	95.1	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Difluorobenzene, 1,4-	540-36-3	103	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	83-32-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Acenaphthylene	208-96-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Anthracene	120-12-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benz(a)anthracene	56-55-3	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(a)pyrene	50-32-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(b+j)fluoranthene	n/a	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(g,h,i)perylene	191-24-2	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(k)fluoranthene	207-08-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Chrysene	218-01-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Dibenz(a,h)anthracene	53-70-3	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluoranthene	206-44-0	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluorene	86-73-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Indeno(1,2,3-c,d)pyrene	193-39-5	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1-	90-12-0	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1+2-	----	<0.050	0.05	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 2-	91-57-6	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene	91-20-3	<0.010	0.010	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene	85-01-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Pyrene	129-00-0	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Polycyclic Aromatic Hydrocarbons Surrogates								
Acridine-d9	34749-75-2	77.6	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Chrysene-d12	1719-03-5	76.4	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene-d8	1146-65-2	82.6	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene-d10	1517-22-2	85.8	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279

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



Analytical Results

WT2225546-006

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: TRIP BLANK

Client sampling date / time: 16-Dec-2022 16:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Physical Tests								
Moisture	----	<0.25	0.25	%	E144	-	21-Dec-2022	785112
Volatile Organic Compounds								
Acetone	67-64-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Benzene	71-43-2	<0.0050	0.0050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromodichloromethane	75-27-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromoform	75-25-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromomethane	74-83-9	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Carbon tetrachloride	56-23-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chlorobenzene	108-90-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chloroform	67-66-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromochloromethane	124-48-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromoethane, 1,2-	106-93-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,2-	95-50-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,3-	541-73-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,4-	106-46-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorodifluoromethane	75-71-8	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,1-	75-34-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,2-	107-06-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, 1,1-	75-35-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, cis-1,2-	156-59-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, trans-1,2-	156-60-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloromethane	75-09-2	<0.045	0.045	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropane, 1,2-	78-87-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis+trans-1,3-	542-75-6	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis-1,3-	10061-01-5	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, trans-1,3-	10061-02-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Ethylbenzene	100-41-4	<0.015	0.015	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hexane, n-	110-54-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl ethyl ketone [MEK]	78-93-3	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl isobutyl ketone [MIBK]	108-10-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl-tert-butyl ether [MTBE]	1634-04-4	<0.040	0.040	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Styrene	100-42-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2-	630-20-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2-	79-34-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethylene	127-18-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Toluene	108-88-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,1-	71-55-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,2-	79-00-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethylene	79-01-6	<0.010	0.010	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichlorofluoromethane	75-69-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Vinyl chloride	75-01-4	<0.020	0.020	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, m+p-	179601-23-1	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, o-	95-47-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylenes, total	1330-20-7	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
BTEX, total	----	<0.10	0.1	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hydrocarbons								



Analytical Results

WT2225546-006

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: TRIP BLANK

Client sampling date / time: 16-Dec-2022 16:00

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Hydrocarbons								
F1 (C6-C10)	----	<5.0	5.0	mg/kg	E581.F1	21-Dec-2022	22-Dec-2022	786352
F1-BTEX	----	<5.0	5	mg/kg	EC580	-	22-Dec-2022	-
Hydrocarbons Surrogates								
Dichlorotoluene, 3,4-	95-75-0	100	1.0	%	E581.F1	21-Dec-2022	22-Dec-2022	786352
Volatile Organic Compounds Surrogates								
Bromofluorobenzene, 4-	460-00-4	86.9	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Difluorobenzene, 1,4-	540-36-3	97.0	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351

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

Analytical Results

WT2225546-007

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-DUP -

Client sampling date / time: 16-Dec-2022 14:55

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Physical Tests								
Conductivity (1:2 leachate)	----	0.219	0.00500	mS/cm	E100-L	28-Dec-2022	29-Dec-2022	784920
Moisture	----	8.65	0.25	%	E144	-	20-Dec-2022	784516
pH (1:2 soil:CaCl2-aq)	----	7.59	0.10	pH units	E108A	20-Dec-2022	23-Dec-2022	784512
Cyanides								
Cyanide, weak acid dissociable	----	<0.050	0.050	mg/kg	E336A	20-Dec-2022	22-Dec-2022	784513
Fixed-Ratio Extractables								
Calcium, soluble ion content	7440-70-2	7.22	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Magnesium, soluble ion content	7439-95-4	<0.50	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium, soluble ion content	17341-25-2	39.6	0.50	mg/L	E484	28-Dec-2022	28-Dec-2022	784919
Sodium adsorption ratio [SAR]	----	4.06	0.10	-	E484	28-Dec-2022	28-Dec-2022	784919
Metals								
Antimony	7440-36-0	0.14	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Arsenic	7440-38-2	3.08	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Barium	7440-39-3	18.6	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Beryllium	7440-41-7	0.18	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron	7440-42-8	<5.0	5.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Boron, hot water soluble	7440-42-8	0.20	0.10	mg/kg	E487	28-Dec-2022	28-Dec-2022	784921
Cadmium	7440-43-9	0.074	0.020	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Chromium	7440-47-3	6.02	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Cobalt	7440-48-4	2.22	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Copper	7440-50-8	6.99	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Lead	7439-92-1	12.4	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Mercury	7439-97-6	0.0173	0.0050	mg/kg	E510	28-Dec-2022	29-Dec-2022	784917
Molybdenum	7439-98-7	0.16	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Nickel	7440-02-0	4.77	0.50	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Selenium	7782-49-2	<0.20	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Silver	7440-22-4	<0.10	0.10	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Thallium	7440-28-0	<0.050	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918



Analytical Results

WT2225546-007

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-DUP -

Client sampling date / time: 16-Dec-2022 14:55

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Metals								
Uranium	7440-61-1	0.239	0.050	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Vanadium	7440-62-2	13.3	0.20	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Zinc	7440-66-6	22.6	2.0	mg/kg	E440	28-Dec-2022	28-Dec-2022	784918
Speciated Metals								
Chromium, hexavalent [Cr VI]	18540-29-9	0.19	0.10	mg/kg	E532	20-Dec-2022	22-Dec-2022	784514
Volatile Organic Compounds								
Acetone	67-64-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Benzene	71-43-2	<0.0050	0.0050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromodichloromethane	75-27-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromoform	75-25-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Bromomethane	74-83-9	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Carbon tetrachloride	56-23-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chlorobenzene	108-90-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Chloroform	67-66-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromochloromethane	124-48-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dibromoethane, 1,2-	106-93-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,2-	95-50-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,3-	541-73-1	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorobenzene, 1,4-	106-46-7	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichlorodifluoromethane	75-71-8	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,1-	75-34-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethane, 1,2-	107-06-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, 1,1-	75-35-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, cis-1,2-	156-59-2	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloroethylene, trans-1,2-	156-60-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloromethane	75-09-2	<0.045	0.045	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropane, 1,2-	78-87-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis+trans-1,3-	542-75-6	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, cis-1,3-	10061-01-5	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Dichloropropylene, trans-1,3-	10061-02-6	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Ethylbenzene	100-41-4	<0.015	0.015	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hexane, n-	110-54-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl ethyl ketone [MEK]	78-93-3	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl isobutyl ketone [MIBK]	108-10-1	<0.50	0.50	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Methyl-tert-butyl ether [MTBE]	1634-04-4	<0.040	0.040	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Styrene	100-42-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2-	630-20-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethane, 1,1,1,2,2-	79-34-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Tetrachloroethylene	127-18-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Toluene	108-88-3	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,1-	71-55-6	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethane, 1,1,2-	79-00-5	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichloroethylene	79-01-6	<0.010	0.010	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Trichlorofluoromethane	75-69-4	<0.050	0.050	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Vinyl chloride	75-01-4	<0.020	0.020	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylene, m+p-	179601-23-1	<0.030	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351



Analytical Results

WT2225546-007

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-DUP -

Client sampling date / time: 16-Dec-2022 14:55

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Volatile Organic Compounds								
Xylene, o-	95-47-6	0.032	0.030	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Xylenes, total	1330-20-7	<0.050	0.05	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
BTEX, total	----	<0.10	0.1	mg/kg	E611D	21-Dec-2022	22-Dec-2022	786351
Hydrocarbons								
F1 (C6-C10)	----	<5.0	5.0	mg/kg	E581.F1	21-Dec-2022	22-Dec-2022	786352
F2 (C10-C16)	----	<10	10	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F2-Naphthalene	----	<25	25	mg/kg	EC600	-	30-Dec-2022	-
F3 (C16-C34)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F3-PAH	n/a	<50	50	mg/kg	EC600	-	30-Dec-2022	-
F4 (C34-C50)	----	<50	50	mg/kg	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
F1-BTEX	----	<5.0	5	mg/kg	EC580	-	22-Dec-2022	-
Hydrocarbons, total (C6-C50)	----	<80	80	mg/kg	EC581	-	22-Dec-2022	-
Chromatogram to baseline at nC50	n/a	YES	-	-	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Hydrocarbons Surrogates								
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	84.8	1.0	%	E601.SG-L	29-Dec-2022	30-Dec-2022	790280
Dichlorotoluene, 3,4-	95-75-0	95.5	1.0	%	E581.F1	21-Dec-2022	22-Dec-2022	786352
Volatile Organic Compounds Surrogates								
Bromofluorobenzene, 4-	460-00-4	112	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Difluorobenzene, 1,4-	540-36-3	104	0.10	%	E611D	21-Dec-2022	22-Dec-2022	786351
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	83-32-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Acenaphthylene	208-96-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Anthracene	120-12-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benz(a)anthracene	56-55-3	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(a)pyrene	50-32-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(b+j)fluoranthene	n/a	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(g,h,i)perylene	191-24-2	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Benzo(k)fluoranthene	207-08-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Chrysene	218-01-9	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Dibenz(a,h)anthracene	53-70-3	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluoranthene	206-44-0	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Fluorene	86-73-7	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Indeno(1,2,3-c,d)pyrene	193-39-5	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1-	90-12-0	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 1+2-	----	<0.050	0.05	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Methylnaphthalene, 2-	91-57-6	<0.030	0.030	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene	91-20-3	<0.010	0.010	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene	85-01-8	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Pyrene	129-00-0	<0.050	0.050	mg/kg	E641A	29-Dec-2022	30-Dec-2022	790279
Polycyclic Aromatic Hydrocarbons Surrogates								
Acridine-d9	34749-75-2	73.7	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Chrysene-d12	1719-03-5	76.7	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Naphthalene-d8	1146-65-2	81.5	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Phenanthrene-d10	1517-22-2	84.5	0.1	%	E641A	29-Dec-2022	30-Dec-2022	790279
Polychlorinated Biphenyls								
Aroclor 1016	12674-11-2	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343



Analytical Results

WT2225546-007

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-DUP -

Client sampling date / time: 16-Dec-2022 14:55

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Polychlorinated Biphenyls								
Aroclor 1221	11104-28-2	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1232	11141-16-5	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1242	53469-21-9	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1248	12672-29-6	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1254	11097-69-1	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1260	11096-82-5	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1262	37324-23-5	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Aroclor 1268	11100-14-4	<0.010	0.010	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Polychlorinated biphenyls [PCBs], total	----	<0.030	0.030	mg/kg	E687	22-Dec-2022	23-Dec-2022	786343
Polychlorinated Biphenyls Surrogates								
Decachlorobiphenyl	2051-24-3	97.7	0.1	%	E687	22-Dec-2022	23-Dec-2022	786343
Tetrachloro-m-xylene	877-09-8	86.7	0.1	%	E687	22-Dec-2022	23-Dec-2022	786343

