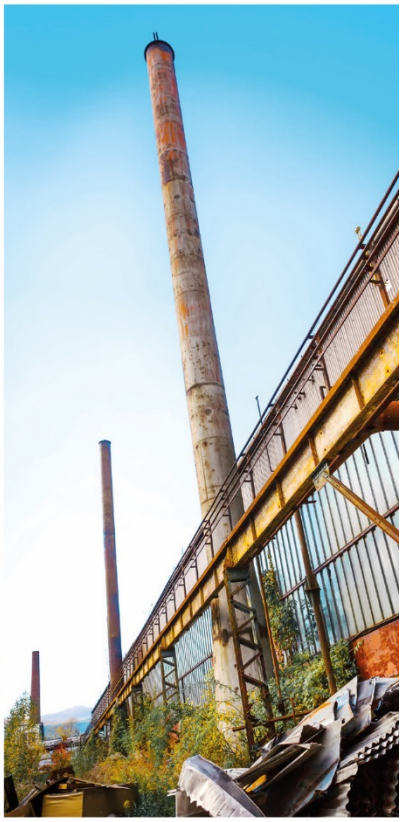
Phase Two Environmental Site Assessment

Parking Lot and Access Roads
(Proposed 1Door4Care Facility -
Portion of Children's Hospital of Eastern Ontario Campus)
401 and 407 Smyth Road
Ottawa, Ontario

IO Project Number. 182-OCTC



Infrastructure Ontario

Executive Summary

GHD Limited (GHD) was retained by Infrastructure Ontario (IO) to complete a Phase Two Environmental Site Assessment (ESA) at the Children's Hospital of Eastern Ontario property (CHEO property) addressed as 401 and 407 Smyth Road in Ottawa, Ontario. The Phase Two ESA was undertaken to document environmental conditions at the CHEO property in support of the proposed development of a 1Door4Care Facility, a children's treatment centre, in a portion of the CHEO property. The proposed development area is currently comprised of a parking lot and access roads (herein collectively referred to as the Site or Property) and has been owned by CHEO since 1967.

The Site consists of approximately 2.6 hectares (6.4 acres) of land which is generally developed as a parking lot associated with the CHEO property, and also includes a portion of Ring Road and access driveways to the CHEO property. Ring Road is oriented along the southern and western boundaries of the Site. No enclosed buildings are currently located on the Site, however, a concrete awning for the main entrance to the CHEO property, as well as the entrance to the Max Keeping Wing, are located on the Site along the eastern Site boundary. A historical building most recently used for offices and meeting rooms, associated with the hospital, was located along the northwestern portion of the Site from approximately 1945 until it was demolished in approximately 2012. The Site was utilized as rural, agricultural land and potentially residential land from as early as 1945 (date of earliest available photograph) to 1967 when the land was purchased by CHEO. Limited information was available regarding the historic use of the building that was located on the northwestern portion of the Site. Based on the size and orientation of the buildings on the Site and adjacent property to the west of the Site, the building may have been used for residential purposes. Since 1972, the Site has been developed as a parking lot with associated access roads for the adjacent CHEO property.

The Phase Two ESA was conducted in general accordance with the requirements of Ontario Regulation 153/04, as amended (O. Reg. 153/04). The objective of this Phase Two ESA was to ensure that the areas of potential environmental concern (APECs) identified during the 2020 Phase One ESA[1] was investigated for each applicable contaminant of concern (COC), in each applicable medium. In addition, the Phase Two ESA included an investigation of general soil and groundwater quality in a portion of the Site for due diligence purposes and to support the proposed future development of a 1Door4Care Facility, a children's treatment centre at the Site.

GHD understands that the children's treatment center will include a licensed daycare and school (under the Education Act) as part of the development. The intended future use of the development will be considered as "Institutional Land Use" under O. Reg. 153/04. Therefore, a Record of Site Condition (RSC) will not be required to support the development to a similar sensitive land use, in accordance with O. Reg. 153/04. IO should consider contacting the City of Ottawa to confirm their requirements for an RSC as a condition of development approval.

This investigation was undertaken concurrently with a geotechnical investigation and hydrogeological investigations that were performed by GHD, and are documented under separate

[1] "*Phase One Environmental Site Assessment, Parking Lot and Access Roads (Portion of Children's Hospital of Eastern Ontario [CHEO]), 401 and 407 Smyth Road, Ottawa, Ontario*" dated June 5, 2020.

cover. This report summarizes the investigative activities completed as part of the Phase Two ESA and presents all data generated therefrom.

Based on the results of the 2020 Phase One ESA, the following APECs were identified.

- APEC #1 – Fuel Storage Tanks on adjacent CHEO property (off-Site; north and northeast of the Property)
- APEC #2 – Potential Fill Material of Unknown Quality (on-Site)

Phase Two ESA investigative activities were performed between November 19, 2019, and May 1, 2020. A total of seventeen (17) boreholes were advanced at the Site, ten (10) of which were instrumented as groundwater monitoring wells [seven (7) shallow overburden and three (3) bedrock]. The Phase Two ESA was undertaken in conjunction with geotechnical and hydrogeological investigations. Soil and groundwater samples were submitted for laboratory analysis of one or more of the following: metal including mercury (Hg), hexavalent chromium Cr (VI) and inorganics, polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbon fractions F_1 through F_4 (PHCs F_1-F_4), organochlorine (OC) pesticides, polychlorinated biphenyls (PCBs) and volatile organic compounds (VOCs).

Shale bedrock was present at less than 2 metres below the ground surface (mBGS) across the majority of the Site. As such, the applicable standards were determined to be the Table 7: Generic Site Condition Standards for Shallow Soils Coarse Textured soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Uses (MECP Table 7 Standards[2]).

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

1. The Phase Two ESA included the advancement of fourteen (14) boreholes, ten (10) of which were instrumented as groundwater monitoring wells [four (4) shallow overburden wells and remaining three (3) as nested well locations with shallow overburden and bedrock wells], field screening, and the collection and laboratory analysis of soil and groundwater samples.
2. The subsurface materials and soils encountered during the field activities included a surficial layer of topsoil or asphaltic pavement underlain by fill material primarily consisting of silty sand/sandy silt or sand and gravel. The fill material was further underlain by native silty sand and shale bedrock of Georgian Bay Formation. The shale was generally observed to be dark grey in colour, thinly laminated, completely weathered at its surface and became gradually fresh with depth.
3. On December 13, 2019, Water level measurements indicate that shallow groundwater was present in the overburden monitoring wells at depths ranging from 1.44 mBGS (MW4S) to 5.05 mBGS (MW1). Water level measurements indicate that groundwater was present in the bedrock wells at depths ranging from 3.12 mBGS (MW4D) to 5.00 mBGS (MW2D). Shallow groundwater at the Site flows in a northerly direction and bedrock groundwater at the Site flows in a westerly direction.
4. Based on a review of the soil analytical data, hexane was detected marginally above its MECP Table 7 Standard (2.8 micrograms per gram [ug/g]) at MW1 (3.1 ug/g) at a depth between

[2] *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, dated April 15, 2011.

2.29 to 2.90 mBGS, in native gravely sand. The source of the hexane detection is unknown. Cobalt was marginally detected above its MECP Table 7 Standard (22 ug/g) at BH14 (23 ug/g) at a depth between 1.52 to 1.80 mBGS, in weathered shale. The source of the cobalt detection is unknown, however, given that the concentration is just marginally above Table 7 Standard, and in native materials, it could be naturally occurring. PHC F_1 was detected above the MECP Table 7 Standard at two locations (BH12 and BH13) at depths between 1.52 mBGS and 2.50 mBGS. The source of PHC F_1 detection is unknown. Both samples were close to, or within, the weathered shale encountered at these boreholes and could be indicative of shales with an elevated organic content containing traces of naturally occurring petroleum. PHC F_3 was detected above its MECP Table 7 Standard at location BH13 in the surface fill material. Gravimetric heavy hydrocarbons (F_4G) were detected above its MECP Table 7 Standard at five locations (BH11, BH12, BH13, BH14, and MW5) in the surface fill. The PHC F_3 and F_4G detections were just below the asphalt surface and are likely attributable to the asphalt used as a paving material in the parking lot area at the Site. Except for MW2S, electrical conductivity (EC) and sodium adsorption ratio (SAR) were detected across all boreholes locations and at variable depths above their applicable MECP Table 7 Standard. The elevated concentrations of these analytes are attributable to the use of road de-icing salt applied to keep the Site free of snow and/or ice. GHD has reviewed the recently released amendments to O. Reg. 153/04, related to the use of road de-icing salt to keep a property safe under conditions of snow and ice. It is GHD's opinion that if a RSC is filed in the future, the exemption outlined in the revised Section 49.1 would apply to the Site, and that a Qualified Professional could conclude that the Standards for EC and SAR in the soil are "deemed to be met" for the purposes of RSC filing. However, the project team should continue to consider the presence of EC and SAR in their evaluation of soil disposal options for excess soil.

5. Based on a review of groundwater analytical data, benzene was detected above its MECP Table 7 Standard (0.5 micrograms per litre [ug/L]) at monitoring well MW2D (1.5 ug/L). The well was screened within the shale encountered at a depth between eight and eleven metres below. The source of the benzene detection is unknown. Sodium was detected above its MECP Table 7 Standard (1,800,000 ug/L) at seven monitoring wells (MW1, MW2S, MW2D, MW3S, MW4D, MW5, and MW10). Chloride was detected above its MECP Table 7 Standard at all eight sampling locations (MW1, MW2S, MW2D, MW3S, MW3D, MW4D, MW5, and MW10). The elevated concentrations of these analytes are attributable to the use of road de-icing salt applied to keep the Site free of snow and/or ice. It is GHD's opinion that if a RSC is filed in the future, the exemption outlined in the revised Section 49.1 would apply to the Site, and that a Qualified Professional could conclude that the Standards for sodium and chloride in groundwater are "deemed to be met" for the purposes of RSC filing.

Table of Contents

Executive Summary i

1. Introduction 1
   - 1.1 Site Description 1
   - 1.2 Property Ownership 2
   - 1.3 Current and Proposed Future Uses 2
   - 1.4 Applicable Site Condition Standards 2
2. Background Information 4
   - 2.1 Physical Setting 4
   - 2.2 Past Investigations 5
3. Scope of Investigation 5
   - 3.1 Overview of Site Investigation 5
   - 3.2 Media Investigated 6
   - 3.3 Phase One Conceptual Site Model 7
   - 3.4 Deviations from the Sampling and Analysis Plan 8
   - 3.5 Impediments 8
4. Investigation Methods 9
   - 4.1 General 9
   - 4.2 Drilling 10
   - 4.3 Soil Sampling 11
   - 4.4 Field Screening Measurements 11
   - 4.5 Groundwater Monitoring Well Installation 12
   - 4.6 Groundwater Field Measurements of Water Quality Parameters 13
   - 4.7 Groundwater Sampling 13
     - 4.7.1 Single Well Response Tests 13
   - 4.8 Sediment Sampling 15
   - 4.9 Analytical Testing 15
   - 4.10 Residue Management Procedures 15
   - 4.11 Elevation Surveying 15
   - 4.12 Quality Assurance and Quality Control Measures 15
5. Review and Evaluation 16
   - 5.1 Geology 16
     - 5.1.1 Ground Cover 17
     - 5.1.2 Fill/Disturbed Soil 17
     - 5.1.3 Silty Sand 17
     - 5.1.4 Shale Bedrock 18

5.2 Groundwater Elevations and Flow Direction 18
5.3 Groundwater Hydraulic Gradients 19
5.4 Soil Texture 19
5.5 Soil Field Screening 20
5.6 Soil Quality 20
5.7 Groundwater Quality 22
5.8 Sediment Quality 22
5.9 Quality Assurance and Quality Control Results 23
5.10 Phase Two Conceptual Site Model 23
6. Conclusions 26
7. References 28

Figure Index

Figure 1	Site Location Map
Figure 2	Site Plan and Investigative Locations
Figure 3	Phase One Conceptual Site Model
Figure 4	Geologic Cross-Section Locations
Figure 5a	Geologic Cross-Section A-A'
Figure 5b	Geologic Cross-Section B-B'
Figure 6a	Groundwater Elevation Contours – Shallow Wells (December 13, 2019)
Figure 6b	Groundwater Elevation Contours – Deep Wells (December 13, 2019)
Figure 7a	Lateral Extent of PHC Soil Impacts
Figure 7b	Lateral Extent of EC and SAR Soil Impacts
Figure 7c	Lateral Extent of Hexane Soil Impacts
Figure 7d	Vertical Extent of PHC Soil Impacts Cross Section A-A’
Figure 7e	Vertical Extent of PHC Soil Impacts Cross Section B-B’
Figure 7f	Vertical Extent of EC and SAR Soil Impacts Cross Section A-A’
Figure 7g	Vertical Extent of EC and SAR Soil Impacts Cross Section B-B’
Figure 7h	Vertical Extent of Hexane Soil Impacts Cross Section A-A’
Figure 8a	Lateral Extent of Groundwater Benzene Impacts
Figure 8b	Lateral Extent of Groundwater Sodium and Chloride Impacts
Figure 8c	Vertical Extent of Groundwater Benzene Impacts B-B’
Figure 8d	Vertical Extent of Groundwater Sodium and Chloride Impacts A-A’
Figure 8e	Vertical Extent of Groundwater Sodium and Chloride Impacts B-B’

Table Index

Table 1	Summary of Sampling Locations and Chemical Analysis
Table 2	Summary of Monitoring Well and Borehole Details
Table 3	Summary of Well Sampling Data
Table 4	Summary of Groundwater Level Measurements
Table 5	Summary of Soil Analytical Results
Table 6	Summary of Soil Max Concentrations
Table 7	Summary of Groundwater Analytical Results
Table 8	Summary of Groundwater Max Concentrations

Appendix Index

Appendix A	Sampling and Analysis Plan
Appendix B	Stratigraphic and Instrumentation Logs
Appendix C	Analytical Data Verification & Laboratory Certificates of Analysis
Appendix D	Waste Disposal Records

1. Introduction

GHD Limited (GHD) was retained by Infrastructure Ontario (IO) to complete a Phase Two Environmental Site Assessment (ESA) at the Children's Hospital of Eastern Ontario property (CHEO property) addressed as 401 and 407 Smyth Road in Ottawa, Ontario. The Phase Two ESA was undertaken to document environmental conditions at the CHEO property in support of the proposed development of a 1Door4Care Facility, a children's treatment centre, in a portion of the CHEO property. The proposed development area is currently comprised of a parking lot and access roads (herein collectively referred to as the Site or Property) and has been owned by CHEO since 1967. A Site Location Map and a Site Plan and Investigative Locations are provided on **Figure 1** and **Figure 2**, respectively.

GHD previously completed Site reconnaissance as part of the Phase One ESA of the Site on November 19, 2019. The results of GHD's Phase One ESA are summarized in a report entitled:

"Phase One Environmental Site Assessment, Parking Lot and Access Roads (Portion of Children's Hospital of Eastern Ontario [CHEO]), 401 and 407 Smyth Road, Ottawa, Ontario", dated June 5, 2020 (2020 Phase One ESA).

The Phase Two ESA was conducted in general accordance with the requirements of Ontario Regulation 153/04, as amended (O. Reg. 153/04). The objective of this Phase Two ESA was to ensure that the areas of potential environmental concern (APECs) identified during the 2020 Phase One ESA was investigated for each applicable contaminant of concern (COC), in each applicable medium. In addition, the Phase Two ESA included an investigation of general soil and groundwater quality in a portion of the Site for due diligence purposes and support the proposed future development of a 1Door4Care Facility, a children's treatment centre at the Site. It is GHD's understanding that a Record of Site Condition (RSC) is not being completed at this time. This investigation was undertaken concurrently with a geotechnical investigation and hydrogeological investigations that were performed by GHD, and are documented under separate cover. This report summarizes the investigative activities completed as part of the Phase Two ESA and presents all data generated therefrom.

This report has been prepared for the use of IO and may not be relied upon by others without the written consent of GHD.

1.1 Site Description

The Site consists of approximately 2.6 hectares (6.4 acres) of land which is generally developed as a parking lot associated with the CHEO property, and also includes a portion of Ring Road and access driveways to the CHEO property. Ring Road is oriented along the southern and western boundaries of the Site. No enclosed buildings are currently located on the Site, however, a concrete awning for the main entrance to the CHEO property, as well as the entrance to the Max Keeping Wing, are located on the Site along the eastern Site boundary. A historical building most recently used for offices and meeting rooms, associated with the hospital, was located along the northwestern portion of the Site from approximately 1945 until it was demolished in approximately 2012.

The Site was utilized as rural, agricultural land and potentially residential land from as early as 1945 (date of earliest available photograph) to 1967 when the land was purchased by CHEO. Limited information was available regarding the historic use of the building that was located on the northwestern portion of the Site. Based on the size and orientation of the buildings on the Site and adjacent property to the west of the Site, the building may have been used for residential purposes. Since 1972, the Site has been developed as a parking lot with associated access roads for the adjacent CHEO property.

1.2 Property Ownership

The Site has been owned by CHEO since 1967. Contact information for the Property owner representative is listed below.

Mr. Trevor Stewart, P. Eng.
Chief Building and Planning Officer – Facilities Management
Children's Hospital of Eastern Ontario
401 Smyth Road, Ottawa, Ontario, K1H 8L1
(613) 737-6184
TrStewart@cheo.on.ca

Contact information for Infrastructure Ontario representative is listed below.

Mr. Garry Pringle, P. Geo
Environmental Specialist – Infrastructure Ontario
1 Dundas Street West, Suite 2000
Toronto, Ontario, N1G 4Y2
(647) 264-3365
Garry.Pringle@infrastructureontario.ca

1.3 Current and Proposed Future Uses

As discussed in **Section 1.1**, information reviewed as part of the 2020 Phase One ESA indicates that since 1972, the Site has been developed as a parking lot with associated access roads for the adjacent CHEO property. As such, the current Site land use is "Institutional Land Use" in accordance with O. Reg 153/04.

GHD understands that the above investigations are requested to support the proposed development of a 1Door4Care Facility, a children's treatment centre, which is also considered as "Institutional Land Use".

1.4 Applicable Site Condition Standards

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 – Residential/Parkland/Institutional or Industrial/Commercial/Community

The proposed use of the Property is for the development of the 1Door4Care Facility, a children's treatment centre. The preliminary development concept for the 1Door4Care Facility includes a six-storey healthcare building with one level of underground basement. The anticipated development in the surrounding area of the building footprint may also include parking, internal road network, and underground utilities.

GHD understands that the children's treatment center will also include a licensed daycare and school (under the Education Act) as part of the development. The intended future use of the development will be considered as "Institutional Land Use" under O. Reg. 153/04. Therefore, a Record of Site Condition (RSC) will not be required to support the development to a similar sensitive land use, in accordance with O. Reg. 153/04.