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



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : WT2225546</p> <p>Amendment : 1</p> <p>Client : GHD Limited</p> <p>Contact : Jennifer Balkwill</p> <p>Address : 455 Phillip Street Waterloo ON Canada N2L 3X2</p> <p>Telephone : ----</p> <p>Project : 12579218</p> <p>PO : 735-005186</p> <p>C-O-C number : ----</p> <p>Sampler : CLIENT</p> <p>Site : ----</p> <p>Quote number : 12579218-SSOW-735-005186 City of Toronto Quote Q88890</p> <p>No. of samples received : 7</p> <p>No. of samples analysed : 7</p>	<p>Page : 1 of 17</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Rick Hawthorne</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : +1 519 886 6910</p> <p>Date Samples Received : 19-Dec-2022 15:51</p> <p>Issue Date : 08-Feb-2023 12:46</p>
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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 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		
Cyanides : WAD Cyanide (0.01M NaOH Extraction)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E336A	16-Dec-2022	20-Dec-2022	14 days	4 days	✓	22-Dec-2022	14 days	2 days	✓	
Cyanides : WAD Cyanide (0.01M NaOH Extraction)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E336A	16-Dec-2022	20-Dec-2022	14 days	4 days	✓	22-Dec-2022	14 days	2 days	✓	
Cyanides : WAD Cyanide (0.01M NaOH Extraction)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E336A	16-Dec-2022	20-Dec-2022	14 days	4 days	✓	22-Dec-2022	14 days	2 days	✓	
Cyanides : WAD Cyanide (0.01M NaOH Extraction)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E336A	16-Dec-2022	20-Dec-2022	14 days	4 days	✓	22-Dec-2022	14 days	2 days	✓	
Cyanides : WAD Cyanide (0.01M NaOH Extraction)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E336A	16-Dec-2022	20-Dec-2022	14 days	4 days	✓	22-Dec-2022	14 days	2 days	✓	
Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E484	16-Dec-2022	28-Dec-2022	180 days	12 days	✓	28-Dec-2022	180 days	0 days	✓	
Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E484	16-Dec-2022	28-Dec-2022	180 days	12 days	✓	28-Dec-2022	180 days	0 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group 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		
Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E484	16-Dec-2022	28-Dec-2022	180 days	12 days	✔	28-Dec-2022	180 days	0 days	✔	
Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E484	16-Dec-2022	28-Dec-2022	180 days	12 days	✔	28-Dec-2022	180 days	0 days	✔	
Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E484	16-Dec-2022	28-Dec-2022	180 days	12 days	✔	28-Dec-2022	180 days	0 days	✔	
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID											
Glass soil methanol vial [ON MECP] S-12579218-121622-CM-BH1-22_1-2	E581.F1	16-Dec-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	40 days	0 days	✔	
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID											
Glass soil methanol vial [ON MECP] S-12579218-121622-CM-BH1-22_34-36	E581.F1	16-Dec-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	40 days	0 days	✔	
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID											
Glass soil methanol vial [ON MECP] S-12579218-121622-CM-DUP	E581.F1	16-Dec-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	40 days	0 days	✔	
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID											
Glass soil methanol vial [ON MECP] S-12579218-121622-CM-MW2-22_28-30	E581.F1	16-Dec-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	40 days	0 days	✔	
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID											
Glass soil methanol vial [ON MECP] TRIP BLANK	E581.F1	16-Dec-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	40 days	0 days	✔	
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID											
Glass soil methanol vial [ON MECP] S-12579218-121622-CM-MW2-22_6-8	E581.F1	16-Dec-2022	21-Dec-2022	14 days	6 days	✔	22-Dec-2022	40 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group 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		
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E601.SG-L	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔	
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E601.SG-L	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔	
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E601.SG-L	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔	
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E601.SG-L	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔	
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E601.SG-L	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔	
Metals : Boron-Hot Water Extractable by ICPOES											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E487	16-Dec-2022	28-Dec-2022	180 days	12 days	✔	28-Dec-2022	180 days	0 days	✔	
Metals : Boron-Hot Water Extractable by ICPOES											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E487	16-Dec-2022	28-Dec-2022	180 days	12 days	✔	28-Dec-2022	180 days	0 days	✔	
Metals : Boron-Hot Water Extractable by ICPOES											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E487	16-Dec-2022	28-Dec-2022	180 days	12 days	✔	28-Dec-2022	180 days	0 days	✔	
Metals : Boron-Hot Water Extractable by ICPOES											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E487	16-Dec-2022	28-Dec-2022	180 days	12 days	✔	28-Dec-2022	180 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group 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		
Metals : Boron-Hot Water Extractable by ICPOES											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E487	16-Dec-2022	28-Dec-2022	180 days	12 days	✔	28-Dec-2022	180 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E510	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E510	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E510	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E510	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	28 days	13 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E510	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	28 days	13 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E440	16-Dec-2022	28-Dec-2022	----	----		28-Dec-2022	180 days	12 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E440	16-Dec-2022	28-Dec-2022	----	----		28-Dec-2022	180 days	12 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E440	16-Dec-2022	28-Dec-2022	----	----		28-Dec-2022	180 days	12 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group 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		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E440	16-Dec-2022	28-Dec-2022	----	----		28-Dec-2022	180 days	12 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E440	16-Dec-2022	28-Dec-2022	----	----		28-Dec-2022	180 days	12 days	✔	
Particle Size : CCME fine/coarse Particle Size Analysis by wet sieve											
Paper Bag (Brown) S-12579218-121622-CM-MW2-22_28-30	E178	16-Dec-2022	----	----	----		21-Dec-2022	180 days	5 days	✔	
Particle Size : CCME fine/coarse Particle Size Analysis by wet sieve											
Paper Bag (Brown) S-12579218-121622-CM-MW2-22_4-6	E178	16-Dec-2022	----	----	----		21-Dec-2022	180 days	5 days	✔	
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E100-L	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	30 days	13 days	✔	
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E100-L	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	30 days	13 days	✔	
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E100-L	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	30 days	13 days	✔	
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E100-L	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	30 days	13 days	✔	
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E100-L	16-Dec-2022	28-Dec-2022	----	----		29-Dec-2022	30 days	13 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E144	16-Dec-2022	----	----	----		20-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E144	16-Dec-2022	----	----	----		20-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E144	16-Dec-2022	----	----	----		20-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E144	16-Dec-2022	----	----	----		20-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E144	16-Dec-2022	----	----	----		20-Dec-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil methanol vial [ON MECP] TRIP BLANK	E144	16-Dec-2022	----	----	----		21-Dec-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E108A	16-Dec-2022	20-Dec-2022	----	----		23-Dec-2022	30 days	7 days	✔
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E108A	16-Dec-2022	20-Dec-2022	----	----		23-Dec-2022	30 days	7 days	✔
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E108A	16-Dec-2022	20-Dec-2022	----	----		23-Dec-2022	30 days	7 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E108A	16-Dec-2022	20-Dec-2022	----	----		23-Dec-2022	30 days	7 days	✔
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E108A	16-Dec-2022	20-Dec-2022	----	----		23-Dec-2022	30 days	7 days	✔
Polychlorinated Biphenyls : PCB Aroclors by GC-MS										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E687	16-Dec-2022	22-Dec-2022	----	----		23-Dec-2022	40 days	1 days	✔
Polychlorinated Biphenyls : PCB Aroclors by GC-MS										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E687	16-Dec-2022	22-Dec-2022	----	----		23-Dec-2022	40 days	1 days	✔
Polychlorinated Biphenyls : PCB Aroclors by GC-MS										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E687	16-Dec-2022	22-Dec-2022	----	----		23-Dec-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E641A	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E641A	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E641A	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E641A	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group 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		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex: Ace GC-MS											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E641A	16-Dec-2022	29-Dec-2022	14 days	13 days	✔	30-Dec-2022	40 days	1 days	✔	
Speciated Metals : Hexavalent Chromium (Cr VI) by IC											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_1-2	E532	16-Dec-2022	20-Dec-2022	30 days	4 days	✔	22-Dec-2022	7 days	2 days	✔	
Speciated Metals : Hexavalent Chromium (Cr VI) by IC											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-BH1-22_34-36	E532	16-Dec-2022	20-Dec-2022	30 days	4 days	✔	22-Dec-2022	7 days	2 days	✔	
Speciated Metals : Hexavalent Chromium (Cr VI) by IC											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-DUP	E532	16-Dec-2022	20-Dec-2022	30 days	4 days	✔	22-Dec-2022	7 days	2 days	✔	
Speciated Metals : Hexavalent Chromium (Cr VI) by IC											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_28-30	E532	16-Dec-2022	20-Dec-2022	30 days	4 days	✔	22-Dec-2022	7 days	2 days	✔	
Speciated Metals : Hexavalent Chromium (Cr VI) by IC											
Glass soil jar/Teflon lined cap S-12579218-121622-CM-MW2-22_6-8	E532	16-Dec-2022	20-Dec-2022	30 days	4 days	✔	22-Dec-2022	7 days	2 days	✔	
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS											
Glass soil methanol vial [ON MECP] S-12579218-121622-CM-BH1-22_1-2	E611D	16-Dec-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	40 days	0 days	✔	
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS											
Glass soil methanol vial [ON MECP] S-12579218-121622-CM-BH1-22_34-36	E611D	16-Dec-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	40 days	0 days	✔	
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS											
Glass soil methanol vial [ON MECP] S-12579218-121622-CM-DUP	E611D	16-Dec-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	40 days	0 days	✔	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group 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 soil methanol vial [ON MECP] S-12579218-121622-CM-MW2-22_28-30	E611D	16-Dec-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	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-2022	21-Dec-2022	14 days	5 days	✔	22-Dec-2022	40 days	0 days	✔
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] S-12579218-121622-CM-MW2-22_6-8	E611D	16-Dec-2022	21-Dec-2022	14 days	6 days	✔	22-Dec-2022	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	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Boron-Hot Water Extractable by ICPOES	E487	784921	1	20	5.0	5.0	✓
CCME fine/coarse Particle Size Analysis by wet sieve	E178	786020	1	6	16.6	5.0	✓
CCME PHC - F1 by Headspace GC-FID	E581.F1	786352	1	11	9.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	790280	1	8	12.5	5.0	✓
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L	784920	1	20	5.0	5.0	✓
Hexavalent Chromium (Cr VI) by IC	E532	784514	1	18	5.5	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	784917	1	20	5.0	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	784918	1	20	5.0	5.0	✓
Moisture Content by Gravimetry	E144	784516	2	38	5.2	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	790279	1	5	20.0	5.0	✓
PCB Aroclors by GC-MS	E687	786343	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	784512	1	18	5.5	5.0	✓
Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)	E484	784919	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	786351	1	20	5.0	5.0	✓
WAD Cyanide (0.01M NaOH Extraction)	E336A	784513	1	18	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Boron-Hot Water Extractable by ICPOES	E487	784921	2	20	10.0	10.0	✓
CCME fine/coarse Particle Size Analysis by wet sieve	E178	786020	1	6	16.6	5.0	✓
CCME PHC - F1 by Headspace GC-FID	E581.F1	786352	1	11	9.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	790280	1	8	12.5	5.0	✓
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L	784920	2	20	10.0	10.0	✓
Hexavalent Chromium (Cr VI) by IC	E532	784514	2	18	11.1	10.0	✓
Mercury in Soil/Solid by CVAAS	E510	784917	2	20	10.0	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	784918	2	20	10.0	10.0	✓
Moisture Content by Gravimetry	E144	784516	2	38	5.2	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	790279	1	5	20.0	5.0	✓
PCB Aroclors by GC-MS	E687	786343	1	12	8.3	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	784512	1	18	5.5	5.0	✓
Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)	E484	784919	2	20	10.0	10.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	786351	1	20	5.0	5.0	✓
WAD Cyanide (0.01M NaOH Extraction)	E336A	784513	1	18	5.5	5.0	✓
Method Blanks (MB)							
Boron-Hot Water Extractable by ICPOES	E487	784921	1	20	5.0	5.0	✓
CCME PHC - F1 by Headspace GC-FID	E581.F1	786352	1	11	9.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	790280	1	8	12.5	5.0	✓



Matrix: **Soil/Solid**

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Method Blanks (MB) - Continued							
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L	784920	1	20	5.0	5.0	✓
Hexavalent Chromium (Cr VI) by IC	E532	784514	1	18	5.5	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	784917	1	20	5.0	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	784918	1	20	5.0	5.0	✓
Moisture Content by Gravimetry	E144	784516	2	38	5.2	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	790279	1	5	20.0	5.0	✓
PCB Aroclors by GC-MS	E687	786343	1	12	8.3	5.0	✓
Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)	E484	784919	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	786351	1	20	5.0	5.0	✓
WAD Cyanide (0.01M NaOH Extraction)	E336A	784513	1	18	5.5	5.0	✓
Matrix Spikes (MS)							
CCME PHC - F1 by Headspace GC-FID	E581.F1	786352	1	11	9.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	790280	1	8	12.5	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	790279	1	5	20.0	5.0	✓
PCB Aroclors by GC-MS	E687	786343	1	12	8.3	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	786351	1	20	5.0	5.0	✓
WAD Cyanide (0.01M NaOH Extraction)	E336A	784513	1	18	5.5	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L Waterloo - Environmental	Soil/Solid	CSSS Ch. 15 (mod)/APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a soil sample that has been added in a defined ratio of soil to deionized water, then shaken well and allowed to settle. Conductance is measured in the fluid that is observed in the upper layer.
pH by Meter (1:2 Soil:0.01M CaCl ₂ Extraction) - As Received	E108A Waterloo - Environmental	Soil/Solid	MOEE E3137A	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.
Moisture Content by Gravimetry	E144 Waterloo - Environmental	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.
CCME fine/coarse Particle Size Analysis by wet sieve	E178 Saskatoon - Environmental	Soil/Solid	CCME Vol 4 Analytical Methods	An air-dried sample is reduced to < 2 mm size and mixed with a dispersing agent (sodium hexametaphosphate). The sample is washed through a 200 mesh (0.075 mm) sieve. The retained mass of sample is used to determine % sand fraction. If the percentage of sand is >50%, the soil is considered to be coarse textured soil. If the percentage of sand is <50%, the soil is considered to be fine textured.
WAD Cyanide (0.01M NaOH Extraction)	E336A Waterloo - Environmental	Soil/Solid	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined after extraction by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Metals in Soil/Solid by CRC ICPMS	E440 Waterloo - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ 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.
Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)	E484 Waterloo - Environmental	Soil/Solid	SW846 6010C	A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Boron-Hot Water Extractable by ICPOES	E487 Waterloo - Environmental	Soil/Solid	HW EXTR, EPA 6010B	A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES. Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).
Mercury in Soil/Solid by CVAAS	E510 Waterloo - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl, followed by CVAAS analysis.
Hexavalent Chromium (Cr VI) by IC	E532 Waterloo - Environmental	Soil/Solid	APHA 3500-CR C	Instrumental analysis is performed by ion chromatography with UV detection.
CCME PHC - F1 by Headspace GC-FID	E581.F1 Waterloo - Environmental	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.
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L Waterloo - Environmental	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).
VOCs (Eastern Canada List) by Headspace GC-MS	E611D Waterloo - Environmental	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 by Hex:Ace GC-MS	E641A Waterloo - Environmental	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.
PCB Aroclors by GC-MS	E687 Waterloo - Environmental	Soil/Solid	EPA 8270E (mod)	PCB Aroclors are analyzed by GC-MS
F1-BTEX	EC580 Waterloo - Environmental	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 Waterloo - Environmental	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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
F2 to F3 minus PAH	EC600 Waterloo - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	F2-PAH = CCME Fraction 2 (C10-C16) minus Naphthalene F3-PAH = CCME Fraction 3 (C16-C34) minus select Polycyclic Aromatic Hydrocarbons (PAH) as per CCME Soil Tier 1

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Waterloo - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Leach 1:2 Soil : 0.01CaCl2 - As Received for pH	EP108A Waterloo - Environmental	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.
Cyanide Extraction for CFA (0.01M NaOH)	EP333A Waterloo - Environmental	Soil/Solid	ON MECP E3015 (mod)	Extraction for various cyanide analysis is by rotary extraction of the soil with 0.01M Sodium Hydroxide.
Digestion for Metals and Mercury	EP440 Waterloo - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO3 and HCl. This method is intended to liberate metals that may be environmentally available.
Boron-Hot Water Extractable	EP487 Waterloo - Environmental	Soil/Solid	HW EXTR, EPA 6010B	A dried solid sample is extracted with weak calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES. Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011)
Preparation of Hexavalent Chromium (Cr VI) for IC	EP532 Waterloo - Environmental	Soil/Solid	EPA 3060A	Field moist samples are digested with a sodium hydroxide/sodium carbonate solution as described in EPA 3060A.
VOCs Methanol Extraction for Headspace Analysis	EP581 Waterloo - Environmental	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 Waterloo - Environmental	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.
Pesticides, PCB, PAH, and Neutral Extractable Chlorinated Hydrocarbons Extraction	EP660 Waterloo - Environmental	Soil/Solid	EPA 3570 (mod)	A homogenized subsample is extracted with organic solvents using a mechanical shaker.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dry and Grind in Soil/Solid <60°C	EPP442 Waterloo - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.

QUALITY CONTROL REPORT

Work Order : **WT2225546**

Page : 1 of 19

Amendment : **1**

Client : GHD Limited
Contact : Jennifer Balkwill
Address : 455 Phillip Street
 Waterloo ON Canada N2L 3X2

Laboratory : Waterloo - Environmental
Account Manager : Rick Hawthorne
Address : 60 Northland Road, Unit 1
 Waterloo, Ontario Canada N2V 2B8

Telephone :
Project : 12579218
PO : 735-005186
C-O-C number : ----
Sampler : CLIENT ----

Telephone : +1 519 886 6910
Date Samples Received : 19-Dec-2022 15:51
Date Analysis Commenced : 20-Dec-2022
Issue Date : 08-Feb-2023 12:45

Site : ----
Quote number : 12579218-SSOW-735-005186 City of Toronto Quote Q88890
No. of samples received : 7
No. of samples analysed : 7

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- 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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Amanda Ganouri-Lumsden	Department Manager - Microbiology and Prep	Waterloo Centralized Prep, Waterloo, Ontario
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Waterloo Organics, Waterloo, Ontario
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Sarah Birch	VOC Section Supervisor	Waterloo Organics, Waterloo, Ontario
Xihua Yao	Laboratory Analyst	Saskatoon Inorganics, Saskatoon, Saskatchewan



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: 784512)											
WT2225398-002	Anonymous	pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units	7.68	7.62	0.784%	5%	----
Physical Tests (QC Lot: 784516)											
WT2225398-002	Anonymous	Moisture	----	E144	0.25	%	19.2	19.1	0.420%	20%	----
Physical Tests (QC Lot: 784920)											
WT2225398-002	Anonymous	Conductivity (1:2 leachate)	----	E100-L	5.00	µS/cm	1.25 mS/cm	1280	2.53%	20%	----
Physical Tests (QC Lot: 785112)											
WT2225440-002	Anonymous	Moisture	----	E144	0.25	%	12.7	12.8	1.13%	20%	----
Particle Size (QC Lot: 786020)											
TY2205007-004	Anonymous	Sand (>0.075mm)	----	E178	1.0	%	69.9	70.3	0.534%	20%	----
Cyanides (QC Lot: 784513)											
WT2225398-002	Anonymous	Cyanide, weak acid dissociable	----	E336A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
Metals (QC Lot: 784917)											
WT2225398-001	Anonymous	Mercury	7439-97-6	E510	0.0050	mg/kg	0.0191	0.0181	0.0011	Diff <2x LOR	----
Metals (QC Lot: 784918)											
WT2225398-001	Anonymous	Antimony	7440-36-0	E440	0.10	mg/kg	0.12	0.12	0.007	Diff <2x LOR	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	6.08	5.95	2.14%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	63.2	57.5	9.48%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.58	0.56	0.01	Diff <2x LOR	----
		Boron	7440-42-8	E440	5.0	mg/kg	7.0	6.4	0.6	Diff <2x LOR	----
		Cadmium	7440-43-9	E440	0.020	mg/kg	0.085	0.091	0.006	Diff <2x LOR	----
		Chromium	7440-47-3	E440	0.50	mg/kg	22.1	21.4	3.29%	30%	----
		Cobalt	7440-48-4	E440	0.10	mg/kg	9.64	9.48	1.68%	30%	----
		Copper	7440-50-8	E440	0.50	mg/kg	21.4	21.2	0.920%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	10.8	10.2	5.67%	40%	----
		Molybdenum	7439-98-7	E440	0.10	mg/kg	0.39	0.41	0.01	Diff <2x LOR	----
		Nickel	7440-02-0	E440	0.50	mg/kg	20.9	20.7	1.14%	30%	----
		Selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		Silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		Thallium	7440-28-0	E440	0.050	mg/kg	0.137	0.127	0.010	Diff <2x LOR	----
		Uranium	7440-61-1	E440	0.050	mg/kg	0.541	0.502	7.55%	30%	----



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
Metals (QC Lot: 784918) - continued											
WT2225398-001	Anonymous	Vanadium	7440-62-2	E440	0.20	mg/kg	34.8	33.4	4.01%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	46.2	44.5	3.86%	30%	----
Metals (QC Lot: 784919)											
WT2225398-002	Anonymous	Calcium, soluble ion content	7440-70-2	E484	0.50	mg/L	1.74	1.81	0.07	Diff <2x LOR	----
		Magnesium, soluble ion content	7439-95-4	E484	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Sodium, soluble ion content	17341-25-2	E484	0.50	mg/L	245	251	2.42%	30%	----
Metals (QC Lot: 784921)											
WT2225398-001	Anonymous	Boron, hot water soluble	7440-42-8	E487	0.10	mg/kg	0.19	0.20	0.004	Diff <2x LOR	----
Speciated Metals (QC Lot: 784514)											
WT2225398-002	Anonymous	Chromium, hexavalent [Cr VI]	18540-29-9	E532	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 786351)											
WT2225768-001	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	----



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: 786351) - continued											
WT2225768-001	Anonymous	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	----		
Xylene, o-	95-47-6	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----		
Hydrocarbons (QC Lot: 786352)											
WT2225768-001	Anonymous	F1 (C6-C10)	----	E581.F1	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 790280)											
WT2225546-002	S-12579218-121622-CM-M W2-22_6-8	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: 790279)											
WT2225546-002	S-12579218-121622-CM-M W2-22_6-8	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	<0.050	<0.050	0	Diff <2x LOR	----
		Anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Chrysene	218-01-9	E641A	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
Polycyclic Aromatic Hydrocarbons (QC Lot: 790279) - continued											
WT2225546-002	S-12579218-121622-CM-M W2-22_6-8	Dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		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	<0.010	<0.010	0	Diff <2x LOR	----
		Phenanthrene	85-01-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
Polychlorinated Biphenyls (QC Lot: 786343)											
WT2225501-001	Anonymous	Aroclor 1016	12674-11-2	E687	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1221	11104-28-2	E687	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1232	11141-16-5	E687	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1242	53469-21-9	E687	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1248	12672-29-6	E687	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1254	11097-69-1	E687	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1260	11096-82-5	E687	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1262	37324-23-5	E687	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1268	11100-14-4	E687	0.010	mg/kg	<0.010	<0.010	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: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 784516)						
Moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 784920)						
Conductivity (1:2 leachate)	---	E100-L	5	µS/cm	<5.00	---
Physical Tests (QCLot: 785112)						
Moisture	---	E144	0.25	%	<0.25	---
Cyanides (QCLot: 784513)						
Cyanide, weak acid dissociable	---	E336A	0.05	mg/kg	<0.050	---
Metals (QCLot: 784917)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 784918)						
Antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
Arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
Barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
Beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
Boron	7440-42-8	E440	5	mg/kg	<5.0	---
Cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
Chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
Cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
Copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
Lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
Molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
Nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
Selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
Silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
Thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
Uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
Vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
Zinc	7440-66-6	E440	2	mg/kg	<2.0	---
Metals (QCLot: 784919)						
Calcium, soluble ion content	7440-70-2	E484	0.5	mg/L	<0.50	---
Magnesium, soluble ion content	7439-95-4	E484	0.5	mg/L	<0.50	---
Sodium, soluble ion content	17341-25-2	E484	0.5	mg/L	<0.50	---



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 784921)						
Boron, hot water soluble	7440-42-8	E487	0.1	mg/kg	<0.10	---
Speciated Metals (QCLot: 784514)						
Chromium, hexavalent [Cr VI]	18540-29-9	E532	0.1	mg/kg	<0.10	---
Volatile Organic Compounds (QCLot: 786351)						
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	---
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	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 786351) - continued						
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	----
Hydrocarbons (QCLot: 786352)						
F1 (C6-C10)	----	E581.F1	5	mg/kg	<5.0	----
Hydrocarbons (QCLot: 790280)						
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: 790279)						
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	----
Polychlorinated Biphenyls (QCLot: 786343)						



Sub-Matrix: **Soil/Solid**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Polychlorinated Biphenyls (QCLot: 786343) - continued						
Aroclor 1016	12674-11-2	E687	0.01	mg/kg	<0.010	----
Aroclor 1221	11104-28-2	E687	0.01	mg/kg	<0.010	----
Aroclor 1232	11141-16-5	E687	0.01	mg/kg	<0.010	----
Aroclor 1242	53469-21-9	E687	0.01	mg/kg	<0.010	----
Aroclor 1248	12672-29-6	E687	0.01	mg/kg	<0.010	----
Aroclor 1254	11097-69-1	E687	0.01	mg/kg	<0.010	----
Aroclor 1260	11096-82-5	E687	0.01	mg/kg	<0.010	----
Aroclor 1262	37324-23-5	E687	0.01	mg/kg	<0.010	----
Aroclor 1268	11100-14-4	E687	0.01	mg/kg	<0.010	----



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	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 784512)									
pH (1:2 soil:CaCl2-aq)	----	E108A	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 784516)									
Moisture	----	E144	0.25	%	50 %	99.5	90.0	110	----
Physical Tests (QCLot: 784920)									
Conductivity (1:2 leachate)	----	E100-L	5	µS/cm	1409 µS/cm	100	90.0	110	----
Physical Tests (QCLot: 785112)									
Moisture	----	E144	0.25	%	50 %	98.5	90.0	110	----
Cyanides (QCLot: 784513)									
Cyanide, weak acid dissociable	----	E336A	0.05	mg/kg	2.5 mg/kg	91.8	80.0	125	----
Metals (QCLot: 784917)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	100	80.0	120	----
Metals (QCLot: 784918)									
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	102	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	95.2	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	95.1	80.0	120	----
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	97.4	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	101	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	98.3	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	100	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	100.0	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	100	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	97.5	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	88.8	80.0	120	----
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	96.7	80.0	120	----
Uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	102	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	104	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	93.6	80.0	120	----
Metals (QCLot: 784919)									



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 784919) - continued									
Calcium, soluble ion content	7440-70-2	E484	0.5	mg/L	300 mg/L	107	80.0	120	----
Magnesium, soluble ion content	7439-95-4	E484	0.5	mg/L	50 mg/L	101	80.0	120	----
Sodium, soluble ion content	17341-25-2	E484	0.5	mg/L	50 mg/L	102	80.0	120	----
Metals (QCLot: 784921)									
Boron, hot water soluble	7440-42-8	E487	0.1	mg/kg	1.33333 mg/kg	104	70.0	130	----
Speciated Metals (QCLot: 784514)									
Chromium, hexavalent [Cr VI]	18540-29-9	E532	0.1	mg/kg	0.8 mg/kg	98.2	80.0	120	----
Volatile Organic Compounds (QCLot: 786351)									
Acetone	67-64-1	E611D	0.5	mg/kg	3.475 mg/kg	106	60.0	140	----
Benzene	71-43-2	E611D	0.005	mg/kg	3.475 mg/kg	107	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.05	mg/kg	3.475 mg/kg	96.7	50.0	140	----
Bromoform	75-25-2	E611D	0.05	mg/kg	3.475 mg/kg	108	70.0	130	----
Bromomethane	74-83-9	E611D	0.05	mg/kg	3.475 mg/kg	87.8	50.0	140	----
Carbon tetrachloride	56-23-5	E611D	0.05	mg/kg	3.475 mg/kg	84.3	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.05	mg/kg	3.475 mg/kg	116	70.0	130	----
Chloroform	67-66-3	E611D	0.05	mg/kg	3.475 mg/kg	98.2	70.0	130	----
Dibromochloromethane	124-48-1	E611D	0.05	mg/kg	3.475 mg/kg	101	60.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.05	mg/kg	3.475 mg/kg	107	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.05	mg/kg	3.475 mg/kg	110	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.05	mg/kg	3.475 mg/kg	110	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.05	mg/kg	3.475 mg/kg	111	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.05	mg/kg	3.475 mg/kg	53.8	50.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.05	mg/kg	3.475 mg/kg	114	60.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.05	mg/kg	3.475 mg/kg	87.6	60.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.05	mg/kg	3.475 mg/kg	94.6	60.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.05	mg/kg	3.475 mg/kg	100	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.05	mg/kg	3.475 mg/kg	97.8	60.0	130	----
Dichloromethane	75-09-2	E611D	0.045	mg/kg	3.475 mg/kg	102	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.05	mg/kg	3.475 mg/kg	101	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.03	mg/kg	3.475 mg/kg	107	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.03	mg/kg	3.475 mg/kg	112	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.015	mg/kg	3.475 mg/kg	108	70.0	130	----
Hexane, n-	110-54-3	E611D	0.05	mg/kg	3.475 mg/kg	98.7	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	0.5	mg/kg	3.475 mg/kg	123	60.0	140	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 786351) - continued									
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.5	mg/kg	3.475 mg/kg	115	60.0	140	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.04	mg/kg	3.475 mg/kg	115	70.0	130	----
Styrene	100-42-5	E611D	0.05	mg/kg	3.475 mg/kg	112	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.05	mg/kg	3.475 mg/kg	101	60.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.05	mg/kg	3.475 mg/kg	109	60.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.05	mg/kg	3.475 mg/kg	110	60.0	130	----
Toluene	108-88-3	E611D	0.05	mg/kg	3.475 mg/kg	111	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.05	mg/kg	3.475 mg/kg	95.7	60.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.05	mg/kg	3.475 mg/kg	119	60.0	130	----
Trichloroethylene	79-01-6	E611D	0.01	mg/kg	3.475 mg/kg	100	60.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.05	mg/kg	3.475 mg/kg	92.9	50.0	140	----
Vinyl chloride	75-01-4	E611D	0.02	mg/kg	3.475 mg/kg	72.6	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.03	mg/kg	6.95 mg/kg	108	70.0	130	----
Xylene, o-	95-47-6	E611D	0.03	mg/kg	3.475 mg/kg	107	70.0	130	----
Hydrocarbons (QCLot: 786352)									
F1 (C6-C10)	----	E581.F1	5	mg/kg	69.1875 mg/kg	110	80.0	120	----
Hydrocarbons (QCLot: 790280)									
F2 (C10-C16)	----	E601.SG-L	10	mg/kg	883.825 mg/kg	88.3	70.0	130	----
F3 (C16-C34)	----	E601.SG-L	50	mg/kg	1385.22 mg/kg	82.6	70.0	130	----
F4 (C34-C50)	----	E601.SG-L	50	mg/kg	797.55 mg/kg	93.1	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 790279)									
Acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	86.6	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	93.7	60.0	130	----
Anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	89.6	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	81.9	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	95.5	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	87.6	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	86.6	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	88.3	60.0	130	----
Chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	86.3	60.0	130	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	87.9	60.0	130	----
Fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	89.3	60.0	130	----
Fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	88.9	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	82.2	60.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 790279) - continued									
Methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	83.7	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	80.6	60.0	130	----
Naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	81.8	60.0	130	----
Phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	81.1	60.0	130	----
Pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	85.6	60.0	130	----
Polychlorinated Biphenyls (QCLot: 786343)									
Aroclor 1016	12674-11-2	E687	0.01	mg/kg	0.01 mg/kg	86.4	60.0	140	----
Aroclor 1221	11104-28-2	E687	0.01	mg/kg	0.01 mg/kg	86.4	60.0	140	----
Aroclor 1232	11141-16-5	E687	0.01	mg/kg	0.01 mg/kg	86.4	60.0	140	----
Aroclor 1242	53469-21-9	E687	0.01	mg/kg	0.01 mg/kg	86.4	60.0	140	----
Aroclor 1248	12672-29-6	E687	0.01	mg/kg	0.01 mg/kg	74.5	60.0	140	----
Aroclor 1254	11097-69-1	E687	0.01	mg/kg	0.01 mg/kg	79.8	60.0	140	----
Aroclor 1260	11096-82-5	E687	0.01	mg/kg	0.01 mg/kg	86.5	60.0	140	----
Aroclor 1262	37324-23-5	E687	0.01	mg/kg	0.01 mg/kg	86.5	60.0	140	----
Aroclor 1268	11100-14-4	E687	0.01	mg/kg	0.01 mg/kg	86.5	60.0	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: 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
Cyanides (QCLot: 784513)										
WT2225398-002	Anonymous	Cyanide, weak acid dissociable	----	E336A	1.23 mg/kg	2.5 mg/kg	100	70.0	130	----
Volatile Organic Compounds (QCLot: 786351)										
WT2225768-001	Anonymous	Acetone	67-64-1	E611D	2.00 mg/kg	3.125 mg/kg	89.4	50.0	140	----
		Benzene	71-43-2	E611D	2.21 mg/kg	3.125 mg/kg	98.8	50.0	140	----
		Bromodichloromethane	75-27-4	E611D	1.80 mg/kg	3.125 mg/kg	80.6	50.0	140	----
		Bromoform	75-25-2	E611D	1.88 mg/kg	3.125 mg/kg	84.2	50.0	140	----
		Bromomethane	74-83-9	E611D	2.45 mg/kg	3.125 mg/kg	110	50.0	140	----
		Carbon tetrachloride	56-23-5	E611D	1.52 mg/kg	3.125 mg/kg	68.2	50.0	140	----
		Chlorobenzene	108-90-7	E611D	2.20 mg/kg	3.125 mg/kg	98.6	50.0	140	----
		Chloroform	67-66-3	E611D	1.93 mg/kg	3.125 mg/kg	86.4	50.0	140	----
		Dibromochloromethane	124-48-1	E611D	1.76 mg/kg	3.125 mg/kg	78.9	50.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	2.03 mg/kg	3.125 mg/kg	90.8	50.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	2.06 mg/kg	3.125 mg/kg	92.2	50.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	1.97 mg/kg	3.125 mg/kg	88.2	50.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	1.98 mg/kg	3.125 mg/kg	88.7	50.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	2.02 mg/kg	3.125 mg/kg	90.2	50.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	2.19 mg/kg	3.125 mg/kg	98.2	50.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	1.67 mg/kg	3.125 mg/kg	74.8	50.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	1.83 mg/kg	3.125 mg/kg	81.9	50.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	1.97 mg/kg	3.125 mg/kg	88.2	50.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	1.93 mg/kg	3.125 mg/kg	86.5	50.0	140	----
		Dichloromethane	75-09-2	E611D	2.06 mg/kg	3.125 mg/kg	92.3	50.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	2.10 mg/kg	3.125 mg/kg	94.0	50.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	1.91 mg/kg	3.125 mg/kg	85.6	50.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	1.91 mg/kg	3.125 mg/kg	85.5	50.0	140	----
		Ethylbenzene	100-41-4	E611D	2.07 mg/kg	3.125 mg/kg	92.5	50.0	140	----
		Hexane, n-	110-54-3	E611D	2.31 mg/kg	3.125 mg/kg	104	50.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	2.39 mg/kg	3.125 mg/kg	107	50.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	2.11 mg/kg	3.125 mg/kg	94.5	50.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	2.23 mg/kg	3.125 mg/kg	99.8	50.0	140	----
		Styrene	100-42-5	E611D	2.10 mg/kg	3.125 mg/kg	93.9	50.0	140	----



Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Volatile Organic Compounds (QCLot: 786351) - continued										
WT2225768-001	Anonymous	Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	1.80 mg/kg	3.125 mg/kg	80.6	50.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	2.18 mg/kg	3.125 mg/kg	97.4	50.0	140	----
		Tetrachloroethylene	127-18-4	E611D	1.98 mg/kg	3.125 mg/kg	88.7	50.0	140	----
		Toluene	108-88-3	E611D	2.18 mg/kg	3.125 mg/kg	97.5	50.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	1.86 mg/kg	3.125 mg/kg	83.4	50.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	2.32 mg/kg	3.125 mg/kg	104	50.0	140	----
		Trichloroethylene	79-01-6	E611D	1.80 mg/kg	3.125 mg/kg	80.4	50.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	1.82 mg/kg	3.125 mg/kg	81.6	50.0	140	----
		Vinyl chloride	75-01-4	E611D	2.33 mg/kg	3.125 mg/kg	104	50.0	140	----
		Xylene, m+p-	179601-23-1	E611D	4.10 mg/kg	6.25 mg/kg	91.8	50.0	140	----
		Xylene, o-	95-47-6	E611D	2.04 mg/kg	3.125 mg/kg	91.5	50.0	140	----
Hydrocarbons (QCLot: 786352)										
WT2225768-001	Anonymous	F1 (C6-C10)	----	E581.F1	42.8 mg/kg	62.5 mg/kg	95.7	60.0	140	----
Hydrocarbons (QCLot: 790280)										
WT2225546-002	S-12579218-121622-CM-M W2-22_6-8	F2 (C10-C16)	----	E601.SG-L	604 mg/kg	883.825 mg/kg	86.1	60.0	140	----
		F3 (C16-C34)	----	E601.SG-L	922 mg/kg	1385.22 mg/kg	83.9	60.0	140	----
		F4 (C34-C50)	----	E601.SG-L	606 mg/kg	797.55 mg/kg	95.8	60.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 790279)										
WT2225546-002	S-12579218-121622-CM-M W2-22_6-8	Acenaphthene	83-32-9	E641A	0.326 mg/kg	0.5 mg/kg	81.9	50.0	140	----
		Acenaphthylene	208-96-8	E641A	0.351 mg/kg	0.5 mg/kg	88.4	50.0	140	----
		Anthracene	120-12-7	E641A	0.347 mg/kg	0.5 mg/kg	87.2	50.0	140	----
		Benz(a)anthracene	56-55-3	E641A	0.320 mg/kg	0.5 mg/kg	80.4	50.0	140	----
		Benzo(a)pyrene	50-32-8	E641A	0.363 mg/kg	0.5 mg/kg	91.3	50.0	140	----
		Benzo(b+j)fluoranthene	n/a	E641A	0.339 mg/kg	0.5 mg/kg	85.3	50.0	140	----
		Benzo(g,h,i)perylene	191-24-2	E641A	0.314 mg/kg	0.5 mg/kg	79.1	50.0	140	----
		Benzo(k)fluoranthene	207-08-9	E641A	0.338 mg/kg	0.5 mg/kg	85.0	50.0	140	----
		Chrysene	218-01-9	E641A	0.320 mg/kg	0.5 mg/kg	80.4	50.0	140	----
		Dibenz(a,h)anthracene	53-70-3	E641A	0.327 mg/kg	0.5 mg/kg	82.3	50.0	140	----
		Fluoranthene	206-44-0	E641A	0.327 mg/kg	0.5 mg/kg	82.4	50.0	140	----
		Fluorene	86-73-7	E641A	0.333 mg/kg	0.5 mg/kg	83.9	50.0	140	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.314 mg/kg	0.5 mg/kg	78.9	50.0	140	----
		Methylnaphthalene, 1-	90-12-0	E641A	0.317 mg/kg	0.5 mg/kg	79.8	50.0	140	----
		Methylnaphthalene, 2-	91-57-6	E641A	0.310 mg/kg	0.5 mg/kg	77.9	50.0	140	----
		Naphthalene	91-20-3	E641A	0.316 mg/kg	0.5 mg/kg	79.5	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
Polycyclic Aromatic Hydrocarbons (QCLot: 790279) - continued										
WT2225546-002	S-12579218-121622-CM-M W2-22_6-8	Phenanthrene	85-01-8	E641A	0.309 mg/kg	0.5 mg/kg	77.6	50.0	140	----
		Pyrene	129-00-0	E641A	0.317 mg/kg	0.5 mg/kg	79.8	50.0	140	----
Polychlorinated Biphenyls (QCLot: 786343)										
WT2225501-001	Anonymous	Aroclor 1016	12674-11-2	E687	0.012 mg/kg	0.01 mg/kg	122	50.0	150	----
		Aroclor 1221	11104-28-2	E687	0.012 mg/kg	0.01 mg/kg	122	50.0	150	----
		Aroclor 1232	11141-16-5	E687	0.012 mg/kg	0.01 mg/kg	122	50.0	150	----
		Aroclor 1242	53469-21-9	E687	0.012 mg/kg	0.01 mg/kg	119	50.0	150	----
		Aroclor 1248	12672-29-6	E687	0.012 mg/kg	0.01 mg/kg	122	50.0	150	----
		Aroclor 1254	11097-69-1	E687	0.008 mg/kg	0.01 mg/kg	77.4	50.0	150	----
		Aroclor 1260	11096-82-5	E687	0.009 mg/kg	0.01 mg/kg	93.8	50.0	150	----
		Aroclor 1262	37324-23-5	E687	0.010 mg/kg	0.01 mg/kg	98.0	50.0	150	----
		Aroclor 1268	11100-14-4	E687	0.010 mg/kg	0.01 mg/kg	98.0	50.0	150	----



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:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
						Low	High		
Physical Tests (QCLot: 784920)									
	RM	Conductivity (1:2 leachate)	----	E100-L	1031.5 µS/cm	107	70.0	130	----
Particle Size (QCLot: 786020)									
	RM	Sand (>0.075mm)	----	E178	42.85 %	101	88.0	112	----
Metals (QCLot: 784917)									
	RM	Mercury	7439-97-6	E510	0.0585 mg/kg	97.3	70.0	130	----
Metals (QCLot: 784918)									
	RM	Antimony	7440-36-0	E440	3.99 mg/kg	97.0	70.0	130	----
	RM	Arsenic	7440-38-2	E440	3.73 mg/kg	102	70.0	130	----
	RM	Barium	7440-39-3	E440	105 mg/kg	109	70.0	130	----
	RM	Beryllium	7440-41-7	E440	0.349 mg/kg	105	70.0	130	----
	RM	Boron	7440-42-8	E440	8.5 mg/kg	104	40.0	160	----
	RM	Cadmium	7440-43-9	E440	0.91 mg/kg	106	70.0	130	----
	RM	Chromium	7440-47-3	E440	101 mg/kg	102	70.0	130	----
	RM	Cobalt	7440-48-4	E440	6.9 mg/kg	106	70.0	130	----
	RM	Copper	7440-50-8	E440	123 mg/kg	107	70.0	130	----
	RM	Lead	7439-92-1	E440	267 mg/kg	101	70.0	130	----
	RM	Molybdenum	7439-98-7	E440	1.03 mg/kg	100	70.0	130	----
	RM	Nickel	7440-02-0	E440	26.7 mg/kg	104	70.0	130	----
	RM	Silver	7440-22-4	E440	4.06 mg/kg	102	70.0	130	----
	RM	Thallium	7440-28-0	E440	0.0786 mg/kg	102	40.0	160	----
	RM	Uranium	7440-61-1	E440	0.52 mg/kg	104	70.0	130	----
	RM	Vanadium	7440-62-2	E440	32.7 mg/kg	104	70.0	130	----
	RM	Zinc	7440-66-6	E440	297 mg/kg	96.9	70.0	130	----
Metals (QCLot: 784919)									
	RM	Calcium, soluble ion content	7440-70-2	E484	86.59 mg/L	100	70.0	130	----
	RM	Magnesium, soluble ion content	7439-95-4	E484	25.74 mg/L	100	70.0	130	----
	RM	Sodium, soluble ion content	17341-25-2	E484	30.05 mg/L	98.5	70.0	130	----
Metals (QCLot: 784921)									



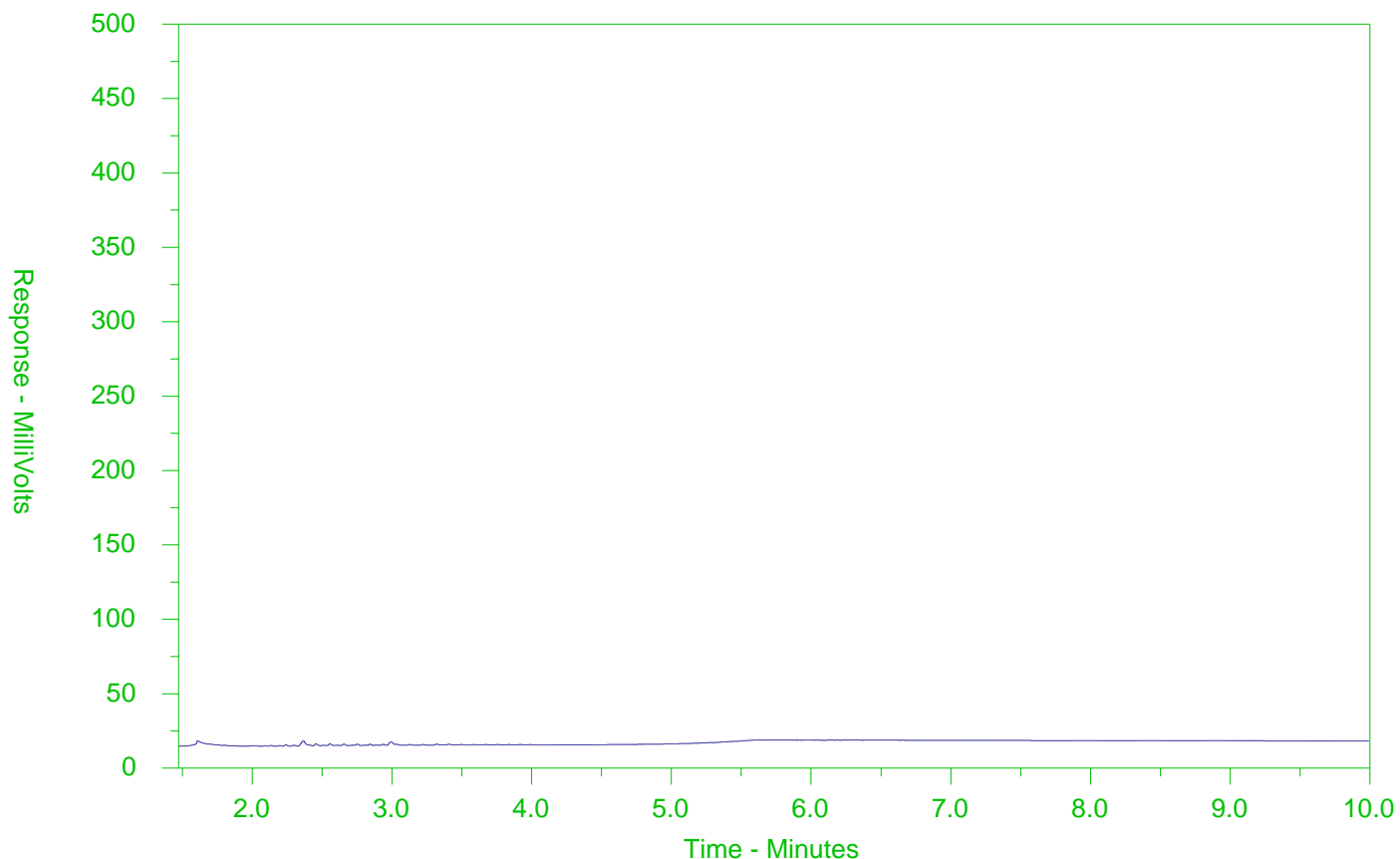
Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 784921) - continued									
	RM	Boron, hot water soluble	7440-42-8	E487	1.4938 mg/kg	115	60.0	140	----
Speciated Metals (QCLot: 784514)									
	RM	Chromium, hexavalent [Cr VI]	18540-29-9	E532	172 mg/kg	93.1	70.0	130	----

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: WT2225546-002-E601.SG-L
 Client Sample ID: S-12579218-121622-CM-MW22-2_6-8



← 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.