Restoration of groundwater quality – Potable/Non-potable

Potable drinking water to the CHEO property is supplied via the municipal water distribution system by the City of Ottawa. The City source for the potable water supply is the Ottawa River. Based on a review of the Source Protection Areas in the Ottawa Region, the Site is located within the Mississippi-Rideau Source Protection Region[3]; however; no sensitive source water protection areas are mapped within a 250 metre radius of the Site. Therefore, a non-potable groundwater condition would apply at the Site.

Restoration depth – Full Depth or Stratified Depth

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

Soil texture

As part of a separate geotechnical investigation completed by GHD for the Site, grain size analyses consisting of sieve and hydrometer testing were carried out on eleven (11) select soil samples extracted from the boreholes. Based on the results of the grain size analysis, the soils contained between 47 to 62 percent of particles greater than 75 microns in mean diameter, and would be classified as coarse-textured soils. Refer to **Section 6.4** for additional details.

Shallow Soil Property

A shallow soil property is a property for which 1/3 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. Based on observations during the field investigation and review of borehole logs, out of the fourteen (14) boreholes advanced on the property, shale bedrock was present at less than 2 metres below the ground surface (mBGS) in nine (9) boreholes with the exception of MW1, MW2S/D, MW3S/D, MW10 and BH12.

As such, the Site is considered to be a shallow soil property as 1/3 or more of the area consists of soil less than 2 metres in depth.

[3] Mississippi-Rideau Source Protection Region (https://www.mrsourcewater.ca/en/library/maps/29-clickable-map-tool)

Within 30 m of a Water Body

The Site does not include nor is adjacent to a water body, nor is it located within 30 metres of a water body.

The generic 2011 MECP Standards are not applicable if the Site is considered to be an environmentally sensitive area. The conditions for the above are presented in Section 41 of O. Reg. 153/04. Based on these conditions, the generic Standards are considered applicable as:

- The Site is (i) not located within an area of natural significance, (ii) does not include or is not adjacent to an area of natural significance, nor is it a part of such area, and, (iii) does not include land that is within 30 metres of an area of natural significance nor is part of such an area. GHD reviewed the Ontario Ministry of Natural Resources' – "Natural Heritage Information Centre" database to identify areas registered as Areas of Natural or Scientific Interest (ANSI) within a 1-kilometre radius of the Site. No records were identified in the ANSI database for properties located within a 1-kilometre radius of the Site. Based on this, there are no areas of natural significance within 30 metres of the Site.
- The soil pH ranged between 6.1 and 8.4 for the soil samples analyzed, which is between 5 and 9 for surface soils, and between 5 and 11 for subsurface soils, as outlined in Section 41 of O. Reg. 153/04. Only one soil sample MW10 (2.29-2.90m) showed an elevated pH of 11.9 out of the 40 soil samples (including field duplicate samples) analyzed for pH.

Based on the above, the applicable standards were determined to be the Table 7: Generic Site Condition Standards for Shallow Soils Coarse Textured soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Uses (MECP Table 7 Standards).

2. Background Information

2.1 Physical Setting

Overall, the Site is relatively flat. The elevation of the Site is approximately 80 metres above mean sea level (mASL). The Site is located in a predominantly mixed-use neighborhood (residential and institutional) in the southeastern portion of Ottawa, Ontario. The following buildings or features were located on the properties surrounding the Site.

North: The Site is bounded to the north by the CHEO building and further to the north by a motel (Rotel; 411 Smyth Road) and buildings associated with the Ottawa General Hospital.

East: The Site is bounded to the east by the CHEO property and paved parking area associated with the CHEO property and the Ottawa General Hospital.

South: The Site is bounded to the south by Smyth Road, vacant land and further to the south by a residential subdivision.

West: The Site is bounded to the west by a residential subdivision.

Persons familiar with the Site were not aware of any known environmental impacts to the Site attributable to operations conducted on adjacent lands. Facility personnel reported that two

underground storage tanks (USTs) are located adjacent to the east of the CHEO building and two aboveground storage tanks (ASTs) located in the interior of the CHEO building, all of which store diesel fuel for the hospital's emergency generators. The USTs are located approximately 80 metres northeast of the eastern Property boundary.

2.2 Past Investigations

Based on communication with representatives of CHEO and IO, no previous environmental reports have been prepared for the Site. IO provided a previous geotechnical investigation report, which was prepared by Golder Associates dated March 2016, in support of the construction of a new building at the CHEO property.

Based on a review of the geotechnical logs for boreholes advanced to the north of the Site on the CHEO property, fill soils were encountered from the surface ranging to 0.2 mBGS to 0.4 mBGS. The fill generally consists of sandy silt to sandy clayey silt with varying amounts of gravel. Glacial till was observed beneath the fill material consisting of a heterogeneous mixture of gravel, cobbles, and boulders in a matrix of sandy silt to silt sand. The glacial till extended to depths of approximately 0.5 to 1.2 mBGS, and was underlain by the shale bedrock.

Excerpts of the previous geotechnical investigation report are provided in the 2020 Phase One ESA.

3. Scope of Investigation

3.1 Overview of Site Investigation

The objective of the Phase Two ESA was to investigate the APECs identified during the 2020 Phase One ESA for each applicable COC, in each applicable medium. The APECs identified during the 2020 Phase One ESA (shown on **Figure 3**) are as follows.

APEC #1 – Fuel Storage Tanks on adjacent CHEO property (off-Site; north and northeast of the Property)

According to Site representatives, two underground storage tanks (USTs) are located approximately 80 metres northeast of the eastern Property boundary on the eastern adjacent CHEO property and two aboveground storage tanks (ASTs) are located inside the adjacent CHEO building to the north of the Site. All of these tanks store diesel fuel for the hospital's emergency generators. Based on the ERIS database records, one of the USTs is 15,000-litres in capacity and was installed in 2009. No information was available regarding the size and installation date of the other UST. Based on the inferred direction of groundwater flow to the north-northwest, the USTs and ASTs are likely located hydraulically crossgradient or downgradient in relation to the Site.

The current operation of fuel storage tanks is included in O. Reg. 153/04 as a PCA (#28 - Gasoline and Associated Products Storage in Fixed Tanks) for the Site. Based on the proximity of these fuel storage tanks to the Site, these off-Site PCAs were identified as having the potential to contribute to an APEC (**APEC #1**) on the eastern portion of the Site.

APEC #2 – Potential Fill Material of Unknown Quality (on-Site)

Based on a review of historical information, fill material was potentially placed on the Site in the location of the former building footprint located along the northwestern portion of the Site, in the location of the current gravel parking lot. No information was available regarding the construction of use of the building, or if the building had basements. Additionally, no information was available to GHD regarding the demolition of the former structure or whether material generated during the demolition of the structure remained on-Site.

In accordance with O. Reg. 153/04 the potential importation of fill material was identified as a PCA (#30 - Importation of Fill Material of Unknown Quality) and has been included as an APEC (**APEC #2**) in the area of the former building.

It is GHDs understanding that a Record of Site Condition (RSC) is not being contemplated by IO or CHEO at this time as the proposed development is not considered to be a change in use to a more sensitive use. IO should consider contacting the City of Ottawa to confirm their requirements for an RSC as a condition of development approval.

GHD developed a Sampling and Analysis Plan (SAP) to investigate the above APECs. Additional sample analysis was conducted to support the future development of the Site and potential disposal of excavated soils associated with the construction of the proposed building.

The SAP includes the advancement of boreholes, collection of soil samples, instrumentation of monitoring wells, collection of groundwater samples, and surveying of investigative locations. The complete SAP is included in **Appendix A**.

3.2 Media Investigated

As part of the Phase Two ESA, GHD completed investigations into media identified as potentially being affected by the PCAs in the 2020 Phase One ESA. Soil and groundwater were identified as the only potentially contaminated media in the 2020 Phase One ESA to document general environmental conditions at the Site. Sediment sampling was not completed as no water bodies are present at the Site.

The following field investigation activities were completed by GHD during this Phase Two ESA to characterize the Site.

- Completion of an electromagnetic (EM) survey using Geonics EM-31 Sensors (report submitted as an appendix with the Preliminary Geotechnical Report).
- Advancement of fourteen (14) boreholes at the Site to depths varying between approximately 2.3 mBGS and 11.4 mBGS. It should be noted that three of these locations were advanced as nested monitoring wells (MW2S/D, MW3S/D, and MW4S/D).
- Installation of seven (7) shallow overburden and three (3) bedrock groundwater monitoring wells.
- Field screening of soil and groundwater samples.
- Collection of groundwater levels from the installed monitoring wells to determine the depth to the groundwater table and inferred groundwater flow direction.

- Laboratory analysis of 40 soil samples (including two [2] field duplicate samples) from the borehole locations, and eight (8) groundwater samples (including one [1] field duplicate) from the newly-installed monitoring well locations.

Soil and groundwater samples were submitted for laboratory analysis of one or more of the following: metal including mercury (Hg), hexavalent chromium Cr (VI) and inorganics, polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbon fractions F_1 through F_4 (PHCs F_1-F_4), organochlorine (OC) pesticides, polychlorinated biphenyls (PCBs) and volatile organic compounds (VOCs).

A summary of sampling locations and chemical analysis is presented in **Table 1**. The locations of all investigative locations are provided on **Figure 2**.

3.3 Phase One Conceptual Site Model

The Phase One Conceptual Site Model, as presented in the 2020 Phase One ESA, is provided below.

The Site is located in a predominantly mixed-use neighborhood (residential and institutional) in the southeastern portion of Ottawa, Ontario.

The Site consists of approximately 2.6 hectares (6.4 acres) of land majority of which is generally developed as a parking lot associated with the CHEO property, and also includes a portion of Ring Road and access driveways to the CHEO property. Ring Road is oriented along the southern and western boundaries of the Site. No enclosed buildings are currently located on the Site, however, a concrete awning for the main entrance to the CHEO property, as well as the entrance to the Max Keeping Wing, are located on the Site along the eastern Site boundary. Based on a review of historical documents, the majority of the Site was developed as a parking lot in 1972 associated with the original construction of CHEO property. A historical building used for offices and meeting rooms associated with the hospital, was located along the northwestern portion of the Site from approximately 1945 until it was demolished in approximately 2012. No information was available regarding the original purpose of the building.

Overall, the Site is relatively flat. The elevation of the Site is approximately 80 mASL. Regional topography generally slopes north-northwest towards the Rideau River located approximately 1.1 km to the west of the Site. Overburden in the vicinity of the Site consists of glacial till (pre-Champlain sea deposits), comprised predominately of a heterogeneous mixture of material ranging from clay to large boulders, generally sandy, and graded downwards into unmodified. The bedrock geology in the vicinity of the Site consists of grey shale, sandy shale, with some dolomitic layers of the Paleozoic Carlsbad Formation.

Based on a review of the geotechnical logs for boreholes advanced to the north of the Site on the CHEO property, fill soils were encountered from the surface ranging to 0.2 to 0.4 mBGS. The fill generally consists of sandy silt to sandy clayey silt with varying amounts of gravel. Glacial till was observed beneath the fill material consisting of a heterogeneous mixture of gravel, cobbles, and boulders in a matrix of sandy silt to silt sand. The glacial till extended to depths of approximately 0.5 to 1.2 mBGS, and was underlain by the shale bedrock.

Based on the definition of area of natural significance provided in O. Reg. 153/04 the Site is not considered to be an area of natural significance.

Based on the results of the 2020 Phase One ESA, two USTs were identified approximately 80 metres northeast of the eastern Property boundary on the eastern adjacent CHEO property and two ASTs are located inside the adjacent CHEO building to the north of the Site, all which store diesel fuel for the hospital's emergency generators proximity of fuel storage tanks to the Site, these off-Site PCAs were identified as having the potential to contribute to an APEC (**APEC #1**) on the eastern portion of the Site.

Based on a review of historical information, fill material was potentially placed on the Site in the location of the former building footprint located along the northwestern portion of the Site, in the location of the current gravel parking lot. In accordance with O. Reg. 153/04 the potential importation of fill material was identified as a PCA (#30 - Importation of Fill Material of Unknown Quality) and has been included as an APEC (**APEC #2**) in the area of the former building.

3.4 Deviations from the Sampling and Analysis Plan

Minor deviations to the Phase Two ESA Sampling and Analysis Plan (SAP; presented in **Appendix A**) was required to address the field conditions encountered as described below:

- Several locations were adjusted slightly based on field conditions (i.e., due to the presence of buried utilities).
- Due to the shallow depth of the fill material identified at certain sampling locations, generally only one sample of fill material was collected and submitted for chemical analysis, instead of two samples from fill material as identified in the SAP. Additionally, due to the shallow shale bedrock present across the majority of the Site, only one sample of native soils was collected and submitted for chemical analysis at certain locations, instead of the two native samples as identified in the SAP.
- According to the SAP, one quality control/quality assurance (QA/QC) sample (i.e., field duplicates) was to be submitted for every ten samples. Only two (2) field duplicate samples were collected for the 38 soil samples collected across the Site.
- At the request of IO, monitoring wells were installed in boreholes MW9 and MW10 which were initially proposed as boreholes. Monitoring wells MW4S and MW9 were dry at the time of groundwater monitoring events.

3.5 Impediments

No impediments were encountered during the Phase Two ESA.

4. Investigation Methods

4.1 General

The following investigative activities were undertaken as part of the Phase Two ESA between November 19, 2019, and May 1, 2020. Investigations completed included the following, as described in detail in the following subsections:

- Electromagnetic survey.
- Advancement of boreholes.
- Installation of groundwater monitoring wells.
- Collection of field screening measurements and observations.
- Collection and laboratory analysis of soil and groundwater samples.
- Groundwater field measurements of water quality parameters.
- Collection of groundwater level measurements.
- Single Well Response Tests.
- Quality assurance and quality control measures.
- Elevation surveying.
- Investigation derived waste management.

The field investigation activities were completed in accordance with MECP protocols, GHD's SOPs, and standard industry practice.

Prior to completing the investigation activities, a Site-specific Health and Safety Plan (HASP) was prepared. The purpose of the HASP was to provide specific guidelines and established procedures for the protection of personnel performing the Site investigation activities. In addition, the appropriate public utility notifications were completed and private utility locators were retained (multiVIEW Locates, Inc.) to assist with on-Site utility clearances.

Geophysical Survey

On behalf of GHD, multiVIEW Locates, Inc. completed a Geophysical Survey using Geonics EM-31 Sensors & Software 250 MHz Ground Penetrating Radar (GPR) on November 19, 2019, December 16 and 17, 2019, and January 24, 2020, to assess for the presence of buried metallic objects and/or other buried infrastructure within the study area. The EM-31 equipment maps geological variations, groundwater contaminants or any subsurface feature associated with changes in the ground conductivity using an electromagnetic inductive technique. GPR uses radar pulses to image the subsurface.

The geophysical survey results are summarized below.

- A zone of elevated apparent conductivity was identified along the staff parking lot access road, which may indicate that unusual soil conditions may exist.

- A zone of elevated in-phase data was identified surrounding the statue in the parking area, which may indicate the existence of buried metal objects. Buried electrical servicing the light posts and metal mesh in the concrete may exist surrounding the statue present in the parking area.
- The electromagnetic responses in the immediate vicinity of aboveground structures, metal objects produced a fairly broad halo of elevated values around these features. These can include signs, lights, curbs, concrete, manholes, catch basins, picnic tables and any other surface feature on site during the survey.
- Snow covered parts of the Site during the survey and ground level surface objects may have not been recorded.
- Elevated apparent conductivity readings were observed in pedestrian pathways, parking areas, and roadways, which may have been caused by the annual application of high volumes of ice/road salt.
- Thirty-two (32) GPR linear responses potentially related to buried utilities and piping.
- Twelve (12) FDEM linear responses potentially related to metallic buried utilities and piping.
- Four (4) FDEM responses potentially related to small buried metallic objects.
- Four (4) GPR responses potentially related to small buried objects.

multiVIEW recommended intrusive testing of the interpreted anomalous zone to verify the source of these responses.

4.2 Drilling

Drilling and monitoring well installation activities were completed between November 26 and December 4, 2019. Profile Drilling Inc. (Profile), a MECP-licensed drilling contractor, was retained by GHD to complete all drilling activities. Profile used a Dietrich D-50 track-mounted drill rig to advance and/or instrument the boreholes/monitoring wells at the Site. A total of fourteen (14) boreholes were advanced at the Site, ten (10) of which were instrumented as groundwater monitoring wells [four (4) shallow overburden wells and the remaining three (3) as nested well locations with shallow overburden and bedrock wells]. The Phase Two ESA was undertaken in conjunction with geotechnical and hydrogeological investigations.

Overburden boreholes were advanced using hollow stem auger drilling methods. Soil core samples were collected using a 50-mm outside diameter stainless steel split-spoon sampler in 0.61 m (2-foot) sample lengths, generally spaced at 0.15 m (0.5-foot) intervals. The split spoon spacing and advancement was adjusted based on field conditions.

Rock coring was subsequently carried out in three boreholes (MW2D, MW3D, and MW4D) using diamond-drilling methods to confirm the presence of bedrock and to determine bedrock quality. Rock coring was carried out and extended to depths between approximately 5.7 and 7.3 m into the bedrock. Rock cores were obtained using a HQ sized core barrel, placed in core boxes, and visually examined and logged.

All non-dedicated sampling equipment was decontaminated with potable water and detergent between each sampling interval, and all down-hole drilling equipment (i.e., augers, rods, etc.) was decontaminated with potable water and detergent between each borehole location.

The rationale for each investigative location is provided in the SAP for the Phase Two ESA included as **Appendix A**.

4.3 Soil Sampling

Soil samples were collected from select boreholes using stainless steel split-spoon samplers. All soil samples were handled using disposable nitrile gloves, and a new set of gloves was donned between each sampling location. The soil samples were logged in general accordance with the Unified Soil Classification System (USCS), making special note of any visual or olfactory evidence of potential impacts. Prior to use, and between each borehole location, the sampling equipment was thoroughly cleaned using Alconox® soap and potable water rinse.

Soil samples obtained from each borehole were qualitatively and quantitatively screened for the presence of field evidence 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 photo-ionization detector (PID). Field screening methods are further described in **Section 4.4**, below.

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. A total of 40 soil samples including two (2) field duplicate soil samples were collected for chemical laboratory analysis. Soil samples were submitted for laboratory analysis of one or more of metal including mercury (Hg), hexavalent chromium Cr (VI) and inorganics, PAHs, PHCs F_1-F_4, OC pesticides, PCBs and VOCs.

Stratigraphic logs for all boreholes and monitoring wells advanced and installed by GHD are provided in **Appendix B**. The locations of all investigative locations are provided on **Figure 2**.

4.4 Field Screening Measurements

GHD field personnel screened the soil samples obtained from the boreholes for undifferentiated VOC vapour readings using a RAE Systems MiniRae 3000 PID. A portion of each soil core was placed into a clean plastic bag and sealed, at which point the sample was disturbed to allow VOC vapours to be released from the soil sample. Undifferentiated VOC vapour readings were then measured in the headspace inside the bag using the PID. Elevated undifferentiated VOC concentrations would typically be used, along with visual and olfactory field observations, in the selection of analytical soil sample intervals; however, no elevated undifferentiated VOC concentrations were observed during the Phase Two ESA borehole advancement activities.