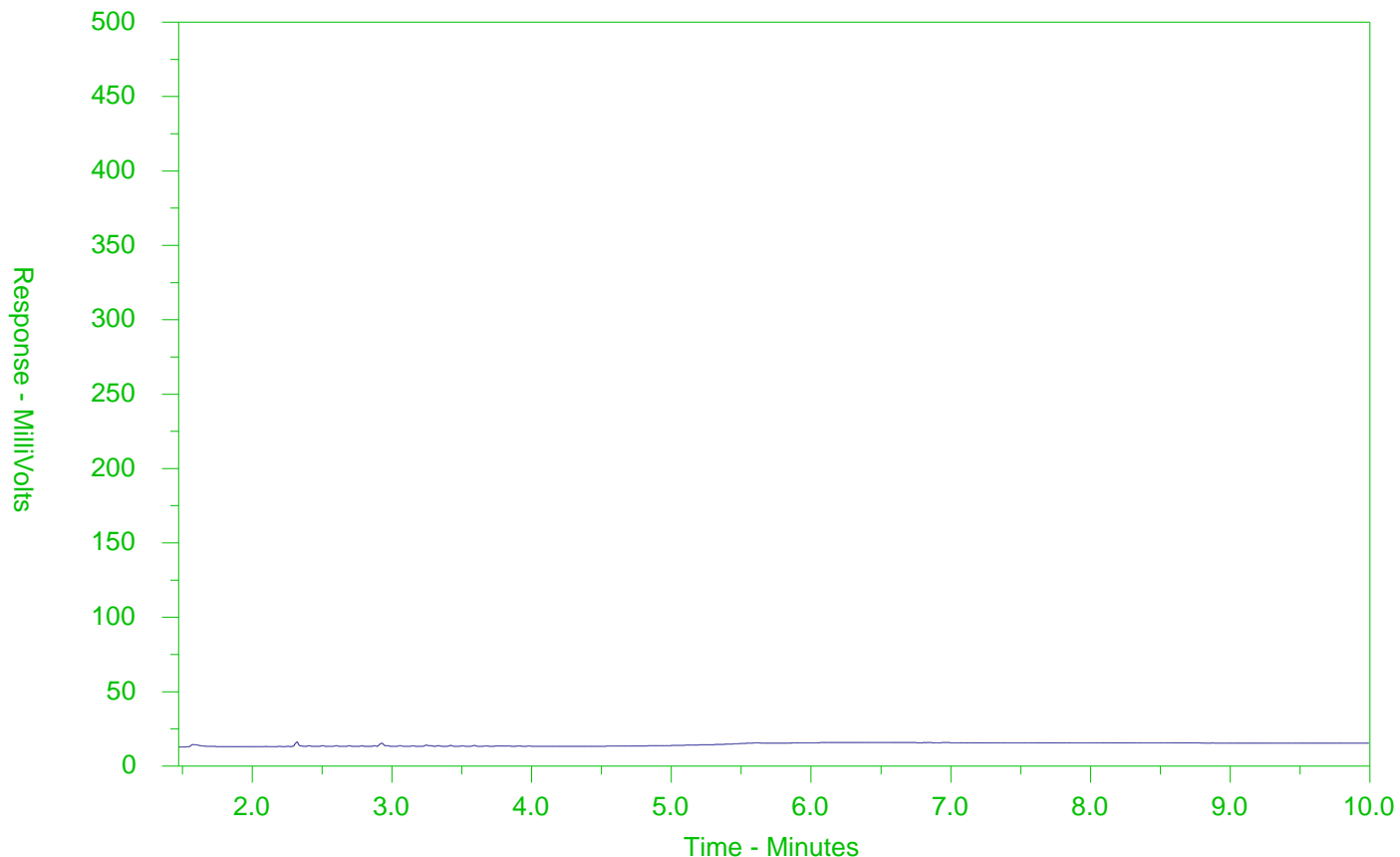
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: WT2225546-003-E601.SG-L
 Client Sample ID: S-12579218-121622-CM-MW22-2_28-30



← 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.

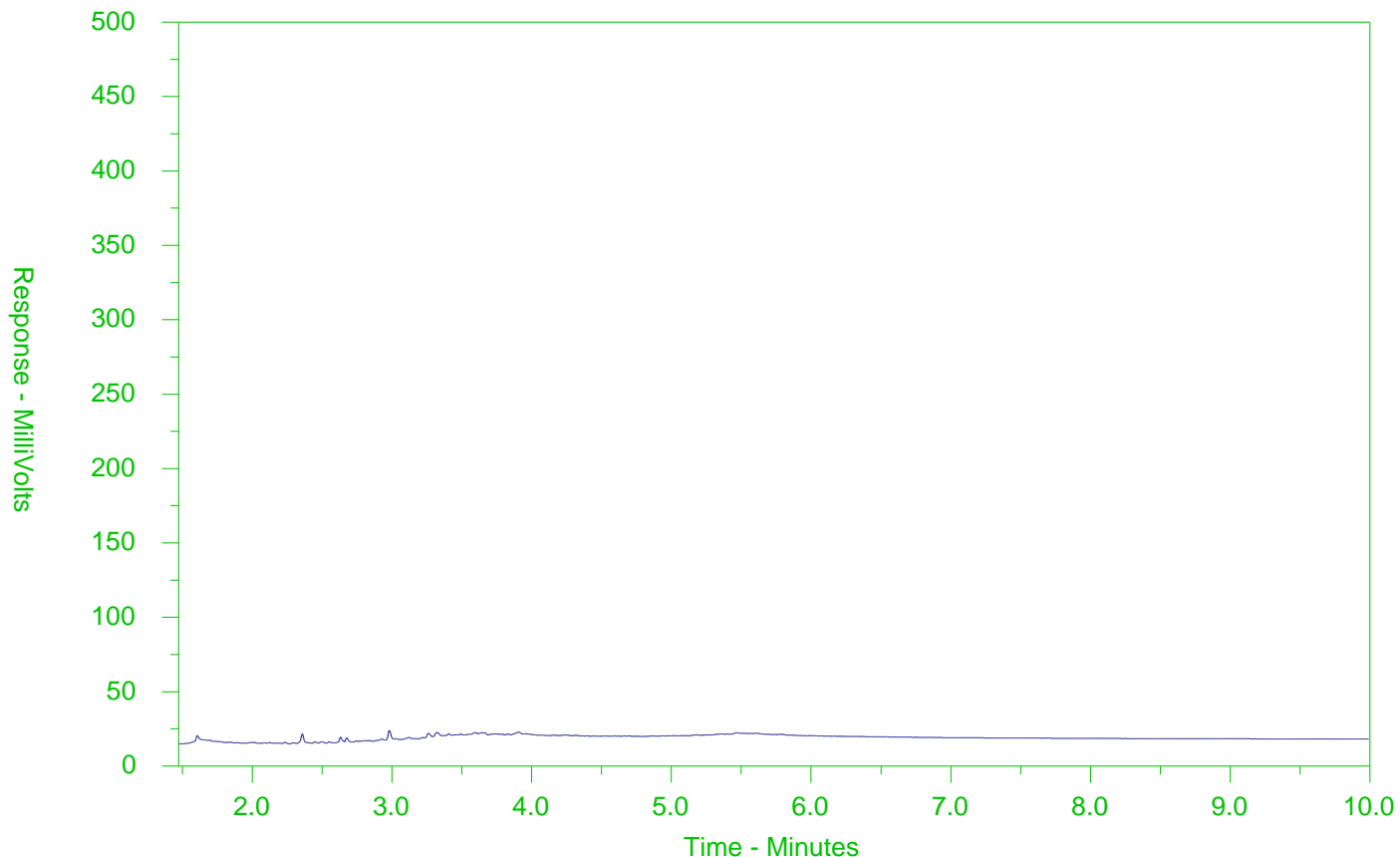
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: WT2225546-004-E601.SG-L
 Client Sample ID: S-12579218-121622-CM-MW22-1_1-2



← 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.

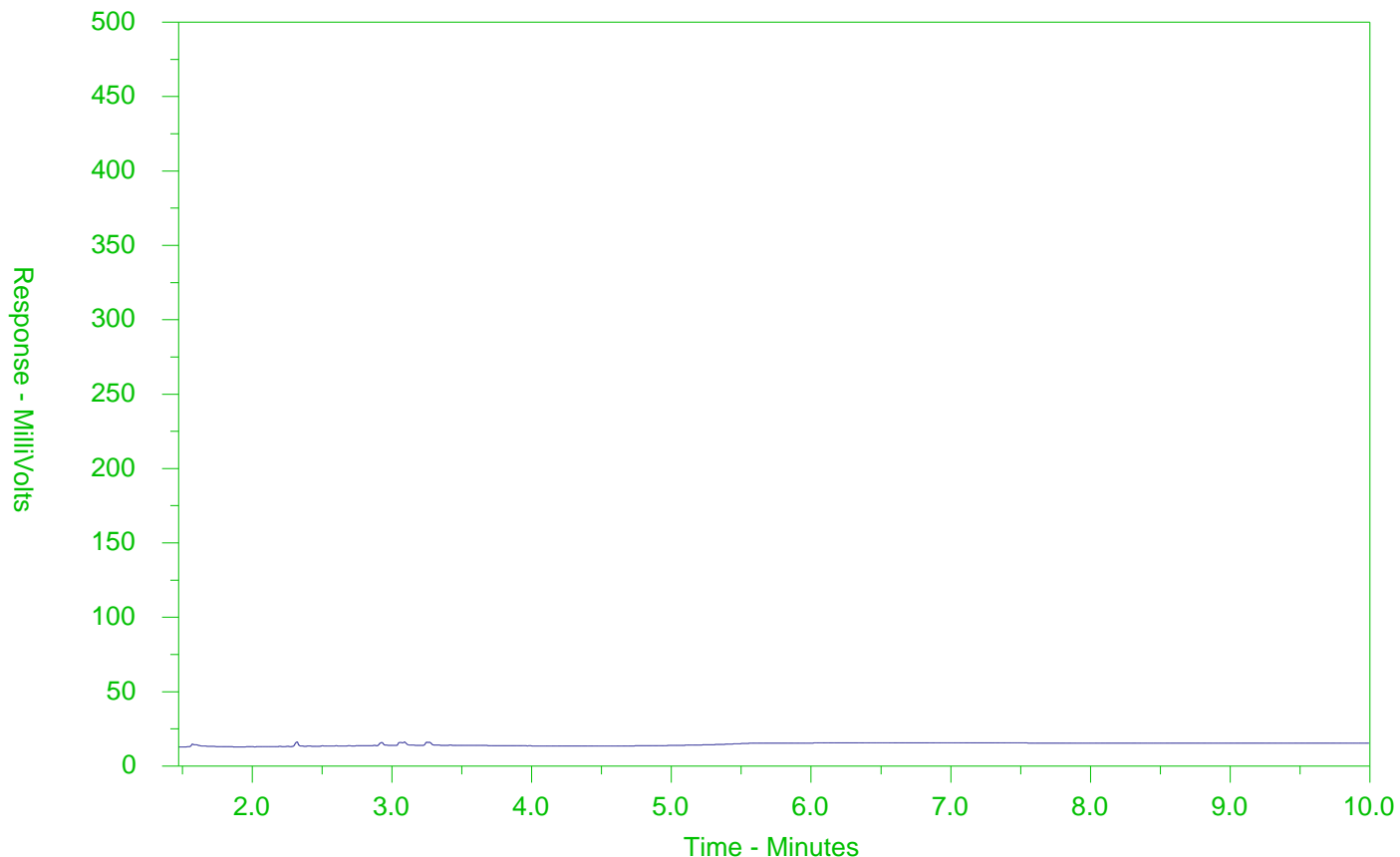
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: WT2225546-005-E601.SG-L
 Client Sample ID: S-12579218-121622-CM-MW22-1_34-36



← 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.