Prior to use, the PID was inspected and calibrated according to the manufacturer's recommendations. Calibrating the MiniRae 3000 is a two-point process using "fresh air" and the standard reference gas (also known as span gas). 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) of known concentration (100 ppm) was used to set the second

point of reference. Once the reference point had been calibrated to 100 ppm, a “bump test” was completed by reapplying the reference gas to ensure that a reading of 100 ppm (within a 2% margin) was indicated by the PID.

The PID model specifications are listed below:

Detector:	Photoionization detector with 10.6 eV UV lamp
Measurement Accuracy (Isobutylene):	0 to 2,000 ppm: ±2 ppm or 10% of reading >2,000 ppm: ±20% of reading
Calibration:	Two-point field calibration of zero and standard reference gas

4.5 Groundwater Monitoring Well Installation

Groundwater monitoring wells were installed in ten (10) boreholes. Shallow overburden monitoring wells were installed in selected seven (7) boreholes (MW1, MW2S, MW3S, MW4S, MW5, MW9, and MW10) and bedrock monitoring wells were installed in three (3) boreholes (MW2D, MW3D, and MW4D) for long term groundwater level monitoring and for the hydrogeological study. The groundwater monitoring wells were installed as part of the concurrently completed geotechnical and hydrogeological assessment of the Site, but were also used to facilitate the collection of groundwater samples for laboratory analysis. Prior to use, and between each borehole location, all down-hole equipment was thoroughly cleaned using a hard-bristled scrub brush with detergent and potable water, followed by a potable water rinse.

The monitoring wells were installed using 108 mm ID outside diameter hollow stem augers in the overburden soils and by wireline coring in the bedrock advanced by the D-50 track-mounted drill rig. Each monitoring well was constructed with a 50 mm (2-inch) diameter, Schedule 40 polyvinyl chloride (PVC) riser and a No. 10 slot size well screen. A silica sand pack was placed in the annular space between the PVC screen pipe and the borehole annulus to approximately 0.3 m above the top of the screen. A bentonite seal and hole plug was installed in the remaining borehole annulus above the sand pack. Each riser was capped with an expandable J-plug. A protective flushmount casing with a concrete collar was placed around each monitoring well. The well completion details for each monitoring well is presented on the borehole logs provided in **Appendix B**.

In accordance with O. Reg. 903 (as amended), Profile registered the monitoring wells with the MECP. A summary of monitoring well completion details as instrumented by GHD during the Phase Two ESA, including ground surface, top of riser, and screened interval elevations, is provided in **Table 2**. The stratigraphic and instrumentation logs for these locations are provided in **Appendix B**. The locations of all investigative locations are provided on **Figure 2.**

The newly-installed monitoring wells were developed to achieve chemical equilibrium by removing a minimum of five well volumes, or until dry. Subsequent to development, the monitoring wells were allowed to stabilize for several weeks to allow sufficient recharge in advance of sampling. During well development activities, groundwater was removed from each monitoring well using dedicated polyethylene tubing fitted with a plastic Waterra™ foot valve.

4.6 Groundwater Field Measurements of Water Quality Parameters

In order to ensure that samples representative of on-Site groundwater conditions were obtained, each monitoring well was purged until stabilized immediately prior to sampling. The following protocol was followed during well purging activities:

- The groundwater monitoring wells were purged of a minimum of 5 to 10 well volumes using dedicated polyethylene tubing fitted with a plastic Waterra™ foot valve to remove the standing groundwater volume in the well. In the event that slow groundwater recharge conditions were encountered, the well was purged until dry and then allowed to recover prior to sample collection. Field measurements were not recorded during well development and purging activities.
- Field measurements of temperature, turbidity, pH, and electrical conductivity were recorded during groundwater sampling using a Horiba multi-parameter water quality meter. Stabilization was considered to be achieved when either field measurements for temperature, turbidity, and electrical conductivity were within a range of plus or minus 10 percent for consecutive readings, pH was within a range of 0.1 units for consecutive readings, and turbidity was below 5 NTU for consecutive readings, or a minimum of three (3) well volumes had been purged (or until the well was dry). Stabilization parameters are presented in **Table 3.**

No visual or olfactory evidence of impact was observed during the groundwater purging activities. The purged water was temporarily contained in 205-litre drums, pending off-Site disposal.

4.7 Groundwater Sampling

Groundwater samples were collected from the newly installed monitoring wells on January 2-3, 2020 and February 25-26, 2020.

After stabilization was achieved as described in **Section 4.6**, the monitoring wells were sampled using dedicated polyethylene tubing fitted with a plastic Waterra™ foot valve. Samples collected for metals parameters were field filtered using a 0.45-micron filter during sample collection.

Samples were collected in laboratory-supplied sample containers specific to the analytical parameters, stored in coolers chilled with ice and submitted under chain-of-custody protocol for analysis.

A total of nine groundwater samples (including a field duplicate) were collected from the newly-installed Site monitoring wells. The groundwater samples were submitted for laboratory analysis of one or more of the following parameters: VOCs, PHCs F_1-F_4, metals including Hg/Cr VI, OC Pesticides, general chemistry (conductivity, pH, chloride, and cyanide), and PAHs.

4.7.1 Single Well Response Tests

In-situ hydraulic response testing, referred to as single well response tests (SWRTs), were completed on all monitoring wells except for MW4S and MW9 as these were observed dry during both groundwater monitoring events. The results were used to estimate the horizontal hydraulic conductivity of the water bearing deposits underlying the Site.

Single well response tests involve the injection or removal of a known volume of water into/from the well and measuring the water level response in the well until it returns to static conditions (i.e., falling/rising head test). The results of the hydraulic testing were analyzed using the Bouwer and Rice (1976) and Hvorslev (1951) solutions for unconfined conditions using the software AQTESOLVTM. These solutions were used to determine the horizontal hydraulic conductivity of the geologic deposits within the immediate vicinity of the screened interval of each monitoring well.

The SWRT consists of falling head tests (slug tests), and rising head tests (recovery rests) as described in the sections below.

Falling Head Test (Slug Test)

The slug test involves causing a sudden change in water level in a well and measuring the water level response within that well. Water level change may be induced by suddenly injecting or emplacing a known quantity or "slug" into the well. The slug can be water or solid (stainless steel, polyvinyl chloride). A detailed description of the procedure is provided, as follows:

1. The static water level was determined prior to any testing of the well.
2. A datalogger, programmed to measure water pressure at an appropriate interval (e.g., 5 seconds), was installed in the well at a known depth.
3. A slug of known dimensions was set in place just above the static water level.
4. The slug was then released instantaneously until it was completely submerged in the water column.
5. After the initial positive displacement of the water column, water levels were monitored manually.
6. When the water level reached approximately 90 percent of the original observed (static) water level, the slug was then rapidly removed from the water column to initiate a "rising-head" test.

Rising Head Test (Recovery Test)

The recovery test involves causing a sudden change in water level in a well and measuring the water level response within that well. Water level change may be induced by suddenly removing a known quantity or "slug" out of the well. The slug is usually a stainless steel or polyvinyl chloride rod. A detailed description of the procedure is provided, as follows:

1. The static water level was determined prior to any testing of the well.
2. A datalogger, programmed to measure water pressure at an appropriate interval (e.g., 5 seconds), was installed in the well at a known depth.
3. A slug of known dimensions was set in place just below the static water level and water level allowed to return to static level.
4. The slug was then removed instantaneously until it completely emerged from the water column.
5. After the initial negative displacement of the water column, water levels were monitored manually.

6. When the water level reached approximately 90 percent of the original observed (static) water level, the test is complete.

Based on the results from the SWRTs, the hydraulic conductivity (K_h) of the sand and clay observed in MW1 ranged from 1.76 x 10^{-4} centimeters per second (cm/s) to 4.75 x 10^{-4} cm/s (geometric mean 2.89 x 10^{-4} cm/s), and the hydraulic conductivity of the Shale/Silty Sand observed in other well locations ranged from 2.06 x 10^{-4} cm/s to 2.70 x 10^{-3} (geometric mean 3.04 x 10^{-4} cm/s) representative of the aquifer. The results of the SWRTs are fully discussed in the hydrogeological assessment documented under separate cover.

4.8 Sediment Sampling

Sediment sampling was not completed during the Phase Two ESA as there were no water bodies on the Site.

4.9 Analytical Testing

Soil and groundwater samples were submitted to AGAT Laboratories, a Canadian Association of Laboratory Accreditation (CALA) accredited analytical laboratory.

A GHD chemist reviewed analytical data and prepared Analytical Data Verification per O. Reg 153/04 guidance. Copies of all the analytical laboratory reports and the Analytical Data Verification Memorandum are provided in **Appendix C**.

4.10 Residue Management Procedures

Soil cuttings, equipment decontamination washwater, and purged groundwater were containerized in 205-litre metal drums were disposed by Tomilson Environmental Services on May 1, 2020 at Tomilson's waste disposal facility located at 5555 Power Road in Ottawa, Ontario. Waste Disposal Record is presented in **Appendix D**.

4.11 Elevation Surveying

On December 17, 2019, J.D Barnes Limited field personnel completed elevation surveying of the borehole and monitoring well locations. The ground surface elevation of each borehole and the ground surface and top of riser pipe elevation of each monitoring well were surveyed[4]. The UTM coordinates, elevations, and depth of the boreholes and monitoring wells are summarized in **Table 2** (summary of monitoring well completion details) and **Table 4** (summary of groundwater level measurements).

4.12 Quality Assurance and Quality Control Measures

A Quality Assurance/Quality Control (QA/QC) program was implemented during the program to ensure quality data was generated.

4 Elevations were established using GPS equipment and transformed to CVGD-1928 Datum using the federal HT2.0 transformation model.

Samples were collected in laboratory-supplied sampling containers with the appropriate preservative in accordance with O. Reg. 153/04.

Samples were submitted under chain-of-custody protocol to an analytical laboratory for chemical analysis. From the time of collection to the time of submission to the laboratory, samples were stored on ice in a cooler to maintain sample integrity.

To validate the field analysis, QA/ QC samples were submitted for soil and groundwater samples and each parameter submitted for laboratory analysis. A trip blank was also submitted for soil samples with volatile analysis in a liquid medium (i.e., VOCs in groundwater or methanol-vial soil samples). GHD's QA/ QC field samples collected are summarized in **Table 1**. QC samples were also analyzed by the laboratory as required by their analytical methods.

Analytical results received by GHD were reviewed and validated. The validation program consists of reviewing the following parameters:

- Sample holding times.
- Surrogate spike recoveries.
- Method blank analysis.
- Matrix spike and matrix spike duplicate recoveries.
- Laboratory control sample analysis.
- Calibration verification sample analysis.
- Laboratory duplicate analysis.
- Field duplicate analysis.
- Trip blank analysis.

5. Review and Evaluation

The results of the Site investigation activities are described in the following sections. The soil and groundwater sampling locations are shown on **Figure 2**.

5.1 Geology

Based on the Quaternary Geology of Ontario Map[5], the Site is situated in an area of fluvial deposits consisting of gravel, sand, silt, and clay deposited on modern flood plains.

Based on the Bedrock Geology of Ontario Map[6], the bedrock at this Site is an upper Ordovician aged shale of the Georgian Bay Formation and Blue Mountain/Billings Formations. The Georgian Bay Formation gradationally overlies the Blue Mountain Formation and consists of interbedded grey to dark grey shale and fossiliferous calcareous siltstone to limestone. In eastern Ontario, the Blue

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

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

Mountain Formation is equivalent to the Billings Formation and consists of dark blue-grey to brown to black shale with thin interbeds of limestone or calcareous siltstone. Review of the bedrock topography map and MECP well records for the Site, the depth to the bedrock surface at this Site is anticipated to range from 0.8 mBGS to 3.6 mBGS or at elevations between 75 and 80 m.

In general, based on the above geological mapping, the subject Site is situated in an area of fluvial deposits consisting of gravel, sand, silt, and clay soils followed by shale bedrock. The interpreted geological conditions at the Site are based on the review of the stratigraphic logs from the Phase Two ESA. Stratigraphic logs for boreholes and monitoring wells advanced and installed by GHD as part of the Phase Two ESA are provided in **Appendix B**.

Two geologic cross-sections were developed for the Site. The locations of the geologic cross-sections are shown on **Figure 4**. Geologic cross-sections A-A' and B-B' are shown on **Figures 5a** and **5b**, respectively. These cross-sections depict the generalized extent of the topsoil, native soil strata, and the groundwater table. The elevations of the extents of the geologic units are referenced to the elevations established above in **Section 4.11**. The elevations are displayed on the cross-sections in metres.

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

5.1.1 Ground Cover

Topsoil - A surficial layer of topsoil was encountered at the ground surface of boreholes MW1, MW2S/D, MW3S/D, and MW4, which were advanced within grassed areas. The thickness of the topsoil layer ranged from approximately 75 to 100 millimetres (mm). The classification of this material was based solely on visual and textural examination. It should be noted that the thickness of topsoil can vary between borehole locations.

Asphalt - Boreholes MW5, BH11, BH12, BH13, and BH14 have been drilled on the asphaltic pavement of the parking areas and encountered an asphalt surface layer. The thickness of the asphalt ranged from 50 to 75 mm.

5.1.2 Fill/Disturbed Soil

Earth fill/disturbed soil was encountered in all boreholes at the ground surface or below the topsoil/asphalt, and extended to a depth varying from approximately 0.4 mBGS to 1.7 mBGS. The fill composition is in general heterogeneous, consisting of silty sand/sandy silt or sand and gravel. Rootlets, wood pieces, and asphalt fragments were observed within the fill layer. Also, the upper portion of the fill layer was observed to be frozen. It is possible that the thickness and quality of the fill (presence of deleterious materials or organics) can vary between borehole locations.

5.1.3 Silty Sand

A silty sand deposit was encountered beneath the fill layer in all boreholes and extended to the bedrock surface. The silty sand deposit was found to contain gravel, clay and cobble fragments.

Standard Penetration Test (SPT) ‘N’ values obtained within this deposit varied between 8 blows per 0.3 m of penetration and greater than 50 blows per 0.075 m of penetration (refusal), indicating a

loose to very dense relative density, but generally compact to dense condition. The elevated blow counts are generally occurring near the bedrock surface.

The moisture content of the samples collected varied generally between 4 and 30 percent by weight. The low moisture content is likely due to the presence of gravel or cobble fragments within the tested sand samples, and the high moisture content of 28 and 30 percent is likely due to the high percentage of clay within the silty sand deposit.

Gradation analysis was completed on ten selected samples of the silty sand deposit. The results are tabulated in **Section 5.4**.

5.1.4 Shale Bedrock

Bedrock was encountered in all boreholes. The shale bedrock was cored in three boreholes (MW2D, MW3D, and MW4D) to verify the presence of bedrock and assess the bedrock quality. The boreholes within the completely weathered zones were advanced by auguring and SPT sampling for variable thicknesses, but generally less than 2 m before reaching refusal. From the recovered rock cores, the bedrock was visually identified as the Georgian Bay Formation. The shale was generally observed to be dark grey in color, thinly laminated, completely weathered at its surface and became gradually fresh with depth. This formation consists generally of a dark grey weak to moderately strong shale interbedded with light grey color strong to very strong limestone and siltstone layer.

5.2 Groundwater Elevations and Flow Direction

Groundwater level measurements were collected between December 5, 2019, and May 1, 2020, using a calibrated Solinst electronic oil/water interface probe. The depth to groundwater was measured relative to a specific reference point in the monitoring well (i.e., the top of the monitoring well riser pipe). Based on the survey information of the top of riser pipe elevation, the groundwater elevation was calculated by subtracting the water level measurement from the reference point elevation. Groundwater level measurements and groundwater elevation results are provided in **Table 4**.

The groundwater elevations collected on December 13, 2019, were used to prepare contour maps for the Site, which are presented as **Figures 6a and 6b**. Water level measurements indicate that shallow groundwater was present in the overburden monitoring wells at depths ranging from 1.44 mBGS (MW4S) to 5.05 mBGS (MW1). Water level measurements indicate that groundwater was present in the bedrock wells at depths ranging from 3.12 mBGS (MW4D) to 5.00 mBGS (MW2D).

The groundwater contour map for the Site developed using the shallow monitoring wells indicates groundwater elevations varying from approximately 77.37 mAMSL (MW10) to 78.83 mAMSL (MW4S). A review of **Figure 6a** indicates that shallow groundwater at the Site flows in a northerly direction. The groundwater contour map for the Site developed using the bedrock monitoring wells indicates groundwater elevations varying from approximately 77.21 mAMSL (MW3D) to 77.44 mAMSL (MW2D). A review of **Figure 6b** indicates that bedrock groundwater at the Site flows in a westerly direction.

Fluctuations in the groundwater table may occur at the Site due to seasonal weather cycles; however, GHD did not identify any other significant influences contributing to temporal groundwater

variability. As discussed in **Section 4.1**, GHD contacted public infrastructure owners to determine the presence of subsurface utilities (i.e., pipes, cables, sewers, etc.) at the Site. As multiple utilities were identified at the Site, the groundwater table may be influenced by subsurface utilities at the Site.

The presence of non-aqueous phase liquid (NAPL) was investigated through the use of an oil/water interface probe at each monitoring well location. NAPL was not encountered at any of the monitoring well locations.

5.3 Groundwater Hydraulic Gradients

Based on the groundwater level measurements, the horizontal hydraulic gradient was determined as follows using the shallow groundwater monitoring wells:

$$i_h = \frac{(h_2 - h_1)}{L}$$

Where:

i_h = horizontal hydraulic gradient (unit less)

$(h_2 – h_1)$ = difference in the hydraulic head with groundwater flow path (m) using the December 13, 2019 groundwater elevation data

L = horizontal distance between wells (m)

Using the shallow monitoring wells MW4S and MW1:

$$i_h = \frac{78.83\ m - 77.50\ m}{47\ m} = \frac{1.33\ m}{47\ m} = 0.028\ m/m$$

As part of the hydrogeological assessment completed by GHD for the Site[7], SWRTs were completed at multiple wells at the Site to estimate the hydraulic conductivity of the various stratigraphy units.

Based on the results from the SWRTs, the hydraulic conductivity of the sand and clay observed in MW1 ranged from 1.76×10^{-4} cm/s to 4.75×10^{-4} cm/s (geometric mean 2.89×10^{-4} cm/s), and the hydraulic conductivity of the Shale/Silty Sand observed in other well locations ranged from 2.06×10^{-4} cm/s to 2.70×10^{-3} (geometric mean 3.04×10^{-4} cm/s) representative of the aquifer.

5.4 Soil Texture

During a geotechnical investigation at the Site completed by GHD, (the results of which are documented under separate cover[8]), Grain size analyses consisting of sieve and hydrometer testing

[7] Preliminary Hydrogeological Investigation, Children's Hospital of Eastern Ontario Campus, 401 and 407 Smyth Road, Ottawa, Ontario.