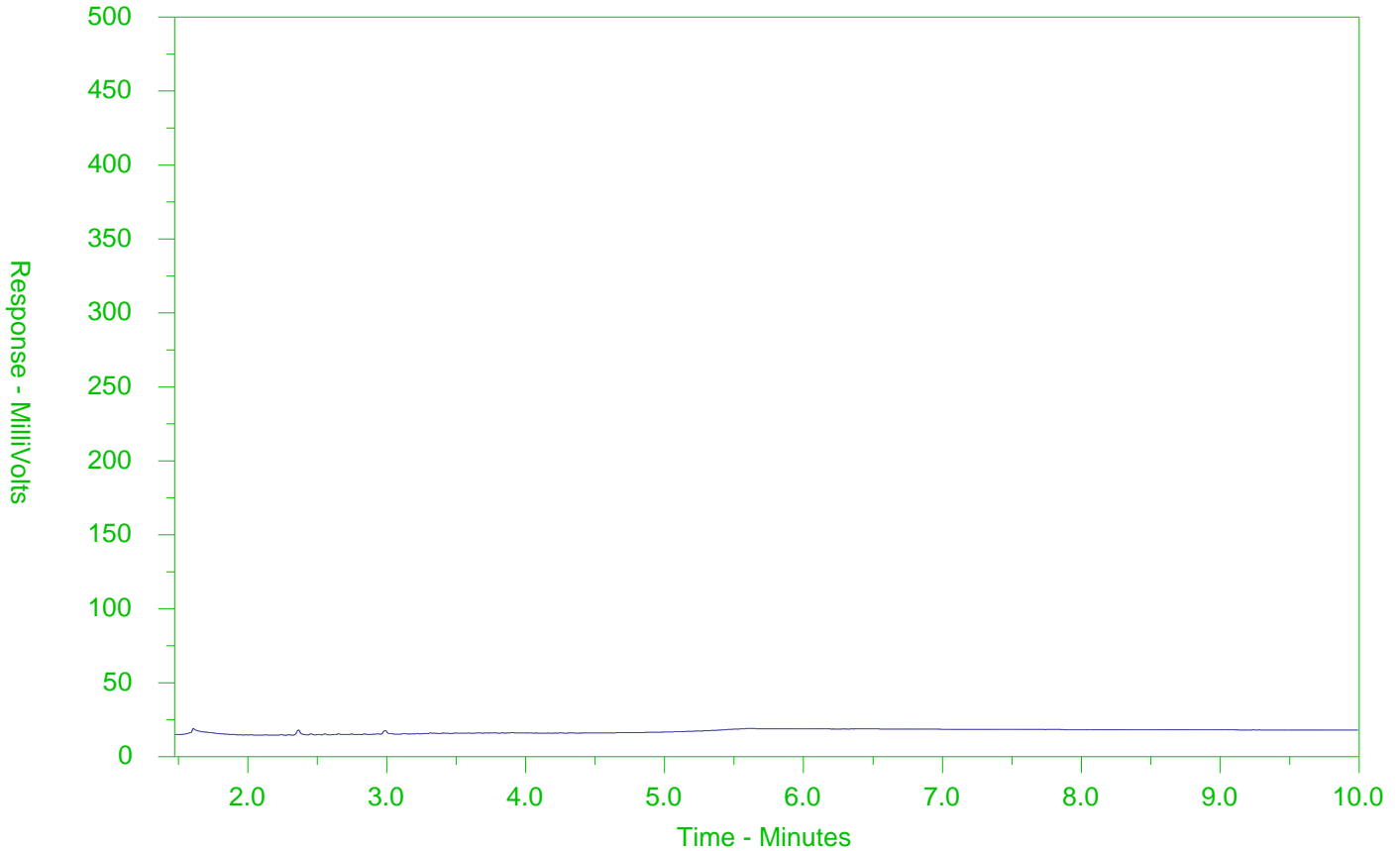
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: WT2225546-007-E601.SG-L
 Client Sample ID: S-12579218-121622-CM-DUP



← 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.



www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20 -

Environmental Division
Waterloo

Work Order Reference
WT2225546



Telephone : + 1 519 886 6910

Report To		Reports / Recipients			Turnaround Time (TAT) Requested															
Company:	GHD Ltd. (Acct GHDL100)	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)	<input checked="" type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply																
Contact:	Jennifer Balkwill	Merge QC/QCI Reports with COA	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> 1 day [P4] if received by 3pm M-F - 20% rush surcharge																
Phone:	519-884-0510	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		<input type="checkbox"/> 2 day [P3] if received by 3pm M-F - 25% rush surcharge																
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	<input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge																
Street:	455 Phillip St.	Email 1 or Fax	Jennifer.Balkwill@ghd.com	<input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge																
City/Province:	Waterloo, ON	Email 2	See SSOW/PO david.hutchinson@ghd.com	<input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge																
Postal Code:	N2L 3X2	Email 3	Chanel.mcmahon@ghd.com	Date and Time Required for all E&P TATs:																
Invoice To	Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Recipients			For tests that can not be performed accord															
Copy of Invoice with Report	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	Analysis Request																
Company:	GHD Ltd. (GHDL100)	Email 1 or Fax	accountspayableCDN@ghd.com	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																
Contact:		Email 2																		
Project Information		Oil and Gas Required Fields (client use)																		
ALS Account # / Quote #:	WT2022GHDL1000229	AFE/Cost Center:	PO#																	
Job #:	12579218	Major/Minor Code:	Routing Code:																	
PO / AFE:	735-005186	Requisitioner:																		
LSD:		Location:																		
ALS Lab Work Order # (lab use only):		ALS Contact:	Rick H	Sampler:																
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hr:mm)	Sample Type	NUMBER OF CONTAINERS							SAMPLES ON HOLD		EXTENDED STORAGE REQUIRED		SUSPECTED HAZARD (see notes)				
	5-12579218-121622-CM-MW22-2-4-6	16-Dec-22	9:50	SOIL	1															
	5-12579218-121622-CM-MW22-2-6-8		10:00		5	X	X	X	X											
	5-12579218-121622-CM-MW22-2-28-30		12:00		5	X	X	X	X											
	5-12579218-121622-CM-MW22-1-1-2		14:45		5	X	X	X	X											
	5-12579218-121622-CM-MW22-1-34-36		15:00		4	X	X	X	X											
	TRIP BLANK		18:00		1					X										
	5-12579218-121622-CM-DUP		14:55		5	X	X	X	X											
Drinking Water (DW) Samples ¹ (client use)		Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)			SAMPLE RECEIPT DETAILS (lab use only)															
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO					Cooling Method: <input type="checkbox"/> NONE <input checked="" type="checkbox"/> ICE <input type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED															
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Submission Comments identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO															
					Cooler Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A Sample Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A															
					INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C											
									0.9											
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)														
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:												
Chanel McMahon	16-Dec-22	18:15				HDJ	Dec 19, 22	10												

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.

SOL-193; VS-246.



CERTIFICATE OF ANALYSIS

<p>Work Order : WT2225551</p> <p>Client : GHD Limited</p> <p>Contact : Jennifer Balkwill</p> <p>Address : 455 Phillip Street Waterloo ON Canada N2L 3X2</p> <p>Telephone : ----</p> <p>Project : 12579218</p> <p>PO : 735-005186</p> <p>C-O-C number : ----</p> <p>Sampler : CM</p> <p>Site : ----</p> <p>Quote number : 12579218-SSOW-735-005186 City of Toronto Quote Q88890</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 4</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Rick Hawthorne</p> <p>Address : 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8</p> <p>Telephone : +1 519 886 6910</p> <p>Date Samples Received : 19-Dec-2022 10:00</p> <p>Date Analysis : 20-Dec-2022</p> <p>Commenced :</p> <p>Issue Date : 29-Dec-2022 09:21</p>
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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
- Surrogate Control Limits

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Organics, Waterloo, Ontario
Drew Jankowski	Lab Assistant	Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Metals, Waterloo, Ontario
Sarah Birch	VOC Section Supervisor	Organics, Waterloo, Ontario
Walt Kippenhuck	Team Leader - Inorganics	Inorganics, Waterloo, Ontario



General Comments

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
°C	degrees celsius
µg/L	micrograms per litre
m/sec	metres per second
mg/L	milligrams per litre
mm/sec	millimetres per second
none	none
pH units	pH units
sec	seconds

>: greater than.

<: less than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

WT2225551-001

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-TCLP -

Client sampling date / time: 16-Dec-2022 16:20

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
Physical Tests								
ignitability	----	Negative	-	none	E209	-	20-Dec-2022	-
sample comment	----	BROWN SAND	-	none	E209	-	20-Dec-2022	-
time to ignition	----	Not Determined	1	sec	E209	-	20-Dec-2022	-
burning rate	----	Not Determined	0.01	mm/sec	E209	-	20-Dec-2022	-
temperature of test material	----	20.0	1.0	°C	E209	-	20-Dec-2022	-
air velocity of fume hood	----	0.44	0.10	m/sec	E209	-	20-Dec-2022	-
TCLP Anions & Nutrients								
nitrate + nitrite (as N), TCLP	----	<7.50	7.5	mg/L	EC240.N+N	-	21-Dec-2022	-
TCLP Extractables								
Aroclor 1016, TCLP	12674-11-2	<0.00020	0.00020	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708
Aroclor 1221, TCLP	11104-28-2	<0.00020	0.00020	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708
Aroclor 1232, TCLP	11141-16-5	<0.00020	0.00020	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708
Aroclor 1242, TCLP	53469-21-9	<0.00020	0.00020	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708
Aroclor 1248, TCLP	12672-29-6	<0.00020	0.00020	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708
Aroclor 1254, TCLP	11097-69-1	<0.00020	0.00020	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708
Aroclor 1260, TCLP	11096-82-5	<0.00020	0.00020	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708
Aroclor 1262, TCLP	37324-23-5	<0.00020	0.00020	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708
Aroclor 1268, TCLP	11100-14-4	<0.00020	0.00020	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708
benzo(a)pyrene, TCLP	50-32-8	<0.00050	0.00050	mg/L	E644	22-Dec-2022	23-Dec-2022	787161
cyanide, weak acid dissociable, TCLP	----	<0.10	0.10	mg/L	E337A	21-Dec-2022	21-Dec-2022	785315
fluoride, TCLP	16984-48-8	<10	10	mg/L	E240.F	21-Dec-2022	21-Dec-2022	785213
nitrate (as N), TCLP	14797-55-8	<5.0	5.0	mg/L	E240.NO3	21-Dec-2022	21-Dec-2022	785214
nitrite (as N), TCLP	14797-65-0	<5.0	5.0	mg/L	E240.NO2	21-Dec-2022	21-Dec-2022	785215
decachlorobiphenyl, TCLP	2051-24-3	92.5	0.1	%	E688A	21-Dec-2022	28-Dec-2022	785708
tetrachloro-m-xylene, TCLP	877-09-8	90.3	0.1	%	E688A	21-Dec-2022	28-Dec-2022	785708
TCLP Extractables Surrogates								
chrysene-d12, TCLP	1719-03-5	101	5.0	%	E644	22-Dec-2022	23-Dec-2022	787161
naphthalene-d8, TCLP	1146-65-2	93.8	5.0	%	E644	22-Dec-2022	23-Dec-2022	787161
phenanthrene-d10, TCLP	1517-22-2	113	5.0	%	E644	22-Dec-2022	23-Dec-2022	787161
TCLP Metals								
arsenic, TCLP	7440-38-2	<1.0	1.0	mg/L	E444	21-Dec-2022	21-Dec-2022	785205
barium, TCLP	7440-39-3	<2.5	2.5	mg/L	E444	21-Dec-2022	21-Dec-2022	785205
boron, TCLP	7440-42-8	<0.50	0.50	mg/L	E444	21-Dec-2022	21-Dec-2022	785205
cadmium, TCLP	7440-43-9	<0.050	0.050	mg/L	E444	21-Dec-2022	21-Dec-2022	785205
chromium, TCLP	7440-47-3	<0.25	0.25	mg/L	E444	21-Dec-2022	21-Dec-2022	785205
lead, TCLP	7439-92-1	<0.25	0.25	mg/L	E444	21-Dec-2022	21-Dec-2022	785205
mercury, TCLP	7439-97-6	<0.0010	0.0010	mg/L	E512	21-Dec-2022	21-Dec-2022	785247
pH, TCLP 1st preliminary	----	9.92	0.010	pH units	EPP444	-	20-Dec-2022	-
pH, TCLP 2nd preliminary	----	5.11	0.010	pH units	EPP444	-	20-Dec-2022	-
pH, TCLP extraction fluid initial	----	2.89	0.010	pH units	EPP444	-	20-Dec-2022	-
pH, TCLP final	----	5.80	0.010	pH units	EPP444	-	20-Dec-2022	-
selenium, TCLP	7782-49-2	<0.10	0.10	mg/L	E444	21-Dec-2022	21-Dec-2022	785205
silver, TCLP	7440-22-4	<0.050	0.050	mg/L	E444	21-Dec-2022	21-Dec-2022	785205
uranium, TCLP	7440-61-1	<0.20	0.20	mg/L	E444	21-Dec-2022	21-Dec-2022	785205



Analytical Results

WT2225551-001

Sub-Matrix: Soil

(Matrix: Soil/Solid)

Client sample ID: S-12579218-121622-CM-TCLP -

Client sampling date / time: 16-Dec-2022 16:20

Analyte	CAS Number	Result	LOR	Unit	Method	Prep Date	Analysis Date	QCLot
TCLP VOCs								
benzene, TCLP	71-43-2	<0.0050	0.0050	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
carbon tetrachloride, TCLP	56-23-5	<0.025	0.025	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
chlorobenzene, TCLP	108-90-7	<0.025	0.025	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
chloroform, TCLP	67-66-3	<0.10	0.10	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
dichlorobenzene, 1,2-, TCLP	95-50-1	<0.025	0.025	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
dichlorobenzene, 1,4-, TCLP	106-46-7	<0.025	0.025	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
dichloroethane, 1,2-, TCLP	107-06-2	<0.025	0.025	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
dichloroethylene, 1,1-, TCLP	75-35-4	<0.025	0.025	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
dichloromethane, TCLP	75-09-2	<0.10	0.10	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
methyl ethyl ketone [MEK], TCLP	78-93-3	<0.10	0.10	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
tetrachloroethylene, TCLP	127-18-4	<0.025	0.025	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
trichloroethylene, TCLP	79-01-6	<0.025	0.025	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
vinyl chloride, TCLP	75-01-4	<0.050	0.050	mg/L	E615B	22-Dec-2022	22-Dec-2022	787594
TCLP VOCs Surrogates								
bromofluorobenzene, 4-, TCLP	460-00-4	95.4	1.0	%	E615B	22-Dec-2022	22-Dec-2022	787594
difluorobenzene, 1,4-, TCLP	540-36-3	99.7	1.0	%	E615B	22-Dec-2022	22-Dec-2022	787594
Polychlorinated Biphenyls								
polychlorinated biphenyls [PCBs], total, TCLP	----	<0.00060	0.00060	mg/L	E688A	21-Dec-2022	28-Dec-2022	785708

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



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : WT2225551</p> <p>Client : GHD Limited</p> <p>Contact : Jennifer Balkwill</p> <p>Address : 455 Phillip Street Waterloo ON Canada N2L 3X2</p> <p>Telephone : ----</p> <p>Project : 12579218</p> <p>PO : 735-005186</p> <p>C-O-C number : ----</p> <p>Sampler : CM</p> <p>Site : ----</p> <p>Quote number : 12579218-SSOW-735-005186 City of Toronto Quote Q88890</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 8</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Rick Hawthorne</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : +1 519 886 6910</p> <p>Date Samples Received : 19-Dec-2022 10:00</p> <p>Issue Date : 29-Dec-2022 09:21</p>
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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 Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Ignitability (O. Reg. 347/558)										
Glass soil jar/Teflon lined cap S-12579218-121622-CM-TCLP	E209	16-Dec-2022	----	----	----		20-Dec-2022	30 days	4 days	✓
Polychlorinated Biphenyls : PCB Aroclors by GC-MS (TCLP)										
Amber glass/Teflon lined cap [ON MECP] S-12579218-121622-CM-TCLP	E688A	20-Dec-2022	21-Dec-2022	18 days	5 days	✓	28-Dec-2022	40 days	7 days	✓
TCLP Extractables : Fluoride by IC (TCLP)										
HDPE [ON MECP] S-12579218-121622-CM-TCLP	E240.F	20-Dec-2022	21-Dec-2022	----	----		21-Dec-2022	28 days	5 days	✓
TCLP Extractables : Nitrate by IC (TCLP)										
HDPE [ON MECP] S-12579218-121622-CM-TCLP	E240.NO3	20-Dec-2022	21-Dec-2022	----	----		21-Dec-2022	7 days	5 days	✓
TCLP Extractables : Nitrite by IC (TCLP)										
HDPE [ON MECP] S-12579218-121622-CM-TCLP	E240.NO2	20-Dec-2022	21-Dec-2022	----	----		21-Dec-2022	7 days	5 days	✓
TCLP Extractables : PAHs by GC-MS (TCLP)										
Amber glass/Teflon lined cap (sodium bisulfate) S-12579218-121622-CM-TCLP	E644	20-Dec-2022	22-Dec-2022	18 days	6 days	✓	23-Dec-2022	40 days	1 days	✓
TCLP Extractables : PCB Aroclors by GC-MS (TCLP)										
Amber glass/Teflon lined cap [ON MECP] S-12579218-121622-CM-TCLP	E688A	20-Dec-2022	21-Dec-2022	18 days	5 days	✓	28-Dec-2022	40 days	7 days	✓



Matrix: Soil/Solid

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

Analyte Group 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	
TCLP Extractables : WAD Cyanide (TCLP)										
UV-inhibited HDPE - total (lab preserved) S-12579218-121622-CM-TCLP	E337A	20-Dec-2022	21-Dec-2022	----	----		21-Dec-2022	14 days	5 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
Glass vial - total (lab preserved) S-12579218-121622-CM-TCLP	E512	20-Dec-2022	21-Dec-2022	----	----		21-Dec-2022	28 days	5 days	✓
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE (lab preserved) S-12579218-121622-CM-TCLP	E444	20-Dec-2022	21-Dec-2022	184 days	5 days	✓	21-Dec-2022	179 days	0 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 14 day HT (e.g. CN, SVOC, NOx) S-12579218-121622-CM-TCLP	EPP444	16-Dec-2022	20-Dec-2022	----	----		----	----	----	
TCLP VOCs : VOCs by Headspace GC-MS (TCLP)										
Glass vial (sodium bisulfate) S-12579218-121622-CM-TCLP	E615B	20-Dec-2022	22-Dec-2022	----	----		22-Dec-2022	14 days	6 days	✓

Legend & Qualifier Definitions

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



Quality Control Parameter Frequency Compliance

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

Matrix: **Soil/Solid**

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Fluoride by IC (TCLP)	E240.F	785213	1	7	14.2	5.0	✓
Mercury by CVAAS (TCLP)	E512	785247	1	7	14.2	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	785205	1	8	12.5	5.0	✓
Nitrate by IC (TCLP)	E240.NO3	785214	1	7	14.2	5.0	✓
Nitrite by IC (TCLP)	E240.NO2	785215	1	7	14.2	5.0	✓
PAHs by GC-MS (TCLP)	E644	787161	1	10	10.0	5.0	✓
PCB Aroclors by GC-MS (TCLP)	E688A	785708	1	2	50.0	5.0	✓
VOCs by Headspace GC-MS (TCLP)	E615B	787594	1	10	10.0	5.0	✓
WAD Cyanide (TCLP)	E337A	785315	1	7	14.2	5.0	✓
Laboratory Control Samples (LCS)							
Fluoride by IC (TCLP)	E240.F	785213	1	7	14.2	5.0	✓
Mercury by CVAAS (TCLP)	E512	785247	1	7	14.2	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	785205	1	8	12.5	5.0	✓
Nitrate by IC (TCLP)	E240.NO3	785214	1	7	14.2	5.0	✓
Nitrite by IC (TCLP)	E240.NO2	785215	1	7	14.2	5.0	✓
PAHs by GC-MS (TCLP)	E644	787161	1	10	10.0	5.0	✓
PCB Aroclors by GC-MS (TCLP)	E688A	785708	1	2	50.0	5.0	✓
VOCs by Headspace GC-MS (TCLP)	E615B	787594	1	10	10.0	5.0	✓
WAD Cyanide (TCLP)	E337A	785315	1	7	14.2	5.0	✓
Method Blanks (MB)							
Fluoride by IC (TCLP)	E240.F	785213	1	7	14.2	5.0	✓
Mercury by CVAAS (TCLP)	E512	785247	1	7	14.2	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	785205	1	8	12.5	5.0	✓
Nitrate by IC (TCLP)	E240.NO3	785214	1	7	14.2	5.0	✓
Nitrite by IC (TCLP)	E240.NO2	785215	1	7	14.2	5.0	✓
PAHs by GC-MS (TCLP)	E644	787161	1	10	10.0	5.0	✓
PCB Aroclors by GC-MS (TCLP)	E688A	785708	1	2	50.0	5.0	✓
VOCs by Headspace GC-MS (TCLP)	E615B	787594	1	10	10.0	5.0	✓
WAD Cyanide (TCLP)	E337A	785315	1	7	14.2	5.0	✓
Matrix Spikes (MS)							
Fluoride by IC (TCLP)	E240.F	785213	1	7	14.2	5.0	✓
Mercury by CVAAS (TCLP)	E512	785247	1	7	14.2	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	785205	1	8	12.5	5.0	✓
Nitrate by IC (TCLP)	E240.NO3	785214	1	7	14.2	5.0	✓
Nitrite by IC (TCLP)	E240.NO2	785215	1	7	14.2	5.0	✓



Matrix: **Soil/Solid**

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
Matrix Spikes (MS) - Continued							
PAHs by GC-MS (TCLP)	E644	787161	1	10	10.0	5.0	✓
PCB Aroclors by GC-MS (TCLP)	E688A	785708	1	2	50.0	5.0	✓
VOCs by Headspace GC-MS (TCLP)	E615B	787594	1	10	10.0	5.0	✓
WAD Cyanide (TCLP)	E337A	785315	1	7	14.2	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
Ignitability (O. Reg. 347/558)	E209 Waterloo - Environmental	Soil/Solid	EPA 1030 (mod)	Ignitability is determined by placing a sample on a ceramic tile and formed into a test strip. One end of the strip is then heated with a torch. Any burn rate for non-metallic samples that exceeds 2.2 mm/sec is considered to have a positive result. For metals, a burn rate of more than 0.17 mm/sec is considered to have a positive result.
Fluoride by IC (TCLP)	E240.F Waterloo - Environmental	Soil/Solid	EPA 1311/EPA 300.1 (mod)	Inorganic anions are analyzed by obtaining an extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311, which is then analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite by IC (TCLP)	E240.NO2 Waterloo - Environmental	Soil/Solid	EPA 1311/EPA 300.1 (mod)	Inorganic anions are analyzed by obtaining an extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311, which is then analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate by IC (TCLP)	E240.NO3 Waterloo - Environmental	Soil/Solid	EPA 1311/EPA 300.1 (mod)	Inorganic anions are analyzed by obtaining an extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311, which is then analyzed by Ion Chromatography with conductivity and/or UV detection.
WAD Cyanide (TCLP)	E337A Waterloo - Environmental	Soil/Solid	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined after extraction by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Metals by CRC ICPMS (TCLP)	E444 Waterloo - Environmental	Soil/Solid	EPA 1311/6020B (mod)	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by Collision/Reaction Cell ICPMS.
Mercury by CVAAS (TCLP)	E512 Waterloo - Environmental	Soil/Solid	SW 846 -1311/245.1 CVAA ON TCLP LEACHATE	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by CVAAS.
VOCs by Headspace GC-MS (TCLP)	E615B Waterloo - Environmental	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 by GC-MS (TCLP)	E644 Waterloo - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by GC-MS.
PCB Aroclors by GC-MS (TCLP)	E688A Waterloo - Environmental	Soil/Solid	EPA 8270E (mod)	PCB Aroclors are analyzed by GC-MS



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrate and Nitrite (as N), (TCLP) (Calculation)	EC240.N+N Waterloo - Environmental	Soil/Solid	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VOCs Preparation for Headspace Analysis (TCLP)	EP582 Waterloo - Environmental	Soil/Solid	EPA 5021A (mod)	Liquid obtained after the TCLP process is 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 Extraction (TCLP)	EP602 Waterloo - Environmental	Soil/Solid	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.
Pesticides, PCB, and Neutral Extractable Chlorinated Hydrocarbons Extraction (TCLP)	EP661 Waterloo - Environmental	Soil/Solid	EPA 3511 (mod)	Samples are extracted from aqueous sample using an organic solvent liquid-liquid extraction.
TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)	EPP444 Waterloo - Environmental	Soil/Solid	EPA 1311	Preparation of a Toxicity Characteristic Leaching Procedure (TCLP) solid sample involves particle size reduction, homogenization, then determination of appropriate extraction fluid. A measured portion of fresh subsample is placed in an extraction bottle with the appropriate extraction fluid then tumbled in a rotary extractor for 18+/- 2 hours at 23 +/- 2 C. The liquid leachate is filtered to separate from solids then bottled and prepared for analytical tests.
TCLP Leachate Preparation (VOCs)	EPP582 Waterloo - Environmental	Soil/Solid	EPA 1311	An extract produced by the Toxicity Characteristic Leaching Procedure (TCLP) as per EPA 1311.

QUALITY CONTROL REPORT

<p>Work Order : WT2225551</p> <p>Client : GHD Limited</p> <p>Contact : Jennifer Balkwill</p> <p>Address : 455 Phillip Street Waterloo ON Canada N2L 3X2</p> <p>Telephone :</p> <p>Project : 12579218</p> <p>PO : 735-005186</p> <p>C-O-C number : ----</p> <p>Sampler : CM</p> <p>Site : ----</p> <p>Quote number : 12579218-SSOW-735-005186 City of Toronto Quote Q88890</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 10</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Rick Hawthorne</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : +1 519 886 6910</p> <p>Date Samples Received : 19-Dec-2022 10:00</p> <p>Date Analysis Commenced : 20-Dec-2022</p> <p>Issue Date : 29-Dec-2022 09:21</p>
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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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Waterloo Organics, Waterloo, Ontario
Drew Jankowski	Lab Assistant	Waterloo Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
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Sarah Birch	VOC Section Supervisor	Waterloo Organics, Waterloo, Ontario
Walt Kippenhuck	Team Leader - Inorganics	Waterloo Inorganics, Waterloo, Ontario

Page : 2 of 10
Work Order : WT2225551
Client : GHD Limited
Project : 12579218



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
TCLP Extractables (QC Lot: 785213)											
WT2225406-001	Anonymous	fluoride, TCLP	16984-48-8	E240.F	10	mg/L	<10	<10	0	Diff <2x LOR	----
TCLP Extractables (QC Lot: 785214)											
WT2225406-001	Anonymous	nitrate (as N), TCLP	14797-55-8	E240.NO3	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
TCLP Extractables (QC Lot: 785215)											
WT2225406-001	Anonymous	nitrite (as N), TCLP	14797-65-0	E240.NO2	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
TCLP Extractables (QC Lot: 785315)											
WT2225406-001	Anonymous	cyanide, weak acid dissociable, TCLP	----	E337A	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
TCLP Extractables (QC Lot: 785708)											
WT2225466-001	Anonymous	Aroclor 1016, TCLP	12674-11-2	E688A	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Aroclor 1221, TCLP	11104-28-2	E688A	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Aroclor 1232, TCLP	11141-16-5	E688A	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Aroclor 1242, TCLP	53469-21-9	E688A	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Aroclor 1248, TCLP	12672-29-6	E688A	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Aroclor 1254, TCLP	11097-69-1	E688A	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Aroclor 1260, TCLP	11096-82-5	E688A	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Aroclor 1262, TCLP	37324-23-5	E688A	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Aroclor 1268, TCLP	11100-14-4	E688A	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
TCLP Extractables (QC Lot: 787161)											
HA2200063-006	Anonymous	benzo(a)pyrene, TCLP	50-32-8	E644	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	----
TCLP Metals (QC Lot: 785205)											
WT2225504-001	Anonymous	arsenic, TCLP	7440-38-2	E444	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	<2.5	0	Diff <2x LOR	----
		boron, TCLP	7440-42-8	E444	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		cadmium, TCLP	7440-43-9	E444	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	<0.25	0	Diff <2x LOR	----
		lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	<0.25	0	Diff <2x LOR	----
		selenium, TCLP	7782-49-2	E444	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
		silver, TCLP	7440-22-4	E444	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		uranium, TCLP	7440-61-1	E444	0.20	mg/L	<0.20	<0.20	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
TCLP Metals (QC Lot: 785247)											
WT2225406-001	Anonymous	mercury, TCLP	7439-97-6	E512	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
TCLP VOCs (QC Lot: 787594)											
WT2225466-001	Anonymous	benzene, TCLP	71-43-2	E615B	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		carbon tetrachloride, TCLP	56-23-5	E615B	25	µg/L	<25	<25	0	Diff <2x LOR	----
		chlorobenzene, TCLP	108-90-7	E615B	25	µg/L	<25	<25	0	Diff <2x LOR	----
		chloroform, TCLP	67-66-3	E615B	100	µg/L	<100	<100	0	Diff <2x LOR	----
		dichlorobenzene, 1,2-, TCLP	95-50-1	E615B	25	µg/L	<25	<25	0	Diff <2x LOR	----
		dichlorobenzene, 1,4-, TCLP	106-46-7	E615B	25	µg/L	<25	<25	0	Diff <2x LOR	----
		dichloroethane, 1,2-, TCLP	107-06-2	E615B	25	µg/L	<25	<25	0	Diff <2x LOR	----
		dichloroethylene, 1,1-, TCLP	75-35-4	E615B	25	µg/L	<25	<25	0	Diff <2x LOR	----
		dichloromethane, TCLP	75-09-2	E615B	100	µg/L	<100	<100	0	Diff <2x LOR	----
		methyl ethyl ketone [MEK], TCLP	78-93-3	E615B	100	µg/L	<100	<100	0	Diff <2x LOR	----
		tetrachloroethylene, TCLP	127-18-4	E615B	25	µg/L	<25	<25	0	Diff <2x LOR	----
trichloroethylene, TCLP	79-01-6	E615B	25	µg/L	<25	<25	0	Diff <2x LOR	----		
vinyl chloride, TCLP	75-01-4	E615B	50	µg/L	<50	<50	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: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
TCLP Extractables (QCLot: 785213)						
fluoride, TCLP	16984-48-8	E240.F	10	mg/L	<10	----
TCLP Extractables (QCLot: 785214)						
nitrate (as N), TCLP	14797-55-8	E240.NO3	5	mg/L	<5.0	----
TCLP Extractables (QCLot: 785215)						
nitrite (as N), TCLP	14797-65-0	E240.NO2	5	mg/L	<5.0	----
TCLP Extractables (QCLot: 785315)						
cyanide, weak acid dissociable, TCLP	----	E337A	0.1	mg/L	<0.10	----
TCLP Extractables (QCLot: 785708)						
Aroclor 1016, TCLP	12674-11-2	E688A	0.2	µg/L	<0.20	----
Aroclor 1221, TCLP	11104-28-2	E688A	0.2	µg/L	<0.20	----
Aroclor 1232, TCLP	11141-16-5	E688A	0.2	µg/L	<0.20	----
Aroclor 1242, TCLP	53469-21-9	E688A	0.2	µg/L	<0.20	----
Aroclor 1248, TCLP	12672-29-6	E688A	0.2	µg/L	<0.20	----
Aroclor 1254, TCLP	11097-69-1	E688A	0.2	µg/L	<0.20	----
Aroclor 1260, TCLP	11096-82-5	E688A	0.2	µg/L	<0.20	----
Aroclor 1262, TCLP	37324-23-5	E688A	0.2	µg/L	<0.20	----
Aroclor 1268, TCLP	11100-14-4	E688A	0.2	µg/L	<0.20	----
TCLP Extractables (QCLot: 787161)						
benzo(a)pyrene, TCLP	50-32-8	E644	0.5	µg/L	<0.50	----
TCLP Metals (QCLot: 785205)						
arsenic, TCLP	7440-38-2	E444	1	mg/L	<1.0	----
barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	----
boron, TCLP	7440-42-8	E444	0.5	mg/L	<0.50	----
cadmium, TCLP	7440-43-9	E444	0.05	mg/L	<0.050	----
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	----
lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	----
selenium, TCLP	7782-49-2	E444	0.1	mg/L	<0.10	----
silver, TCLP	7440-22-4	E444	0.05	mg/L	<0.050	----
uranium, TCLP	7440-61-1	E444	0.2	mg/L	<0.20	----
TCLP Metals (QCLot: 785247)						
mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
TCLP VOCs (QCLot: 787594)						