[8] Preliminary Geotechnical Investigation, Children's Hospital of Eastern Ontario Campus, 401 and 407 Smyth Road, Ottawa, Ontario.

were carried out on eleven (11) select soil samples extracted from the boreholes. The obtained results are reported in the borehole logs and are tabulated in the following table.

Under Section 42 of O. Reg. 153/04, soil is considered medium and fine-textured if it contains 50% or more by mass particles that are smaller than 75 microns in mean diameter. Based on a review of the hydrometer and grain-size analysis, the soils at the Site consist of the following.

Borehole Identification	Depth (mBGS)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Fines Silt & Clay (%)
MW1	1.5-2.1 & 2.3-2.9	26	58	11	5	16
MW2S&D	1.5-2.1 & 2.3-2.9	32	48	13	7	20
MW3S&D	0.8-1.4	43	52	5		5
MW3S&D	2.3-2.9	16	59	17	8	25
MW4S&D	0.8-1.4	11	59	20	10	30
MW5	0.9-1.2 & 1.5-1.7	8	62	20	10	30
MW7	0.8-1.4	3	54	30	13	43
BH8	0.8-1.4	8	59	22	11	33
MW9	0.8-1.4 & 1.5-2.0	14	53	20	13	33
MW10	0.8-1.4	26	47	18	9	27
BH12	0.8-1.4 & 1.5-2.1	18	52	19	11	30

Based on the gradation test results, the tested soil sample of fill/disturbed layer can be classified as sand with gravel and silt (sand and gravel), and the tested soil samples of the native deposit can be classified as silty sand with gravel. Based on the results of the grain size analysis, the soils contained between 47 to 62 percent of particles greater than 75 microns in mean diameter, and would be classified as coarse-textured soils.

5.5 Soil Field Screening

During borehole advancement, GHD completed soil field screening of soil samples by collecting a separate aliquot of each sample placed in a sealed bag and allowing to equilibrate to ambient temperature. The atmosphere within the sealed bag was subsequently screened for the presence of organic vapours with a photoionization detector, and documenting any visual or olfactory evidence of impacts as discussed in **Section 4.3**. There were no observations of elevated PID readings (i.e., greater than 25 ppm) during the Phase Two ESA. The results of the soil field screening and corresponding sample depth intervals are provided on the stratigraphic and instrumentation logs are provided in **Appendix B**.

5.6 Soil Quality

A total of 40 soil samples (including two (2) field duplicates) were collected and submitted for chemical analysis of one or more of the following during the Phase Two ESA.

- VOCs
- PHC Fractions F_1 to F_4
- PAHs

- OC Pesticides
- PCBs
- Metals including mercury (Hg)/hexavalent chromium (Cr VI)
- General chemistry (conductivity, moisture, pH, Sodium Adsorption Ratio [SAR] and cyanide).

The above soil samples were collected to accurately characterize the environmental sensitivity of the Site and to ensure that soil quality had been investigated in the APECs. Additional analysis was performed to support the proposed development of the Site. The rationale for the soil sample locations, sample intervals, and the parameters sampled is detailed in the SAP, included as **Appendix A**.

A summary of sample locations and chemical analysis is provided in **Table 1**. The soil analytical data generated during the Phase Two ESA were assessed with respect to the MECP Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, and are provided in **Table 5**. A summary of the maximum soil concentration data is provided in **Table 6**.

- Hexane was detected marginally above its MECP Table 7 Standard (2.8 micrograms per gram [ug/g]) at MW1 (3.1 ug/g) at a depth between 2.29 to 2.90 mBGS, in native gravely sand. The source of the hexane detection is unknown.
- Cobalt was marginally detected above its MECP Table 7 Standard (22 ug/g) at BH14 (23 ug/g) at a depth between 1.52 to 1.80 mBGS, in weathered shale. The source of the cobalt detection is unknown, however, given that the concentration is just marginally above Table 7 Standard, and in native materials, it could be naturally occurring.
- PHC F_1 was detected above the MECP Table 7 Standard at two locations (BH12 and BH13) at depths between 1.52 mBGS and 2.50 mBGS. The source of PHC F_1 detection is unknown. Both samples were close to, or within, the weathered shale encountered at these boreholes and could be indicative of shales with an elevated organic content containing traces of naturally occurring petroleum. PHC F_3 was detected above its MECP Table 7 Standard at location BH13 in the surface fill material. Gravimetric heavy hydrocarbons (F_4G) were detected above its MECP Table 7 Standard at five locations (BH11, BH12, BH13, BH14, and MW5) in the surface fill. The PHC F_3 and F_4G detections were just below the asphalt surface and are likely attributable to the asphalt used as a paving material in the parking lot area at the Site.
- Except for MW2S, electrical conductivity (EC) and sodium adsorption ratio (SAR) were detected across all boreholes locations and at variable depths above their applicable MECP Table 7 Standard. The elevated concentrations of these analytes are attributable to the use of road de-icing salt applied to keep the Site free of snow and/or ice. GHD has reviewed the recently released amendments to O. Reg. 153/04, related to the use of road de-icing salt to keep a property safe under conditions of snow and ice. It is GHD's opinion that if a RSC is filed in the future, the exemption outlined in the revised Section 49.1 would apply to the Site, and that a Qualified Professional could conclude that the Standards for EC and SAR in the soil are "deemed to be met" for the purposes of RSC filing. However, the project team should continue to consider the presence of EC and SAR in their evaluation of soil disposal options for excess soil.

The remaining analyzed parameters were either not detected above the laboratory reporting limits, or were detected at concentrations below the Table 7 Standards.

5.7 Groundwater Quality

A total of sixteen (16) groundwater samples (including two (2) field duplicate) were collected during groundwater monitoring events on January 2-3, 2020 and February 25-26, 2020, and submitted for chemical analysis of one or more of the following during the Phase Two ESA:

- VOCs
- SVOCs
- PHC Fractions F_1 to F_4
- PAHs
- OC Pesticides
- PCBs
- Metals including mercury (Hg)/hexavalent chromium (Cr VI)
- General chemistry (chloride and cyanide).

A summary of sample locations and chemical analysis is provided in **Table 1**. The groundwater analytical data generated during the Phase Two ESA were assessed with respect to the MECP Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, and are provided in **Table 7**. A summary of the maximum groundwater concentration data is provided in **Table 8**.

- Benzene was detected above its MECP Table 7 Standard (0.5 micrograms per litre [ug/L]) at monitoring well MW2D (ranging from 1.5 ug/L to 1.9 ug/L). The well was screened within the shale encountered at a depth between eight and eleven metres below. Benzene was not found at other shallow locations or in the other deep wells. The source of the benzene detection is unknown.
- Sodium was detected above its MECP Table 7 Standard (1,800,000 ug/L) at seven monitoring wells (MW1, MW2S, MW2D, MW3S, MW4D, MW5, and MW10). Chloride was detected above its MECP Table 7 Standard at all eight sampling locations (MW1, MW2S, MW2D, MW3S, MW3D, MW4D, MW5, and MW10). The elevated concentrations of these analytes are attributable to the use of road de-icing salt applied to keep the Site free of snow and/or ice. It is GHD's opinion that if a RSC is filed in the future, the exemption outlined in the revised Section 49.1 would apply to the Site, and that a Qualified Professional could conclude that the Standards for sodium and chloride in groundwater are "deemed to be met" for the purposes of RSC filing.

The remaining analyzed parameters were either not detected above the laboratory reporting limits, or were detected at concentrations below the Table 7 Standards.

5.8 Sediment Quality

Sediment sampling was not completed during the Phase Two ESA as no surface water bodies are located on the Site.

5.9 Quality Assurance and Quality Control Results

To validate the field analysis, QA/ QC samples were submitted for soil and groundwater media and each parameter submitted for laboratory analysis. A total of three field duplicate samples (two (2) soil and one (1) groundwater) were analyzed during the Phase Two ESA. A trip blank was also submitted with soil samples for analysis of PHC F_1/VOC analysis. QC samples were also analyzed by the laboratory as required by their analytical methods.

Analytical results received by GHD were reviewed and validated. The validation program consists of reviewing the following parameters

- Sample holding times.
- Surrogate spike recoveries.
- Method blank analysis.
- Matrix spike and matrix spike duplicate recoveries.
- Laboratory control sample analysis.
- Calibration verification sample analysis.
- Laboratory duplicate analysis.
- Field duplicate analysis.
- Trip blank analysis.

Based on the results of the data quality assessment and validation, the results are considered suitable for their intended use with applicable qualifications.

5.10 Phase Two Conceptual Site Model

The Site consists of approximately 2.6 hectares (6.4 acres) of land which is generally developed as a parking lot associated with the CHEO property, and also includes a portion of Ring Road and access driveways to the CHEO property. Ring Road is oriented along the southern and western boundaries of the Site. No enclosed buildings are currently located on the Site, however, a concrete awning for the main entrance to the CHEO property, as well as the entrance to the Max Keeping Wing, are located on the Site along the eastern Site boundary. A historical building most recently used for offices and meeting rooms, associated with the hospital, was located along the northwestern portion of the Site from approximately 1945 until it was demolished in approximately 2012.

The Phase Two ESA was completed to document environmental conditions to support the potential construction of a new building at the Site. The Phase Two ESA was conducted in accordance with the requirements of O. Reg. 153/04. Phase Two ESA investigative activities were completed between November 19, 2019, and May 1, 2020.

- Electromagnetic survey.
- Advancement of boreholes.
- Installation of groundwater monitoring wells.

- Collection of field screening measurements and observations.
- Collection and laboratory analysis of soil and groundwater samples.
- Groundwater field measurements of water quality parameters.
- Collection of groundwater level measurements.
- Single Well Response Tests.
- Quality assurance and quality control measures.
- Elevation surveying.
- Investigation derived waste management.

A total of fourteen (14) boreholes were advanced at the Site, ten (10) of which were instrumented as groundwater monitoring wells [four (4) shallow overburden wells and the remaining three (3) as nested well locations with shallow overburden and bedrock wells]. The Phase Two ESA was undertaken in conjunction with geotechnical and hydrogeological investigations.

Soil and groundwater samples were submitted for laboratory analysis of one or more of the following: metal including mercury (Hg), hexavalent chromium Cr (VI) and inorganics, PAHs, PHCs F_1-F_4, OC pesticides, PCBs and VOCs.

During the field activities undertaken at the Site, the following subsurface materials and soils were encountered:

- ***Ground Cover –***Topsoil - A surficial layer of topsoil was encountered at the ground surface of boreholes MW1, MW2S/D, MW3S/D, and MW4, which were advanced within grassed areas. The thickness of the topsoil layer ranged from approximately 75 to 100 mm.

  Asphalt - Boreholes MW5, BH11, BH12, BH13, and BH14 have been drilled on the asphaltic pavement of the parking areas and encountered an asphalt surface layer. The thickness of the asphalt ranged from 50 to 75 mm.

- ***Fill/Disturbed Soil –*** Earth fill/disturbed soil was encountered in all boreholes at the ground surface or below the topsoil/asphalt, and extended to a depth varying from approximately 0.4 mBGS to 1.7 mBGS. The fill composition is in general heterogeneous, consisting of silty sand/sandy silt or sand and gravel. Rootlets, wood pieces, and asphalt fragments were observed within the fill layer.

- ***Silty Sand –*** A silty sand deposit was encountered beneath the fill layer in all boreholes and extended to the bedrock surface. The silty sand deposit was found to contain gravel, clay and cobble fragments.

- ***Shale Bedrock –*** Bedrock was encountered in all boreholes. The shale bedrock was cored in three boreholes (MW2D, MW3D, and MW4D) to verify the presence of bedrock and assess the bedrock quality. The shale was generally observed to be dark grey in color, thinly laminated, completely weathered at its surface and became gradually fresh with depth. This formation consists generally of a dark grey weak to moderately strong shale interbedded with light grey color strong to very strong limestone and siltstone layer.

Two geologic cross-sections were developed for the Site. The locations of the geologic cross-sections are shown on **Figure 4**. Geologic cross-sections A-A', and B-B' are shown on **Figure 5a** and **Figure 5b**, respectively.

The groundwater elevations collected on December 13, 2019, were used to prepare contour maps for the Site, which are presented as **Figures 6a and 6b**. Water level measurements indicate that shallow groundwater was present in the overburden monitoring wells at depths ranging from 1.44 mBGS (MW4S) to 5.05 mBGS (MW1). Water level measurements indicate that groundwater was present in the bedrock wells at depths ranging from 3.12 mBGS (MW4D) to 5.00 mBGS (MW2D). The groundwater contour map for the Site developed using the shallow monitoring wells indicates groundwater elevations varying from approximately 77.37 mAMSL (MW10) to 78.83 mAMSL (MW4S). A review of **Figure 6a** indicates that shallow groundwater at the Site flows in a northerly direction. The groundwater contour map for the Site developed using the bedrock monitoring wells indicates groundwater elevations varying from approximately 77.21 mAMSL (MW3D) to 77.44 mAMSL (MW2D). A review of **Figure 6b** indicates that bedrock groundwater at the Site flows in a westerly direction.

Fluctuations in the groundwater table may occur at the Site due to seasonal weather cycles; however, GHD did not identify any other significant influences contributing to temporal groundwater variability. As discussed in **Section 4.1**, GHD contacted public infrastructure owners to determine the presence of subsurface utilities (i.e., pipes, cables, sewers, etc.) at the Site. As multiple utilities were identified at the Site, the groundwater table may be influenced by subsurface utilities at the Site.

The soil analytical data generated during the Phase Two ESA were assessed with respect to the MECP Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, and are provided in **Table 5.**

- Hexane was detected marginally above its MECP Table 7 Standard (2.8 micrograms per gram [ug/g]) at MW1 (3.1 ug/g) at a depth between 2.29 to 2.90 mBGS in native gravely sand. The source of the hexane detection is unknown.
- Cobalt was marginally detected above its MECP Table 7 Standard (22 ug/g) at BH14 (23 ug/g) at a depth between 1.52 to 1.80 mBGS, in weathered shale. The source of the cobalt detection is unknown, however, given that the concentration is just marginally above Table 7 Standard, and in native materials, it could be naturally occurring.
- PHC F_1 was detected above the MECP Table 7 Standard at two locations (BH12 and BH13) at depths between 1.52 mBGS and 2.50 mBGS. The source of PHC F_1 detection is unknown. Both samples were close to, or within, the weathered shale encountered at these boreholes and could be indicative of shales with an elevated organic content containing traces of naturally occurring petroleum. PHC F_3 was detected above its MECP Table 7 Standard at location BH13 in the surface fill material. Gravimetric heavy hydrocarbons (F_4G) were detected above its MECP Table 7 Standard at five locations (BH11, BH12, BH13, BH14, and MW5) in the surface fill. The PHC F_3 and F_4G detections were just below the asphalt surface and are likely attributable to the asphalt used as a paving material in the parking lot area at the Site.
- Except for MW2S, electrical conductivity (EC) and sodium adsorption ratio (SAR) were detected across all boreholes locations and at variable depths above their applicable MECP Table 7

Standard. The elevated concentrations of these analytes are attributable to the use of road de-icing salt applied to keep the Site free of snow and/or ice. GHD has reviewed the recently released amendments to O. Reg. 153/04, related to the use of road de-icing salt to keep a property safe under conditions of snow and ice. It is GHD's opinion that the exemption outlined in the revised Section 49.1 would apply to the Site, and that a Qualified Professional could conclude that the Standards for EC and SAR in the soil are "deemed to be met" for the purposes of RSC filing. However, the project team should continue to consider the presence of EC and SAR in their evaluation of soil disposal options for excess soil.

The contaminants of concern in the soils are shown on **Figures 7a** through **7h**, respectively.

The groundwater analytical data generated during the Phase Two ESA were assessed with respect to the MECP Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition, and are provided in **Table 7**.

- Benzene was detected above its MECP Table 7 Standard (0.5 micrograms per litre [ug/L]) at monitoring well MW2D (ranging from 1.5 ug/L to 1.9 ug/L). The well was screened within the shale encountered at a depth between eight and eleven metres below. Benzene was not found at other shallow locations or in the other deep wells. The source of the benzene detection is unknown.
- Sodium was detected above its MECP Table 7 Standard (1,800,000 ug/L) at seven monitoring wells (MW1, MW2S, MW2D, MW3S, MW4D, MW5, and MW10). Chloride was detected above its MECP Table 7 Standard at all eight sampling locations (MW1, MW2S, MW2D, MW3S, MW3D, MW4D, MW5, and MW10). The elevated concentrations of these analytes are attributable to the use of road de-icing salt applied to keep the Site free of snow and/or ice. It is GHD's opinion that the exemption outlined in the revised Section 49.1 would apply to the Site, and that a Qualified Professional could conclude that the Standards for sodium and chloride in groundwater are "deemed to be met" for the purposes of RSC filing.

The contaminants of concern in the groundwater are shown on **Figures 8a** through **8e**, respectively. However, the extent of groundwater impacts appears to be localized. There is no evidence of migration across Property boundaries, either on to, or off the Site.

6. Conclusions

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

1. The Phase Two ESA included the advancement of fourteen (14) boreholes, ten (10) of which were instrumented as groundwater monitoring wells [four (4) shallow overburden wells and remaining three (3) as nested well locations with shallow overburden and bedrock wells], field screening, and the collection and laboratory analysis of soil and groundwater samples.
2. The subsurface materials and soils encountered during the field activities included a surficial layer of topsoil or asphaltic pavement underlain by fill material primarily consisting of silty sand/sandy silt or sand and gravel. The fill material was further underlain by native silty sand and shale bedrock of Georgian Bay Formation. The shale was generally observed to be dark

grey in colour, thinly laminated, completely weathered at its surface and became gradually fresh with depth.

3. On December 13, 2019, Water level measurements indicate that shallow groundwater was present in the overburden monitoring wells at depths ranging from 1.44 mBGS (MW4S) to 5.05 mBGS (MW1). Water level measurements indicate that groundwater was present in the bedrock wells at depths ranging from 3.12 mBGS (MW4D) to 5.00 mBGS (MW2D). Shallow groundwater at the Site flows in a northerly direction and bedrock groundwater at the Site flows in a westerly direction.

4. Based on a review of the soil analytical data, hexane was detected marginally above its MECP Table 7 Standard (2.8 ug/g) at MW1 (3.1 ug/g) at a depth between 2.29 to 2.90 mBGS in native gravely sand. The source of the hexane detection is unknown. Cobalt was marginally detected above its MECP Table 7 Standard (22 ug/g) at BH14 (23 ug/g) at a depth between 1.52 to 1.80 mBGS, in weathered shale. The source of the cobalt detection is unknown, however, given that the concentration is just marginally above Table 7 Standard, and in native materials, it could be naturally occurring. PHC F_1 was detected above the MECP Table 7 Standard at two locations (BH12 and BH13) at depths between 1.52 mBGS and 2.50 mBGS. The source of PHC F_1 detection is unknown. Both samples were close to, or within, the weathered shale encountered at these boreholes and could be indicative of shales with an elevated organic content containing traces of naturally occurring petroleum. PHC F_3 was detected above its MECP Table 7 Standard at location BH13 in the surface fill material. Gravimetric heavy hydrocarbons (F_4G) were detected above its MECP Table 7 Standard at five locations (BH11, BH12, BH13, BH14, and MW5) in the surface fill. The PHC F_3 and F_4G detections were just below the asphalt surface and are likely attributable to the asphalt used as a paving material in the parking lot area at the Site. Except for MW2S, electrical conductivity (EC) and sodium adsorption ratio (SAR) were detected across all boreholes locations and at variable depths above their applicable MECP Table 7 Standard. The elevated concentrations of these analytes are attributable to the use of road de-icing salt applied to keep the Site free of snow and/or ice. GHD has reviewed the recently released amendments to O. Reg. 153/04, related to the use of road de-icing salt to keep a property safe under conditions of snow and ice. It is GHD's opinion that if a RSC is filed in the future, the exemption outlined in the revised Section 49.1 would apply to the Site, and that a Qualified Professional could conclude that the Standards for EC and SAR in the soil are "deemed to be met" for the purposes of RSC filing. However, the project team should continue to consider the presence of EC and SAR in their evaluation of soil disposal options for excess soil.

5. Based on a review of groundwater analytical data, benzene was detected above its MECP Table 7 Standard (0.5 ug/L) at monitoring well MW2D (ranging from 1.5 ug/L to 1.9 ug/L). The well was screened within the shale encountered at a depth between eight and eleven metres below. Benzene was not found at other shallow locations or in the other deep wells. The source of the benzene detection is unknown. Sodium was detected above its MECP Table 7 Standard (1,800,000 ug/L) at seven monitoring wells (MW1, MW2S, MW2D, MW3S, MW4D, MW5, and MW10). Chloride was detected above its MECP Table 7 Standard at all eight sampling locations (MW1, MW2S, MW2D, MW3S, MW3D, MW4D, MW5, and MW10). The elevated concentrations of these analytes are attributable to the use of road de-icing salt applied to keep the Site free of snow and/or ice. It is GHD's opinion that if a RSC is filed in the

future, the exemption outlined in the revised Section 49.1 would apply to the Site, and that a Qualified Professional could conclude that the Standards for sodium and chloride in groundwater are “deemed to be met” for the purposes of RSC filing.

7. References

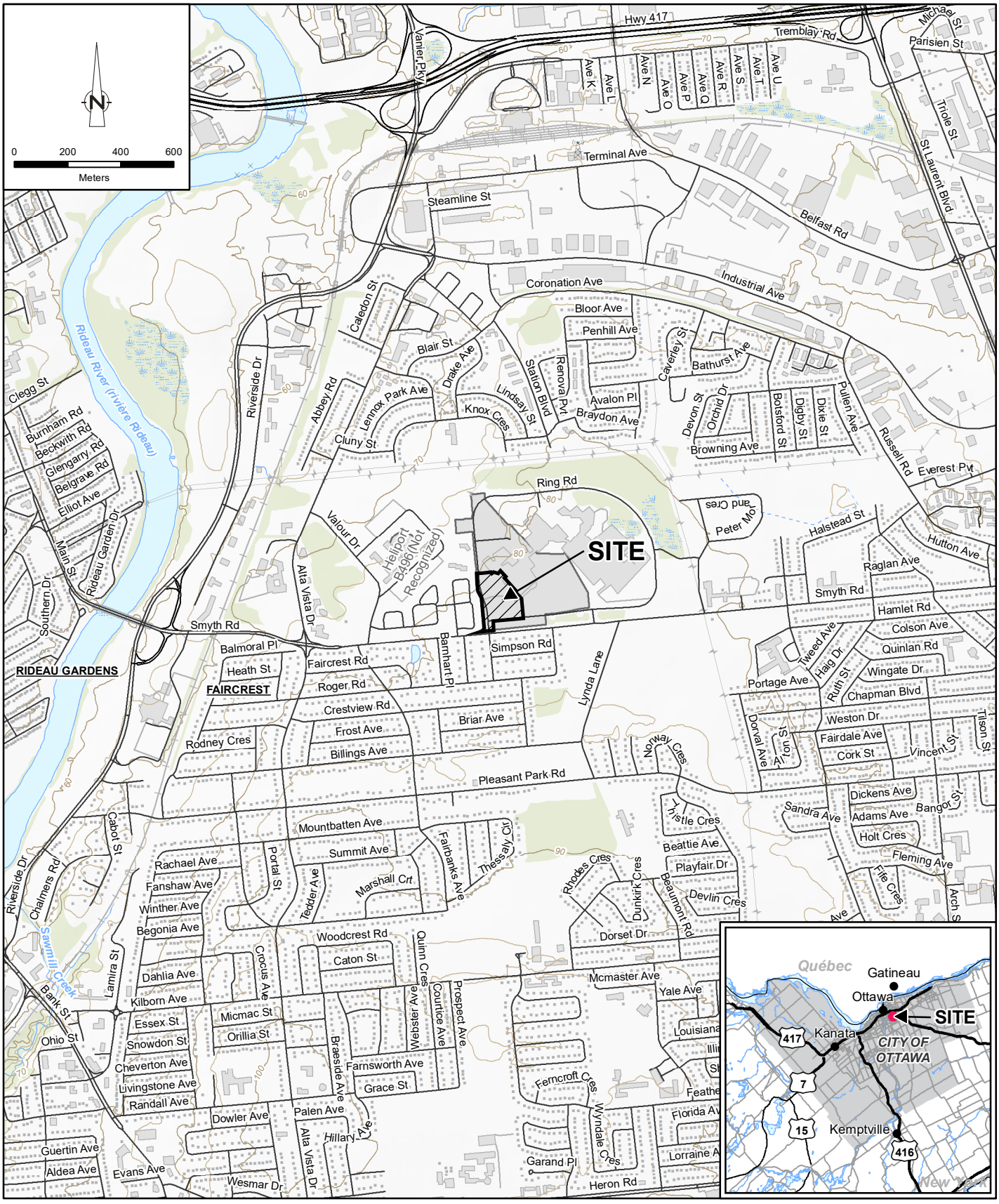
- Natural Resources Canada [map]. “The Atlas of Canada – Toporama”, governed by version 2.3 of the Open Government License – Canada. May 26, 2017. <http://atlas.nrcan.gc.ca/toporama/en/index.html>
- Chapman, L.J., and Putnam D.F., “Physiography of Southern Ontario”, Ontario Geological Survey, Map P.2715 (coloured). Scale 1:600,000, dated 1984.
- “Quaternary Geology of Ontario" [map]. Scale 1:1,000,000. OGS Earth Geoscience Data [computer files]. Sudbury, Ontario: Ontario Geological Survey & Ministry of Northern Development and Mines, 2010.
- “Bedrock Geology of Ontario” [map]. Scale: 1:1,000,000. Scale 1:1,000,000. OGS Earth Geoscience Data [computer files]. Sudbury, Ontario: Ontario Geological Survey & Ministry of Northern Development and Mines, 2010.
- Ontario Ministry of the Environment, *"Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act",* dated April 15, 2011
- Phase One Environmental Site Assessment, Parking Lot and Access Roads (Portion of Children’s Hospital of Eastern Ontario [CHEO]), 401 and 407 Smyth Road, Ottawa, Ontario

All of Which is Respectfully Submitted,

GHD

Aditya Khandekar

Warren Croft, P. Eng.



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CHILDREN'S HOSPITAL OF EASTERN ONTARIO
401 AND 407 SMYTH ROAD, OTTAWA, ONTARIO

11205379-01
Nov 19, 2019

SITE LOCATION MAP

FIGURE 1

GIS File: Q:\GIS\PROJECTS\11205000s\11205379\Layouts\001\11205379-01(001)GIS-WA001.mxd

0 10 20 30m

Coordinate System:
UTM ZONE 18 NAD83
METRES

N

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF
EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

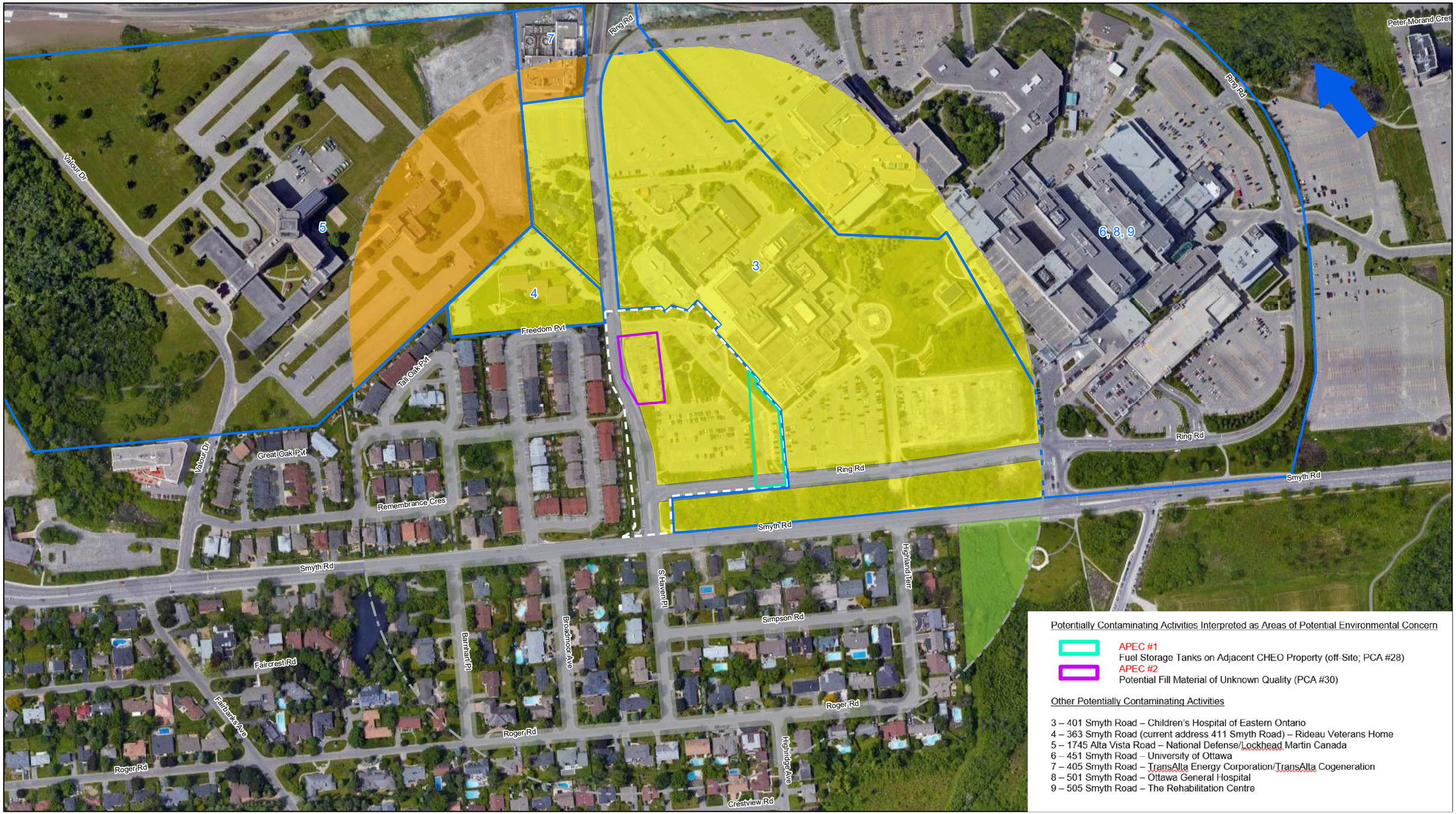
SITE PLAN AND
INVESTIGATIVE LOCATIONS

Project No. **11205379**
Date **January 2020**

FIGURE 2

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA001.DWG
Plot Date: 23 January 2020 3:11 PM

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Accessed: 2019



Potentially Contaminating Activities Interpreted as Areas of Potential Environmental Concern

APEC #1
Fuel Storage Tanks on Adjacent CHEO Property (off-Site; PCA #28)

APEC #2
Potential Fill Material of Unknown Quality (PCA #30)

Other Potentially Contaminating Activities

3 – 401 Smyth Road – Children's Hospital of Eastern Ontario
4 – 363 Smyth Road (current address 411 Smyth Road) – Rideau Veterans Home
5 – 1745 Alta Vista Road – National Defense/Lockhead Martin Canada
6 – 451 Smyth Road – University of Ottawa
7 – 405 Smyth Road – TransAlta Energy Corporation/TransAlta Cogeneration
8 – 501 Smyth Road – Ottawa General Hospital
9 – 505 Smyth Road – The Rehabilitation Centre

Source: Google Earth Imagery, Date: 06/08/2018

0 40 80 120
Meters

Coordinate System:
NAD 1983 UTM Zone 18N

Legend

- Potentially Contaminating Activity (PCA) Site Boundary
- Approx. Site Boundary
- Phase One Study Area (250 m Radius)
- Groundwater Flow Direction

Land Use

- Institutional
- Commercial
- Residential
- Parkland
- Road

CHILDREN'S HOSPITAL OF EASTERN ONTARIO
401 AND 407 SMYTH ROAD, OTTAWA, ONTARIO
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

11205379
Apr 8, 2020

PHASE ONE SITE CONCEPTUAL MODEL

FIGURE 3

GIS File: Q:\GIS\PROJECTS\11205000s\11205379\Layouts\201912_PHASE1ESA\11205379(201912_PHASE1EAS)GIS003.mxd

0 4 8 12m

Coordinate System:
UTM ZONE 18 NAD83
METRES

N

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF
EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

GEOLOGIC CROSS-SECTION LOCATIONS

Project No. **11205379**
Date **January 2020**

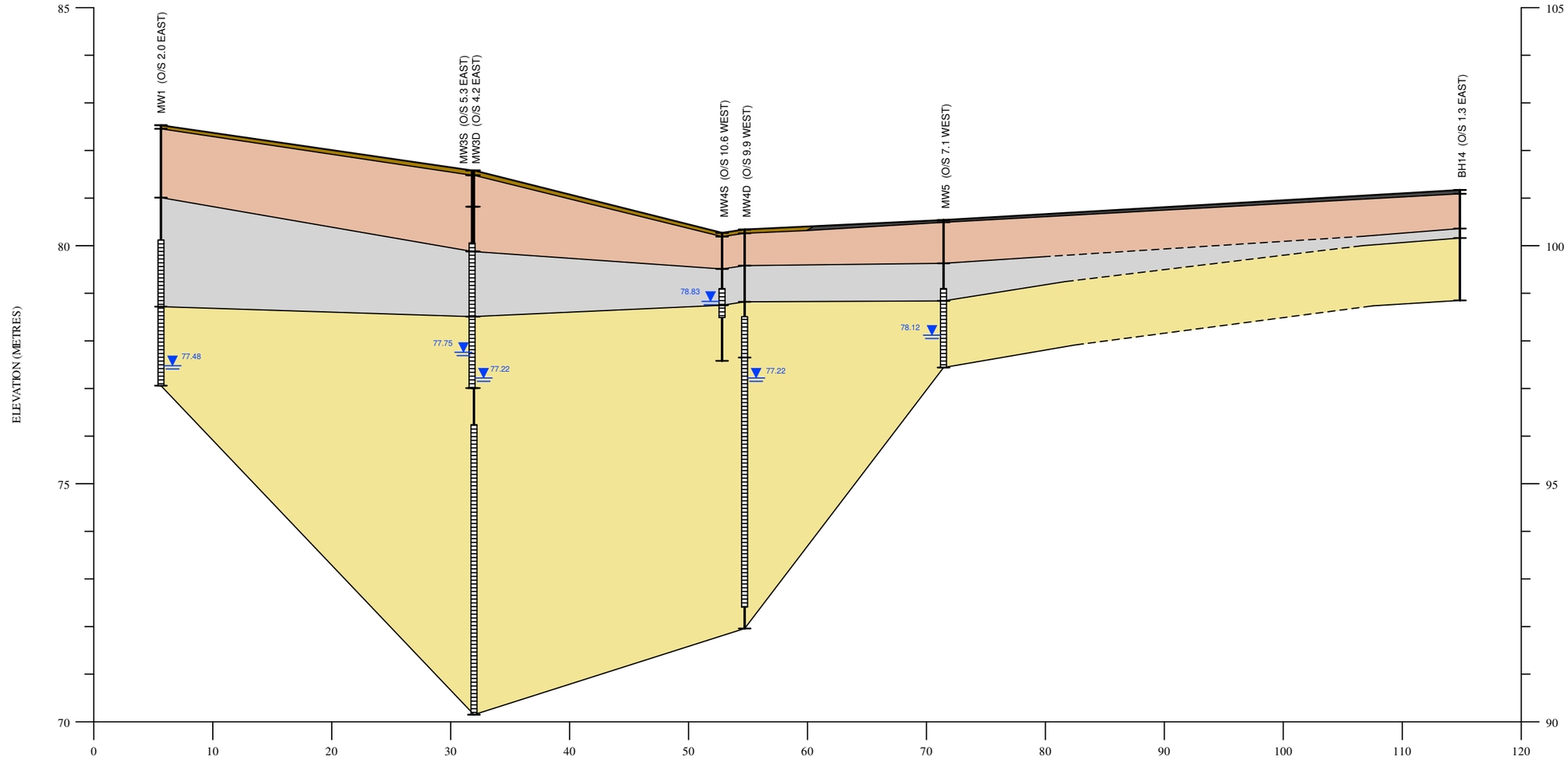
FIGURE 4

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA002.DWG
Plot Date: 23 January 2020 3:10 PM

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Accessed: 2019

A
NORTH

A'
SOUTH



SCALE: HORZ. 1:400m
VERT. 1:100m

LEGEND

MW1
WELL DESIGNATION
GROUND SURFACE
STRATIGRAPHIC BOUNDARY
GROUNDWATER ELEVATION (DECEMBER 13, 2019)
SCREENED INTERVAL

TOPSOIL
ASPHALT
FILL
SAND
SHALE

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

GEOLOGIC CROSS-SECTION A-A'