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
TCLP VOCs (QCLot: 787594) - continued						
benzene, TCLP	71-43-2	E615B	5	µg/L	<5.0	----
carbon tetrachloride, TCLP	56-23-5	E615B	25	µg/L	<25	----
chlorobenzene, TCLP	108-90-7	E615B	25	µg/L	<25	----
chloroform, TCLP	67-66-3	E615B	100	µg/L	<100	----
dichlorobenzene, 1,2-, TCLP	95-50-1	E615B	25	µg/L	<25	----
dichlorobenzene, 1,4-, TCLP	106-46-7	E615B	25	µg/L	<25	----
dichloroethane, 1,2-, TCLP	107-06-2	E615B	25	µg/L	<25	----
dichloroethylene, 1,1-, TCLP	75-35-4	E615B	25	µg/L	<25	----
dichloromethane, TCLP	75-09-2	E615B	100	µg/L	<100	----
methyl ethyl ketone [MEK], TCLP	78-93-3	E615B	100	µg/L	<100	----
tetrachloroethylene, TCLP	127-18-4	E615B	25	µg/L	<25	----
trichloroethylene, TCLP	79-01-6	E615B	25	µg/L	<25	----
vinyl chloride, TCLP	75-01-4	E615B	50	µg/L	<50	----



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				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
TCLP Extractables (QCLot: 785213)									
fluoride, TCLP	16984-48-8	E240.F	10	mg/L	1 mg/L	91.0	70.0	130	----
TCLP Extractables (QCLot: 785214)									
nitrate (as N), TCLP	14797-55-8	E240.NO3	5	mg/L	2.5 mg/L	95.7	70.0	130	----
TCLP Extractables (QCLot: 785215)									
nitrite (as N), TCLP	14797-65-0	E240.NO2	5	mg/L	0.5 mg/L	98.7	70.0	130	----
TCLP Extractables (QCLot: 785315)									
cyanide, weak acid dissociable, TCLP	----	E337A	0.1	mg/L	6.25 mg/L	93.1	70.0	130	----
TCLP Extractables (QCLot: 785708)									
Aroclor 1016, TCLP	12674-11-2	E688A	0.2	µg/L	0.2 µg/L	96.3	65.0	130	----
Aroclor 1221, TCLP	11104-28-2	E688A	0.2	µg/L	0.2 µg/L	96.3	65.0	130	----
Aroclor 1232, TCLP	11141-16-5	E688A	0.2	µg/L	0.2 µg/L	96.3	65.0	130	----
Aroclor 1242, TCLP	53469-21-9	E688A	0.2	µg/L	0.2 µg/L	96.3	65.0	130	----
Aroclor 1248, TCLP	12672-29-6	E688A	0.2	µg/L	0.2 µg/L	79.5	65.0	130	----
Aroclor 1254, TCLP	11097-69-1	E688A	0.2	µg/L	0.2 µg/L	91.6	65.0	130	----
Aroclor 1260, TCLP	11096-82-5	E688A	0.2	µg/L	0.2 µg/L	105	65.0	130	----
Aroclor 1262, TCLP	37324-23-5	E688A	0.2	µg/L	0.2 µg/L	105	65.0	130	----
Aroclor 1268, TCLP	11100-14-4	E688A	0.2	µg/L	0.2 µg/L	105	65.0	130	----
TCLP Extractables (QCLot: 787161)									
benzo(a)pyrene, TCLP	50-32-8	E644	0.5	µg/L	0.5263 µg/L	87.4	60.0	140	----
TCLP Metals (QCLot: 785205)									
arsenic, TCLP	7440-38-2	E444	1	mg/L	0.05 mg/L	112	70.0	130	----
barium, TCLP	7440-39-3	E444	2.5	mg/L	0.0125 mg/L	106	70.0	130	----
boron, TCLP	7440-42-8	E444	0.5	mg/L	0.05 mg/L	104	70.0	130	----
cadmium, TCLP	7440-43-9	E444	0.05	mg/L	0.005 mg/L	105	70.0	130	----
chromium, TCLP	7440-47-3	E444	0.25	mg/L	0.0125 mg/L	106	70.0	130	----
lead, TCLP	7439-92-1	E444	0.25	mg/L	0.025 mg/L	108	70.0	130	----
selenium, TCLP	7782-49-2	E444	0.1	mg/L	0.05 mg/L	105	70.0	130	----
silver, TCLP	7440-22-4	E444	0.05	mg/L	0.005 mg/L	93.7	70.0	130	----
uranium, TCLP	7440-61-1	E444	0.2	mg/L	0.00025 mg/L	107	70.0	130	----
TCLP Metals (QCLot: 785247)									
mercury, TCLP	7439-97-6	E512	0.001	mg/L	0.0001 mg/L	102	70.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
TCLP VOCs (QCLot: 787594)									
benzene, TCLP	71-43-2	E615B	5	µg/L	250 µg/L	101	70.0	130	----
carbon tetrachloride, TCLP	56-23-5	E615B	25	µg/L	250 µg/L	101	60.0	140	----
chlorobenzene, TCLP	108-90-7	E615B	25	µg/L	250 µg/L	97.2	70.0	130	----
chloroform, TCLP	67-66-3	E615B	100	µg/L	250 µg/L	102	70.0	130	----
dichlorobenzene, 1,2-, TCLP	95-50-1	E615B	25	µg/L	250 µg/L	96.7	70.0	130	----
dichlorobenzene, 1,4-, TCLP	106-46-7	E615B	25	µg/L	250 µg/L	97.0	70.0	130	----
dichloroethane, 1,2-, TCLP	107-06-2	E615B	25	µg/L	250 µg/L	105	70.0	130	----
dichloroethylene, 1,1-, TCLP	75-35-4	E615B	25	µg/L	250 µg/L	100	70.0	130	----
dichloromethane, TCLP	75-09-2	E615B	100	µg/L	250 µg/L	108	70.0	130	----
methyl ethyl ketone [MEK], TCLP	78-93-3	E615B	100	µg/L	250 µg/L	115	50.0	150	----
tetrachloroethylene, TCLP	127-18-4	E615B	25	µg/L	250 µg/L	96.8	70.0	130	----
trichloroethylene, TCLP	79-01-6	E615B	25	µg/L	250 µg/L	100	70.0	130	----
vinyl chloride, TCLP	75-01-4	E615B	50	µg/L	250 µg/L	106	60.0	130	----



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
TCLP Extractables (QCLot: 785213)										
WT2225406-001	Anonymous	fluoride, TCLP	16984-48-8	E240.F	19 mg/L	20 mg/L	93.1	50.0	150	----
TCLP Extractables (QCLot: 785214)										
WT2225406-001	Anonymous	nitrate (as N), TCLP	14797-55-8	E240.NO3	52.2 mg/L	50 mg/L	104	50.0	150	----
TCLP Extractables (QCLot: 785215)										
WT2225406-001	Anonymous	nitrite (as N), TCLP	14797-65-0	E240.NO2	10.2 mg/L	10 mg/L	102	50.0	150	----
TCLP Extractables (QCLot: 785315)										
WT2225406-001	Anonymous	cyanide, weak acid dissociable, TCLP	----	E337A	5.23 mg/L	6.25 mg/L	83.6	50.0	140	----
TCLP Extractables (QCLot: 785708)										
WT2225466-001	Anonymous	Aroclor 1016, TCLP	12674-11-2	E688A	0.21 µg/L	0.2 µg/L	107	50.0	150	----
		Aroclor 1221, TCLP	11104-28-2	E688A	0.21 µg/L	0.2 µg/L	107	50.0	150	----
		Aroclor 1232, TCLP	11141-16-5	E688A	0.21 µg/L	0.2 µg/L	107	50.0	150	----
		Aroclor 1242, TCLP	53469-21-9	E688A	0.21 µg/L	0.2 µg/L	106	50.0	150	----
		Aroclor 1248, TCLP	12672-29-6	E688A	0.21 µg/L	0.2 µg/L	107	50.0	150	----
		Aroclor 1254, TCLP	11097-69-1	E688A	0.20 µg/L	0.2 µg/L	98.4	50.0	150	----
		Aroclor 1260, TCLP	11096-82-5	E688A	0.22 µg/L	0.2 µg/L	111	50.0	150	----
		Aroclor 1262, TCLP	37324-23-5	E688A	0.22 µg/L	0.2 µg/L	112	50.0	150	----
		Aroclor 1268, TCLP	11100-14-4	E688A	0.22 µg/L	0.2 µg/L	112	50.0	150	----
TCLP Extractables (QCLot: 787161)										
HA2200063-006	Anonymous	benzo(a)pyrene, TCLP	50-32-8	E644	0.46 µg/L	0.5263 µg/L	86.8	50.0	140	----
TCLP Metals (QCLot: 785205)										
WT2225504-001	Anonymous	arsenic, TCLP	7440-38-2	E444	9.6 mg/L	10 mg/L	96.1	50.0	140	----
		barium, TCLP	7440-39-3	E444	13.4 mg/L	12.5 mg/L	107	50.0	140	----
		boron, TCLP	7440-42-8	E444	9.42 mg/L	10 mg/L	94.2	50.0	140	----
		cadmium, TCLP	7440-43-9	E444	10.6 mg/L	10 mg/L	106	50.0	140	----
		chromium, TCLP	7440-47-3	E444	10.9 mg/L	10 mg/L	109	50.0	140	----
		lead, TCLP	7439-92-1	E444	10.3 mg/L	10 mg/L	103	50.0	140	----
		selenium, TCLP	7782-49-2	E444	10.5 mg/L	10 mg/L	105	50.0	140	----
		silver, TCLP	7440-22-4	E444	0.056 mg/L	0.1 mg/L	56.3	50.0	140	----
		uranium, TCLP	7440-61-1	E444	9.91 mg/L	10 mg/L	99.1	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
TCLP Metals (QCLot: 785247)										
WT2225406-001	Anonymous	mercury, TCLP	7439-97-6	E512	0.0028 mg/L	0.003 mg/L	91.7	50.0	140	----
TCLP VOCs (QCLot: 787594)										
WT2225466-001	Anonymous	benzene, TCLP	71-43-2	E615B	240 µg/L	250 µg/L	96.2	50.0	140	----
		carbon tetrachloride, TCLP	56-23-5	E615B	238 µg/L	250 µg/L	95.0	50.0	140	----
		chlorobenzene, TCLP	108-90-7	E615B	231 µg/L	250 µg/L	92.5	50.0	140	----
		chloroform, TCLP	67-66-3	E615B	240 µg/L	250 µg/L	97.6	50.0	140	----
		dichlorobenzene, 1,2-, TCLP	95-50-1	E615B	230 µg/L	250 µg/L	92.1	50.0	140	----
		dichlorobenzene, 1,4-, TCLP	106-46-7	E615B	224 µg/L	250 µg/L	89.6	50.0	140	----
		dichloroethane, 1,2-, TCLP	107-06-2	E615B	256 µg/L	250 µg/L	102	50.0	140	----
		dichloroethylene, 1,1-, TCLP	75-35-4	E615B	234 µg/L	250 µg/L	93.7	50.0	140	----
		dichloromethane, TCLP	75-09-2	E615B	260 µg/L	250 µg/L	103	50.0	140	----
		methyl ethyl ketone [MEK], TCLP	78-93-3	E615B	280 µg/L	250 µg/L	114	50.0	140	----
		tetrachloroethylene, TCLP	127-18-4	E615B	221 µg/L	250 µg/L	88.5	50.0	140	----
		trichloroethylene, TCLP	79-01-6	E615B	234 µg/L	250 µg/L	93.5	50.0	140	----
		vinyl chloride, TCLP	75-01-4	E615B	253 µg/L	250 µg/L	101	50.0	140	----



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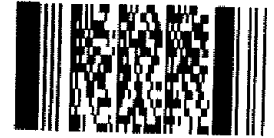
Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20

Page

Environmental Division
Waterloo
Work Order Reference
WT2225551



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Reports / Recipients: Select Report Format: PDF, EXCEL, EDD (DIGITAL)
Turnaround Time (TAT) Requested: Routine [R] if received by 3pm M-F - no surcharges apply
Analysis Request: Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
ALS Sample #: S-12579218-121622-CM-TCLP
Date: 16-Dec-22
Time: 16:20
Sample Type: SOIL
SAMPLE RECEIPT DETAILS: Cooling Method: ICE
Submission Comments identified on Sample Receipt Notification: YES
Cooler Custody Seals Intact: YES
Sample Custody Seals Intact: YES

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