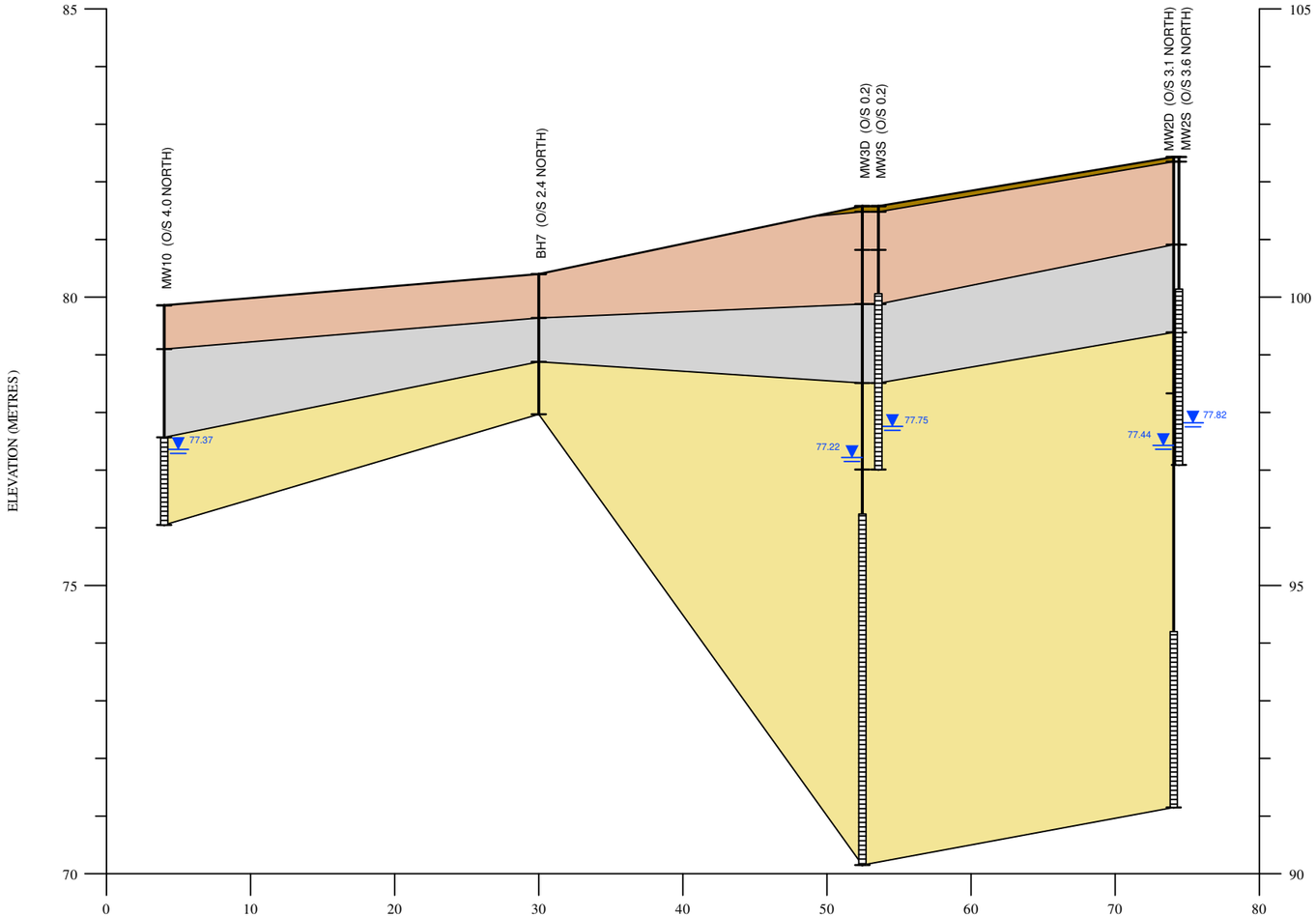
Project No. **11205379**
Date **January 2020**

FIGURE 5a

Filename: N:\CA\Toronto\Projects\66\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA002.DWG
Plot Date: 23 January 2020 3:19 PM

B
WEST

B'
EAST



SCALE: HORZ. 1:400m
VERT. 1:100m

LEGEND

MW10
WELL DESIGNATION
GROUND SURFACE
STRATIGRAPHIC BOUNDARY
GROUNDWATER ELEVATION (DECEMBER 13, 2019)
SCREENED INTERVAL

TOPSOIL
FILL
SAND
SHALE

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

GEOLOGIC CROSS-SECTION B-B'

Project No. **11205379**
Date **January 2020**

FIGURE 5b

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA002.DWG
Plot Date: 23 January 2020 4:25 PM

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Accessed: 2019

0 10 20 30m

Coordinate System:
UTM ZONE 18 NAD83
METRES

N

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF
EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

GROUNDWATER ELEVATION CONTOURS
SHALLOW WELLS - DECEMBER 13, 2019

Project No. **11205379**
Date **January 2020**

FIGURE 6a

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA003.DWG
Plot Date: 24 January 2020 7:20 AM

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Accessed: 2019

0 10 20 30m

Coordinate System:
UTM ZONE 18 NAD83
METRES

N

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF
EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

GROUNDWATER ELEVATION CONTOURS
DEEP WELLS - DECEMBER 13, 2019

Project No. **11205379**
Date **January 2020**

FIGURE 6b

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA004.DWG
Plot Date: 23 January 2020 3:16 PM

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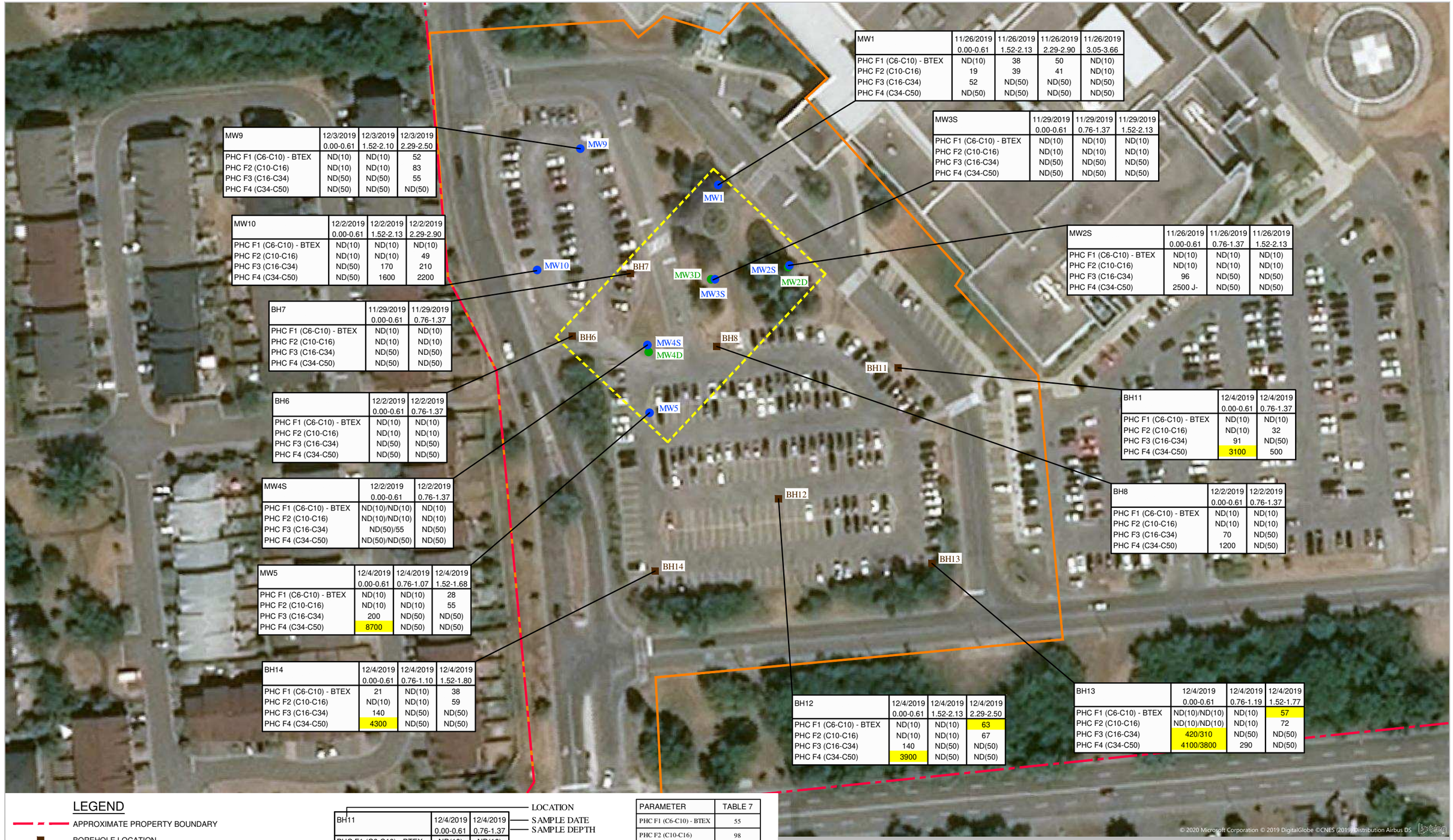

MW9	12/3/2019 0.00-0.61	12/3/2019 1.52-2.10	12/3/2019 2.29-2.50
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	52
PHC F2 (C10-C16)	ND(10)	ND(10)	83
PHC F3 (C16-C34)	ND(50)	ND(50)	55
PHC F4 (C34-C50)	ND(50)	ND(50)	ND(50)

MW1	11/26/2019 0.00-0.61	11/26/2019 1.52-2.13	11/26/2019 2.29-2.90	11/26/2019 3.05-3.66
PHC F1 (C6-C10) - BTEX	ND(10)	38	50	ND(10)
PHC F2 (C10-C16)	19	39	41	ND(10)
PHC F3 (C16-C34)	52	ND(50)	ND(50)	ND(50)
PHC F4 (C34-C50)	ND(50)	ND(50)	ND(50)	ND(50)

MW3S	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37	11/29/2019 1.52-2.13
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)	ND(10)
PHC F3 (C16-C34)	ND(50)	ND(50)	ND(50)
PHC F4 (C34-C50)	ND(50)	ND(50)	ND(50)

MW10	12/2/2019 0.00-0.61	12/2/2019 1.52-2.13	12/2/2019 2.29-2.90
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)	49
PHC F3 (C16-C34)	ND(50)	170	210
PHC F4 (C34-C50)	ND(50)	1600	2200

MW2S	11/26/2019 0.00-0.61	11/26/2019 0.76-1.37	11/26/2019 1.52-2.13
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)	ND(10)
PHC F3 (C16-C34)	96	ND(50)	ND(50)
PHC F4 (C34-C50)	2500 J-	ND(50)	ND(50)

BH7	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)
PHC F3 (C16-C34)	ND(50)	ND(50)
PHC F4 (C34-C50)	ND(50)	ND(50)

BH6	12/2/2019 0.00-0.61	12/2/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)
PHC F3 (C16-C34)	ND(50)	ND(50)
PHC F4 (C34-C50)	ND(50)	ND(50)

BH11	12/4/2019 0.00-0.61	12/4/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	32
PHC F3 (C16-C34)	91	ND(50)
PHC F4 (C34-C50)	3100	500

MW4S	12/2/2019 0.00-0.61	12/2/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)/ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)/ND(10)	ND(10)
PHC F3 (C16-C34)	ND(50)/55	ND(50)
PHC F4 (C34-C50)	ND(50)/ND(50)	ND(50)

BH8	12/2/2019 0.00-0.61	12/2/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)
PHC F3 (C16-C34)	70	ND(50)
PHC F4 (C34-C50)	1200	ND(50)

MW5	12/4/2019 0.00-0.61	12/4/2019 0.76-1.07	12/4/2019 1.52-1.68
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	28
PHC F2 (C10-C16)	ND(10)	ND(10)	55
PHC F3 (C16-C34)	200	ND(50)	ND(50)
PHC F4 (C34-C50)	8700	ND(50)	ND(50)

BH14	12/4/2019 0.00-0.61	12/4/2019 0.76-1.10	12/4/2019 1.52-1.80
PHC F1 (C6-C10) - BTEX	21	ND(10)	38
PHC F2 (C10-C16)	ND(10)	ND(10)	59
PHC F3 (C16-C34)	140	ND(50)	ND(50)
PHC F4 (C34-C50)	4300	ND(50)	ND(50)

BH12	12/4/2019 0.00-0.61	12/4/2019 1.52-2.13	12/4/2019 2.29-2.50
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	63
PHC F2 (C10-C16)	ND(10)	ND(10)	67
PHC F3 (C16-C34)	140	ND(50)	ND(50)
PHC F4 (C34-C50)	3900	ND(50)	ND(50)

BH13	12/4/2019 0.00-0.61	12/4/2019 0.76-1.19	12/4/2019 1.52-1.77
PHC F1 (C6-C10) - BTEX	ND(10)/ND(10)	ND(10)	57
PHC F2 (C10-C16)	ND(10)/ND(10)	ND(10)	72
PHC F3 (C16-C34)	420/310	ND(50)	ND(50)
PHC F4 (C34-C50)	4100/3800	290	ND(50)

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- BOREHOLE LOCATION
- DEEP BEDROCK MONITORING WELL LOCATION
- SHALLOW OVERBURDEN MONITORING WELL LOCATION
- ANTICIPATED 1DOOR4CARE FACILITY FOOTPRINT
- PROPOSED PROJECT AREA FOR SITE DUE DILIGENCE BOUNDARY

SOURCE: SURVEY BY J.D. BARNES LIMITED, DECEMBER 19, 2019. (UTM18-NAD83).

BH11	12/4/2019 0.00-0.61	12/4/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	32
PHC F3 (C16-C34)	91	ND(50)
PHC F4 (C34-C50)	3100	500

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (ug/g)
PARAMETER

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

PARAMETER	TABLE 7
PHC F1 (C6-C10) - BTEX	55
PHC F2 (C10-C16)	98
PHC F3 (C16-C34)	300
PHC F4 (C34-C50)	2800

0 10 20 30m

Coordinate System:
UTM ZONE 18 NAD83
METRES

N

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

LATERAL EXTENT OF PHC SOIL IMPACTS

Project No. **11205379**
Date **January 2020**

FIGURE 7a

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA005.DWG
Plot Date: 23 January 2020 3:25 PM

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MW9	12/3/2019 0.00-0.61	12/3/2019 1.52-2.10	12/3/2019 2.29-2.50
EC	0.64	0.74	0.51
SAR	19	1.9	2.5

MW10	12/2/2019 0.00-0.61	12/2/2019 1.52-2.13	12/2/2019 2.29-2.90
EC	1.1	2.2	2.2
SAR	14	2.7	4.9

BH7	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37
EC	0.43	1.2
SAR	13	18

BH6	12/2/2019 0.00-0.61	12/2/2019 0.76-1.37
EC	1.3	1.8
SAR	19	49

MW4S	12/2/2019 0.00-0.61	12/2/2019 0.76-1.37
EC	0.66/0.74	0.30
SAR	11/13	8.5

MW5	12/4/2019 0.00-0.61	12/4/2019 0.76-1.07	12/4/2019 1.52-1.68
EC	0.99	3.1	1.5
SAR	10	98	62

BH14	12/4/2019 0.00-0.61	12/4/2019 0.76-1.10	12/4/2019 1.52-1.80
EC	2.3	4.0	1.7
SAR	1.6	62	35

MW1	11/26/2019 0.00-0.61	11/26/2019 1.52-2.13	11/26/2019 2.29-2.90	11/26/2019 3.05-3.66
EC	0.30	1.4	2.5	1.5
SAR	2.1	0.36	0.97	5.2

MW3S	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37	11/29/2019 1.52-2.13
EC	0.45	0.48	2.2
SAR	6.2	3.2	27

MW2S	11/26/2019 0.00-0.61	11/26/2019 0.76-1.37	11/26/2019 1.52-2.13
EC	0.30	0.24	0.67
SAR	0.31	0.72	1.3

BH11	12/4/2019 0.00-0.61	12/4/2019 0.76-1.37
EC	0.98	2.4
SAR	13	30

BH8	12/2/2019 0.00-0.61	12/2/2019 0.76-1.37
EC	0.87	2.6
SAR	13	51

BH12	12/4/2019 0.00-0.61	12/4/2019 1.52-2.13	12/4/2019 2.29-2.50
EC	0.88	2.1	1.2
SAR	16	41	26

BH13	12/4/2019 0.00-0.61	12/4/2019 0.76-1.19	12/4/2019 1.52-1.77
EC	10/8.4	3.0	1.3
SAR	42/34	57	23

MW9 MW10 BH7 MW1 MW3D MW3S MW2S MW2D BH6 MW4S MW4D BH8 BH11 MW5 BH12 BH14 BH13

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LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- BOREHOLE LOCATION
- DEEP BEDROCK MONITORING WELL LOCATION
- SHALLOW OVERBURDEN MONITORING WELL LOCATION
- ANTICIPATED 1DOOR4CARE FACILITY FOOTPRINT
- PROPOSED PROJECT AREA FOR SITE DUE DILIGENCE BOUNDARY

SOURCE: SURVEY BY J.D. BARNES LIMITED, DECEMBER 19, 2019. (UTM18-NAD83).

BH12	12/4/2019 0.00-0.61	12/4/2019 0.76-1.37
EC	0.88	2.1
SAR	16	4.1

LOCATION; SAMPLE DATE; SAMPLE DEPTH; RESULT (ms/cm); RESULT (ug/g); PARAMETER

PARAMETER	TABLE 7
EC (ms/cm)	0.7
SAR (ug/g)	5

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

0 10 20 30m

Coordinate System: UTM ZONE 18 NAD83 METRES

N

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

LATERAL EXTENT OF EC AND SAR SOIL IMPACTS

Project No. **11205379**
Date **January 2020**

FIGURE 7b

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Accessed: 2019

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA006.DWG
Plot Date: 23 January 2020 3:28 PM

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- BOREHOLE LOCATION
- DEEP BEDROCK MONITORING WELL LOCATION
- SHALLOW OVERBURDEN MONITORING WELL LOCATION
- ANTICIPATED 1DOOR4CARE FACILITY FOOTPRINT
- PROPOSED PROJECT AREA FOR SITE DUE DILIGENCE BOUNDARY

SOURCE: SURVEY BY J.D. BARNES LIMITED, DECEMBER 19, 2019. (UTM18-NAD83).

BH12	12/4/2019 0.00-0.61	12/4/2019 0.76-1.37
Hexane	0.55	0.24

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (ug/g)
PARAMETER

PARAMETER	TABLE 7
Hexane	2.8

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

0 10 20 30m

Coordinate System:
UTM ZONE 18 NAD83
METRES

N

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

LATERAL EXTENT OF HEXANE SOIL IMPACTS

Project No. **11205379**
Date **January 2020**

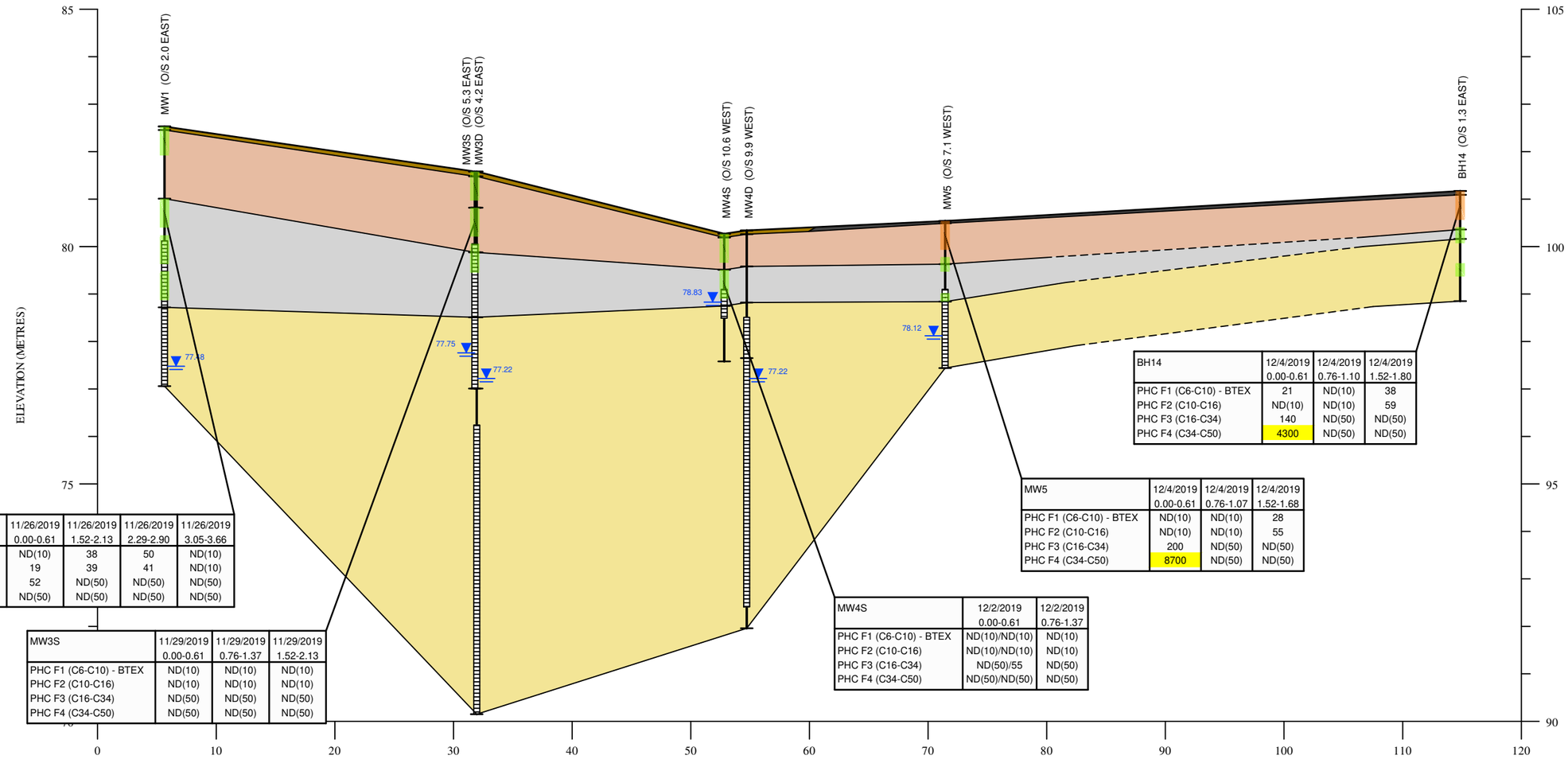
FIGURE 7c

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Accessed: 2019

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA007.DWG
Plot Date: 23 January 2020 3:32 PM

A
NORTH

A'
SOUTH



DISTANCE (metre)

SCALE: HORZ. 1:400m
VERT. 1:100m

BH14	12/4/2019 0.00-0.61	12/4/2019 0.76-1.10	12/4/2019 1.52-1.80
PHC F1 (C6-C10) - BTEX	21	ND(10)	38
PHC F2 (C10-C16)	ND(10)	ND(10)	59
PHC F3 (C16-C34)	140	ND(50)	ND(50)
PHC F4 (C34-C50)	4300	ND(50)	ND(50)

MW5	12/4/2019 0.00-0.61	12/4/2019 0.76-1.07	12/4/2019 1.52-1.68
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	28
PHC F2 (C10-C16)	ND(10)	ND(10)	55
PHC F3 (C16-C34)	200	ND(50)	ND(50)
PHC F4 (C34-C50)	8700	ND(50)	ND(50)

MW1	11/26/2019 0.00-0.61	11/26/2019 1.52-2.13	11/26/2019 2.29-2.90	11/26/2019 3.05-3.66
PHC F1 (C6-C10) - BTEX	ND(10)	38	50	ND(10)
PHC F2 (C10-C16)	19	39	41	ND(10)
PHC F3 (C16-C34)	52	ND(50)	ND(50)	ND(50)
PHC F4 (C34-C50)	ND(50)	ND(50)	ND(50)	ND(50)

MW4S	12/2/2019 0.00-0.61	12/2/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)/ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)/ND(10)	ND(10)
PHC F3 (C16-C34)	ND(50)/55	ND(50)
PHC F4 (C34-C50)	ND(50)/ND(50)	ND(50)

MW3S	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37	11/29/2019 1.52-2.13
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)	ND(10)
PHC F3 (C16-C34)	ND(50)	ND(50)	ND(50)
PHC F4 (C34-C50)	ND(50)	ND(50)	ND(50)

LEGEND

MW1
- WELL DESIGNATION
- GROUND SURFACE
- STRATIGRAPHIC BOUNDARY
- GROUNDWATER ELEVATION (DECEMBER 13, 2019)
- SCREENED INTERVAL

- TOPSOIL
- ASPHALT
- FILL
- SAND
- SHALE

BH11	12/4/2019 0.00-0.61	12/4/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	32
PHC F3 (C16-C34)	91	ND(50)
PHC F4 (C34-C50)	3100	500

- LOCATION
- SAMPLE DATE
- SAMPLE DEPTH
- RESULT (ug/g)
- PARAMETER

- CONCENTRATION ABOVE MECP TABLE 7 STANDARDS
- MEETS STANDARDS

PARAMETER	TABLE 7
PHC F1 (C6-C10) - BTEX	55
PHC F2 (C10-C16)	98
PHC F3 (C16-C34)	300
PHC F4 (C34-C50)	2800

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

VERTICAL EXTENT OF PHC SOIL IMPACTS - CROSS-SECTION A-A'

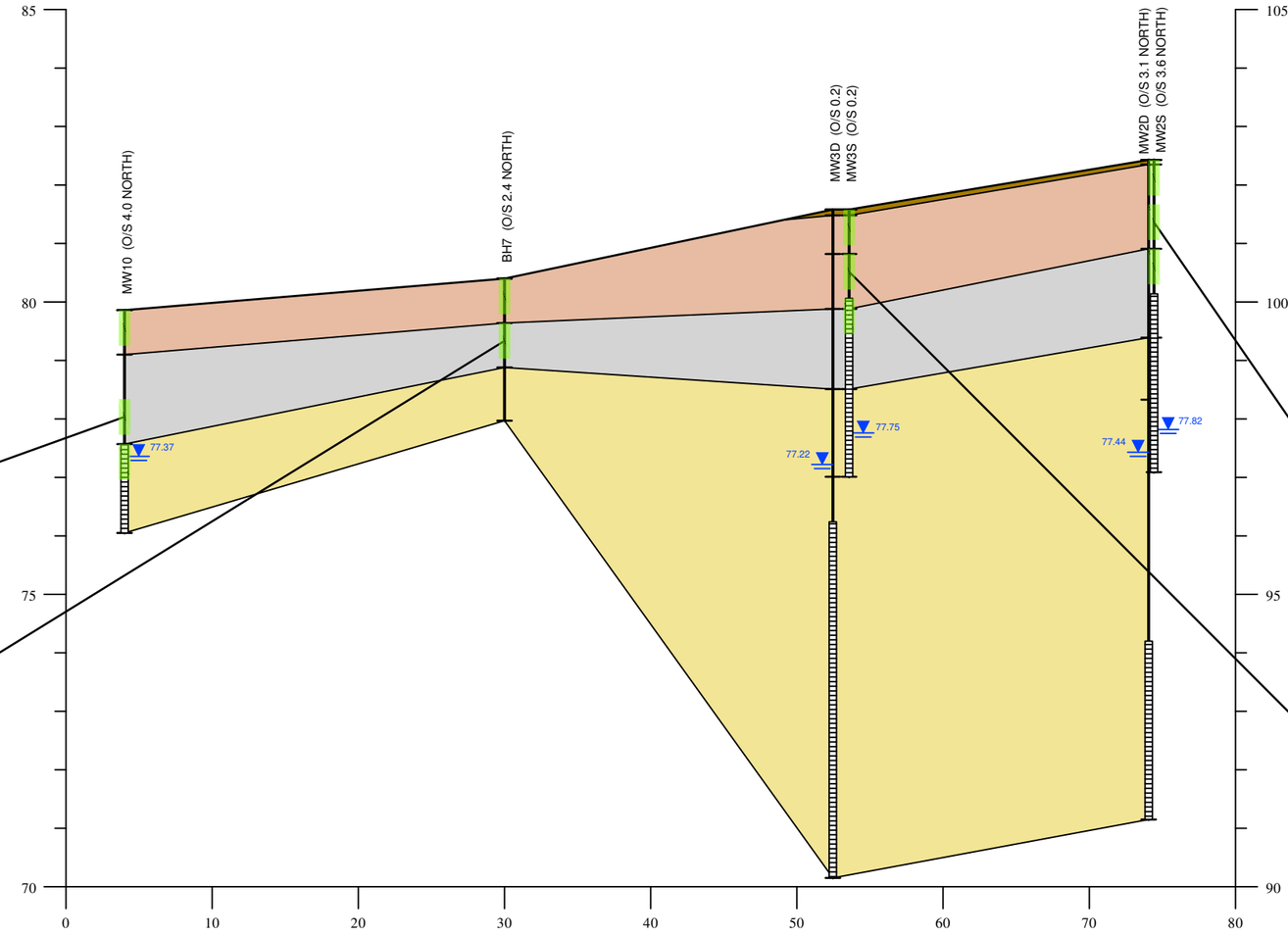
Project No. **11205379**
Date **January 2020**

FIGURE 7d

Filename: N:\CA\Toronto\Projects\66\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA010.DWG
Plot Date: 23 January 2020 3:42 PM

B
WEST

B'
EAST



DISTANCE (metre)

SCALE: HORZ. 1:400m
VERT. 1:100m

MW10	12/2/2019 0.00-0.61	12/2/2019 1.52-2.13	12/2/2019 2.29-2.90
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)	49
PHC F3 (C16-C34)	ND(50)	170	210
PHC F4 (C34-C50)	ND(50)	1600	2200

BH7	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)
PHC F3 (C16-C34)	ND(50)	ND(50)
PHC F4 (C34-C50)	ND(50)	ND(50)

MW2S	11/26/2019 0.00-0.61	11/26/2019 0.76-1.37	11/26/2019 1.52-2.13
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)	ND(10)
PHC F3 (C16-C34)	96	ND(50)	ND(50)
PHC F4 (C34-C50)	2500 J-	ND(50)	ND(50)

MW3S	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37	11/29/2019 1.52-2.13
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	ND(10)	ND(10)
PHC F3 (C16-C34)	ND(50)	ND(50)	ND(50)
PHC F4 (C34-C50)	ND(50)	ND(50)	ND(50)

LEGEND

MW1 — WELL DESIGNATION

GROUND SURFACE

STRATIGRAPHIC BOUNDARY

GROUNDWATER ELEVATION (DECEMBER 13, 2019)

SCREENED INTERVAL

TOPSOIL

FILL

SAND

SHALE

BH11	12/4/2019 0.00-0.61	12/4/2019 0.76-1.37
PHC F1 (C6-C10) - BTEX	ND(10)	ND(10)
PHC F2 (C10-C16)	ND(10)	32
PHC F3 (C16-C34)	91	ND(50)
PHC F4 (C34-C50)	3100	500

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (ug/g)
PARAMETER

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

MEETS STANDARDS

PARAMETER	TABLE 7
PHC F1 (C6-C10) - BTEX	55
PHC F2 (C10-C16)	98
PHC F3 (C16-C34)	300
PHC F4 (C34-C50)	2800

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

VERTICAL EXTENT OF PHC SOIL IMPACTS - CROSS-SECTION B-B'

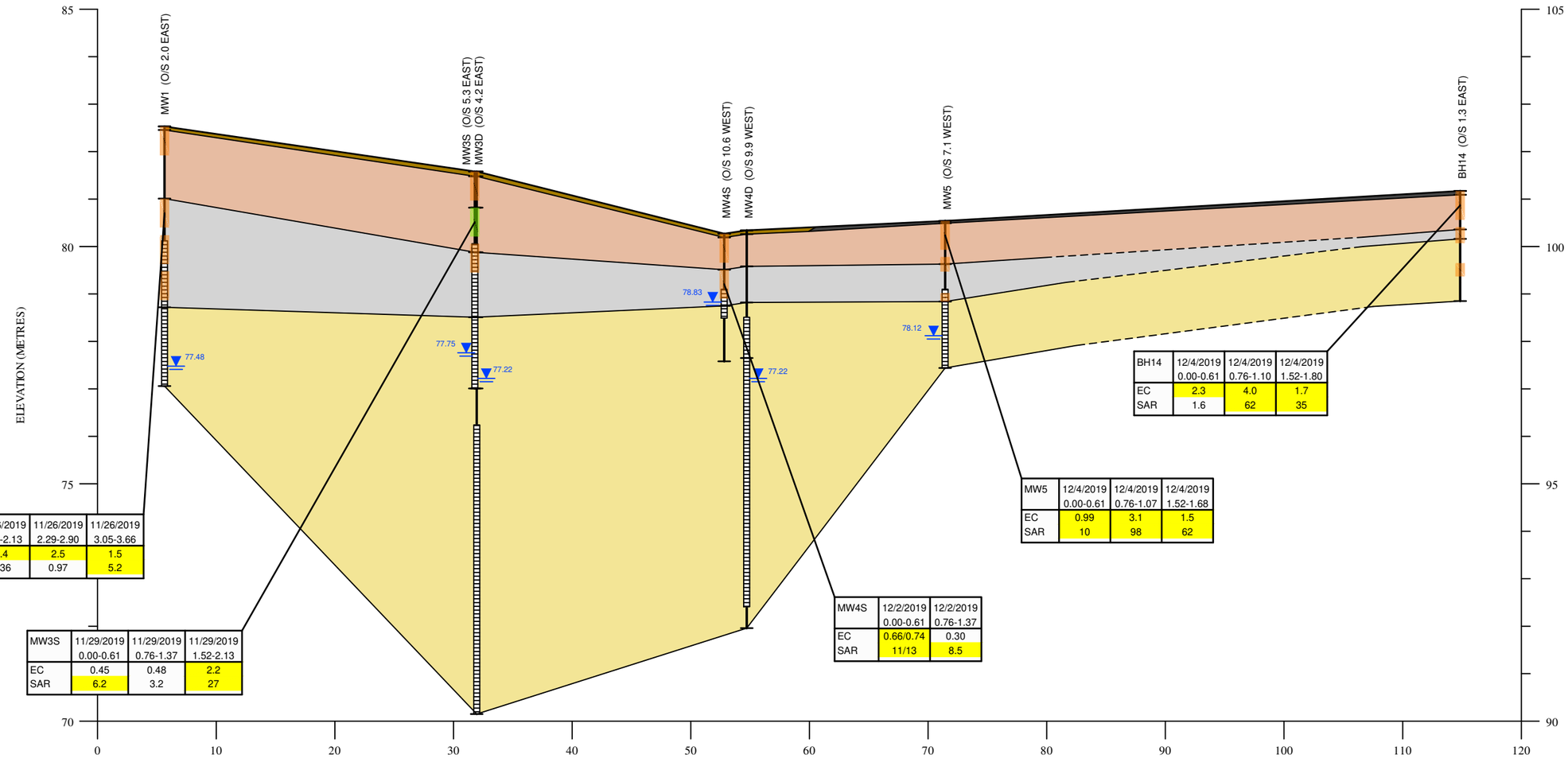
Project No. **11205379**
Date **January 2020**

FIGURE 7e

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA011.DWG
Plot Date: 23 January 2020 3:44 PM

A
NORTH

A'
SOUTH



MW1	11/26/2019 0.00-0.61	11/26/2019 1.52-2.13	11/26/2019 2.29-2.90	11/26/2019 3.05-3.66
EC	0.30	1.4	2.5	1.5
SAR	2.1	0.36	0.97	5.2

MW3S	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37	11/29/2019 1.52-2.13
EC	0.45	0.48	2.2
SAR	6.2	3.2	27

MW4S	12/2/2019 0.00-0.61	12/2/2019 0.76-1.37
EC	0.66/0.74	0.30
SAR	11/13	8.5

MW5	12/4/2019 0.00-0.61	12/4/2019 0.76-1.07	12/4/2019 1.52-1.68
EC	0.99	3.1	1.5
SAR	10	98	62

BH14	12/4/2019 0.00-0.61	12/4/2019 0.76-1.10	12/4/2019 1.52-1.80
EC	2.3	4.0	1.7
SAR	1.6	62	35

DISTANCE (metre)

SCALE: HORZ. 1:400m
VERT. 1:100m

LEGEND

MW1 — WELL DESIGNATION

GROUND SURFACE

STRATIGRAPHIC BOUNDARY

GROUNDWATER ELEVATION (DECEMBER 13, 2019)

SCREENED INTERVAL

TOPSOIL

ASPHALT

FILL

SAND

SHALE

BH12	12/4/2019 0.00-0.61	12/4/2019 0.76-1.37
EC	0.88	2.1
SAR	16	4.1

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (ms/cm)
RESULT (ug/g)
PARAMETER

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

MEETS STANDARDS

PARAMETER	TABLE 7
EC (ms/cm)	0.7
SAR (ug/g)	5

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

VERTICAL EXTENT OF EC AND SAR SOIL IMPACTS - CROSS-SECTION A-A'

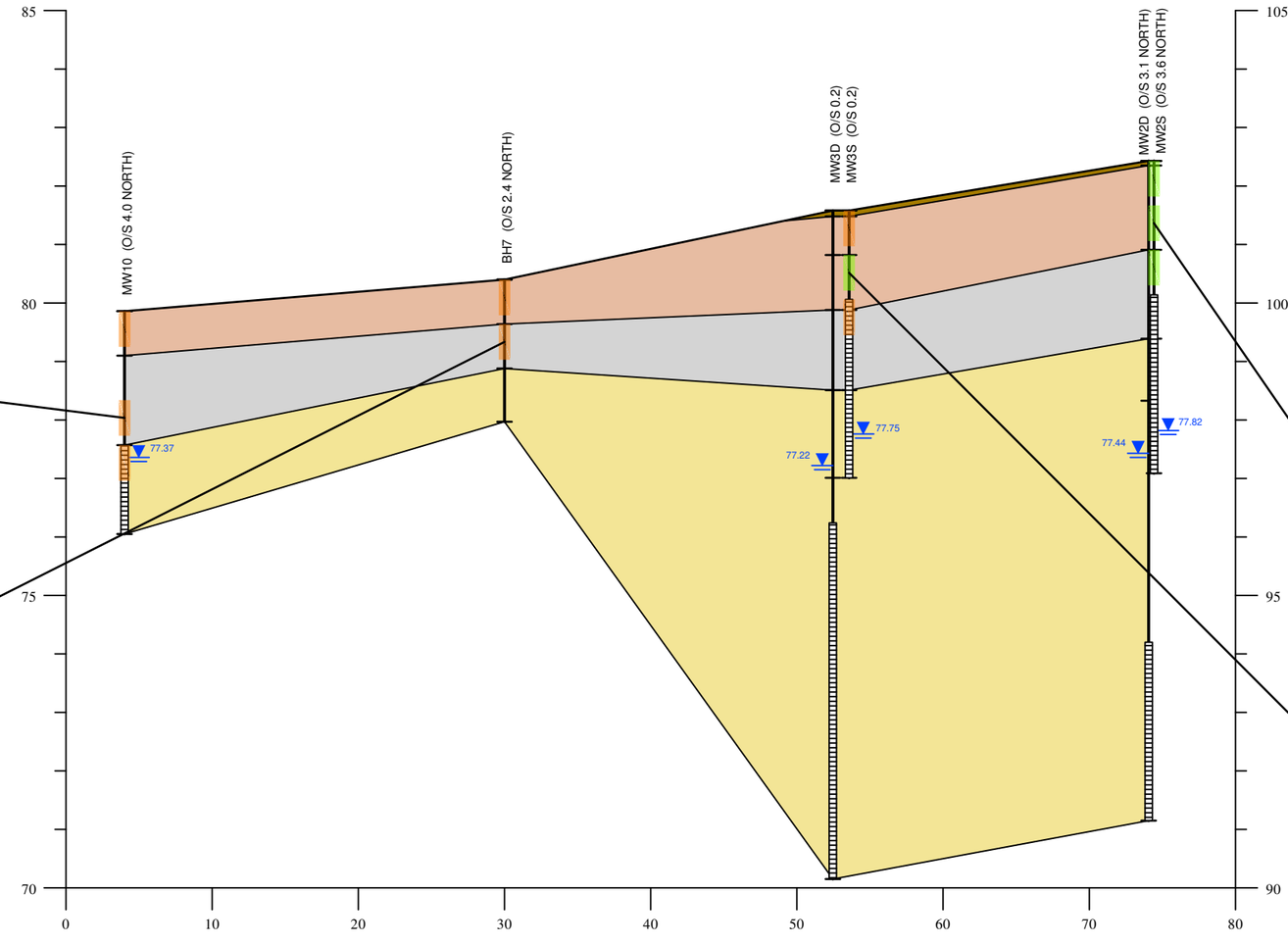
Project No. **11205379**
Date **January 2020**

FIGURE 7f

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA012.DWG
Plot Date: 23 January 2020 3:58 PM

B
WEST

B'
EAST



DISTANCE (metre)

SCALE: HORZ. 1:400m
VERT. 1:100m

MW10	12/2/2019 0.00-0.61	12/2/2019 1.52-2.13	12/2/2019 2.29-2.90
EC	1.1	2.2	2.2
SAR	14	2.7	4.9

BH7	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37
EC	0.43	1.2
SAR	13	18

MW2S	11/26/2019 0.00-0.61	11/26/2019 0.76-1.37	11/26/2019 1.52-2.13
EC	0.30	0.24	0.67
SAR	0.31	0.72	1.3

MW3S	11/29/2019 0.00-0.61	11/29/2019 0.76-1.37	11/29/2019 1.52-2.13
EC	0.45	0.48	2.2
SAR	6.2	3.2	27

LEGEND

MW1 — WELL DESIGNATION

GROUND SURFACE

STRATIGRAPHIC BOUNDARY

GROUNDWATER ELEVATION (DECEMBER 13, 2019)

SCREENED INTERVAL

TOPSOIL

FILL

SAND

SHALE

BH12	12/4/2019 0.00-0.61	12/4/2019 0.76-1.37
EC	0.88	2.1
SAR	16	4.1

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (ms/cm)
RESULT (ug/g)
PARAMETER

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

MEETS STANDARDS

PARAMETER	TABLE 7
EC (ms/cm)	0.7
SAR (ug/g)	5

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

VERTICAL EXTENT OF EC AND SAR SOIL IMPACTS - CROSS-SECTION B-B'

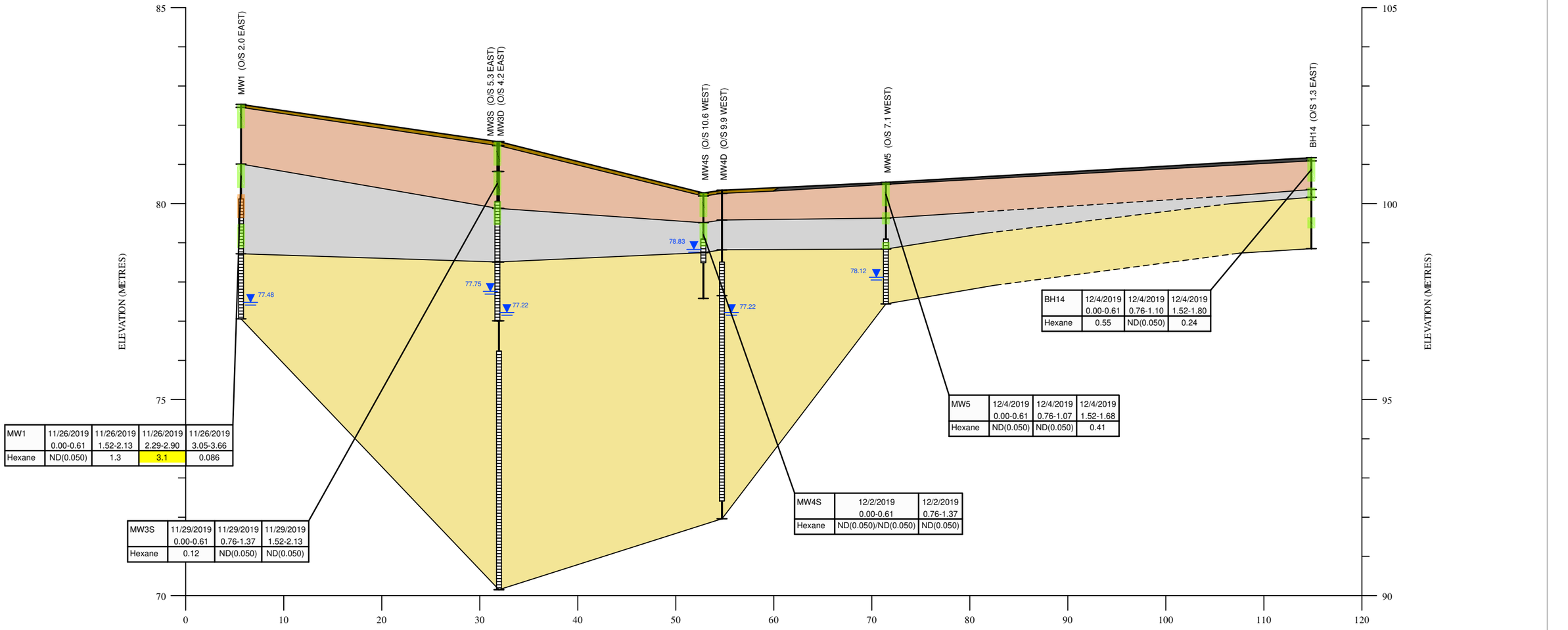
Project No. **11205379**
Date **April 2020**

FIGURE 7g

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA013.DWG
Plot Date: 08 April 2020 8:32 AM

A
NORTH

A'
SOUTH



MW1	11/26/2019	11/26/2019	11/26/2019	11/26/2019
	0.00-0.61	1.52-2.13	2.29-2.90	3.05-3.66
Hexane	ND(0.050)	1.3	3.1	0.086

MW3S	11/29/2019	11/29/2019	11/29/2019
	0.00-0.61	0.76-1.37	1.52-2.13
Hexane	0.12	ND(0.050)	ND(0.050)

MW4S	12/2/2019	12/2/2019
	0.00-0.61	0.76-1.37
Hexane	ND(0.050)/ND(0.050)	ND(0.050)

MW5	12/4/2019	12/4/2019	12/4/2019
	0.00-0.61	0.76-1.07	1.52-1.68
Hexane	ND(0.050)	ND(0.050)	0.41

BH14	12/4/2019	12/4/2019	12/4/2019
	0.00-0.61	0.76-1.10	1.52-1.80
Hexane	0.55	ND(0.050)	0.24

DISTANCE (metre)

SCALE: HORZ. 1:400m
VERT. 1:100m

LEGEND

MW1 — WELL DESIGNATION

GROUND SURFACE

STRATIGRAPHIC BOUNDARY

GROUNDWATER ELEVATION (DECEMBER 13, 2019)

SCREENED INTERVAL

TOPSOIL

ASPHALT

FILL

SAND

SHALE

BH12	12/4/2019	12/4/2019
	0.00-0.61	0.76-1.37
Hexane	0.55	0.24

LOCATION
SAMPLE DATE
SAMPLE DEPTH
RESULT (ug/g)
PARAMETER

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

MEETS STANDARDS

PARAMETER	TABLE 7
Hexane	2.8

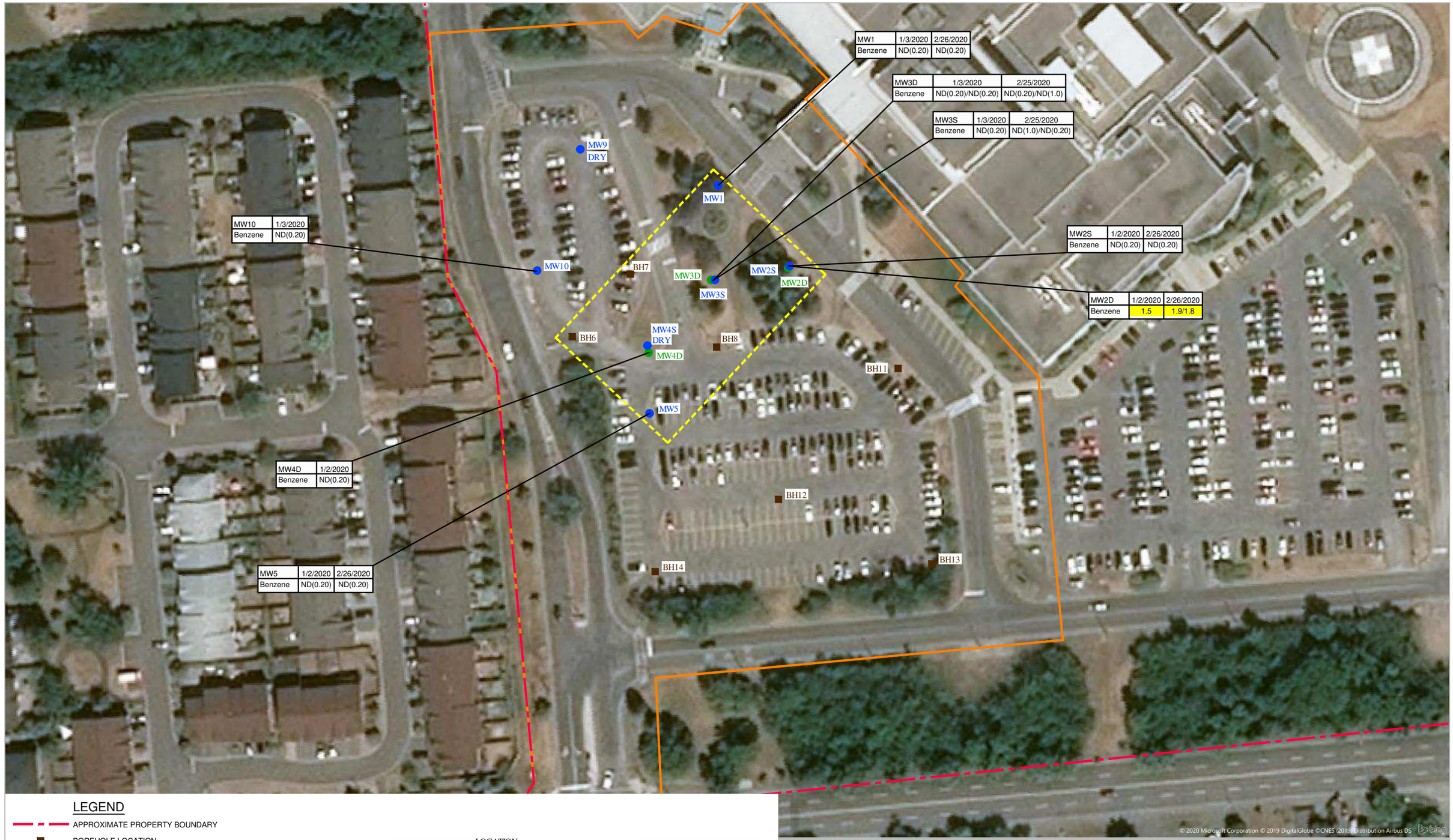
PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

VERTICAL EXTENT OF HEXANE SOIL IMPACTS - CROSS-SECTION A-A'

Project No. **11205379**
Date **January 2020**

FIGURE 7h

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA014.DWG
Plot Date: 23 January 2020 4:03 PM



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- BOREHOLE LOCATION
- DEEP BEDROCK MONITORING WELL LOCATION
- SHALLOW OVERBURDEN MONITORING WELL LOCATION
- ANTICIPATED 1DOOR4CARE FACILITY FOOTPRINT
- PROPOSED PROJECT AREA FOR SITE DUE DILIGENCE BOUNDARY

SOURCE: SURVEY BY J.D. BARNES LIMITED, DECEMBER 19, 2019. (UTM18-NAD83).

MW5	1/2/2020
Benzene	ND(0.20)

LOCATION
SAMPLE DATE
RESULT (ug/L)
PARAMETER

PARAMETER	TABLE 7
Benzene	0.5

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

0 10 20 30m

Coordinate System:
UTM ZONE 18 NAD83
METRES

N

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF
EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

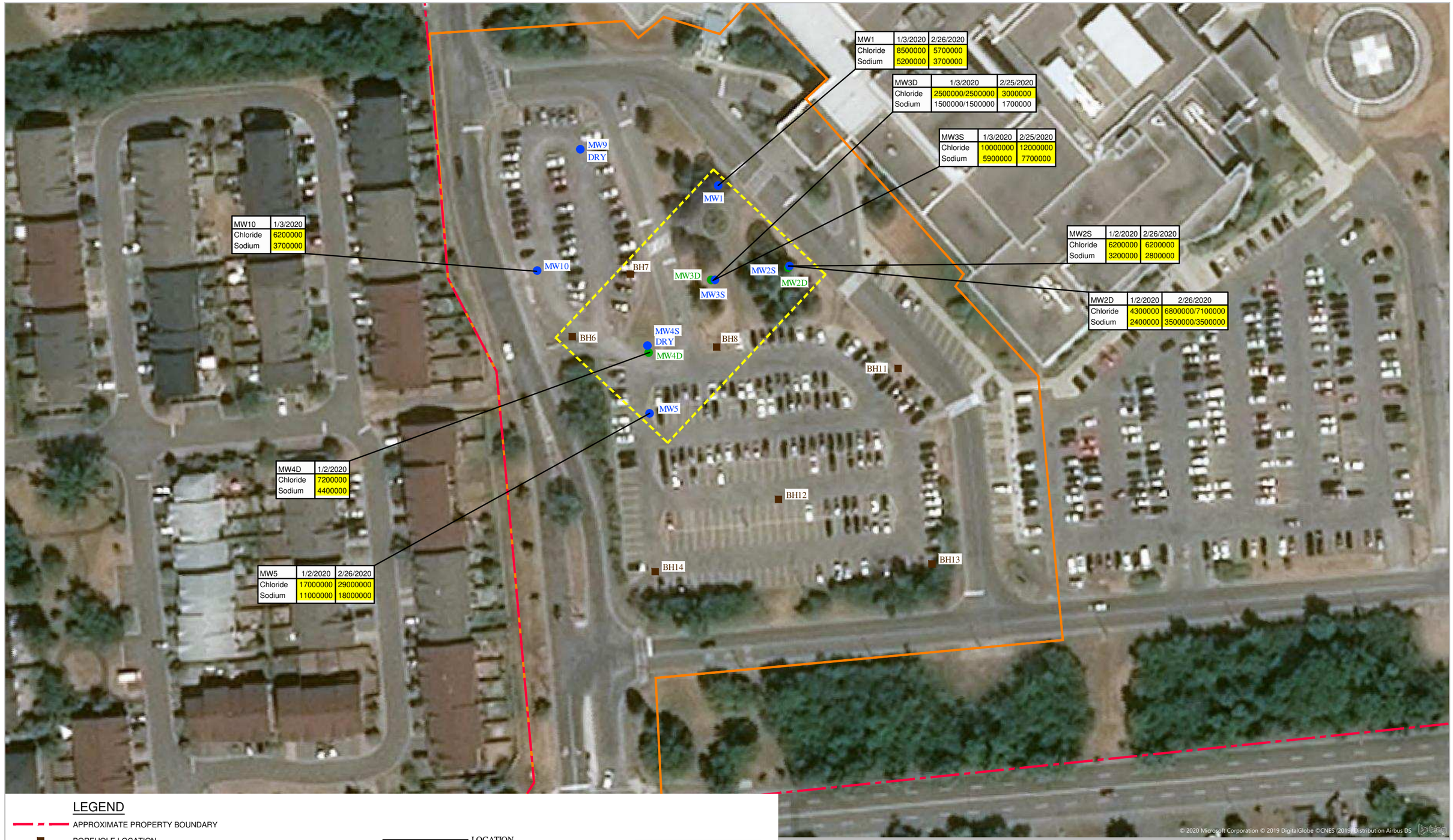
LATERAL EXTENT OF GROUNDWATER BENZENE IMPACTS

Project No. **11205379**
Date **April 2020**

FIGURE 8a

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA008.DWG
Plot Date: 08 April 2020 7:56 AM

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Accessed: 2019



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- BOREHOLE LOCATION
- DEEP BEDROCK MONITORING WELL LOCATION
- SHALLOW OVERBURDEN MONITORING WELL LOCATION
- ANTICIPATED 1DOOR4CARE FACILITY FOOTPRINT
- PROPOSED PROJECT AREA FOR SITE DUE DILIGENCE BOUNDARY

SOURCE: SURVEY BY J.D. BARNES LIMITED, DECEMBER 19, 2019. (UTM18-NAD83).

MW5	1/2/2020
Chloride	17,000,000
Sodium	11,000,000

LOCATION
SAMPLE DATE
RESULT (ug/L)
PARAMETER

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

PARAMETER	TABLE 7
Chloride	1,800,000
Sodium	1,800,000

0 10 20 30m

Coordinate System:
UTM ZONE 18 NAD83
METRES

N

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF
EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

LATERAL EXTENT OF GROUNDWATER SODIUM AND CHLORIDE IMPACTS

Project No. **11205379**
Date **April 2020**

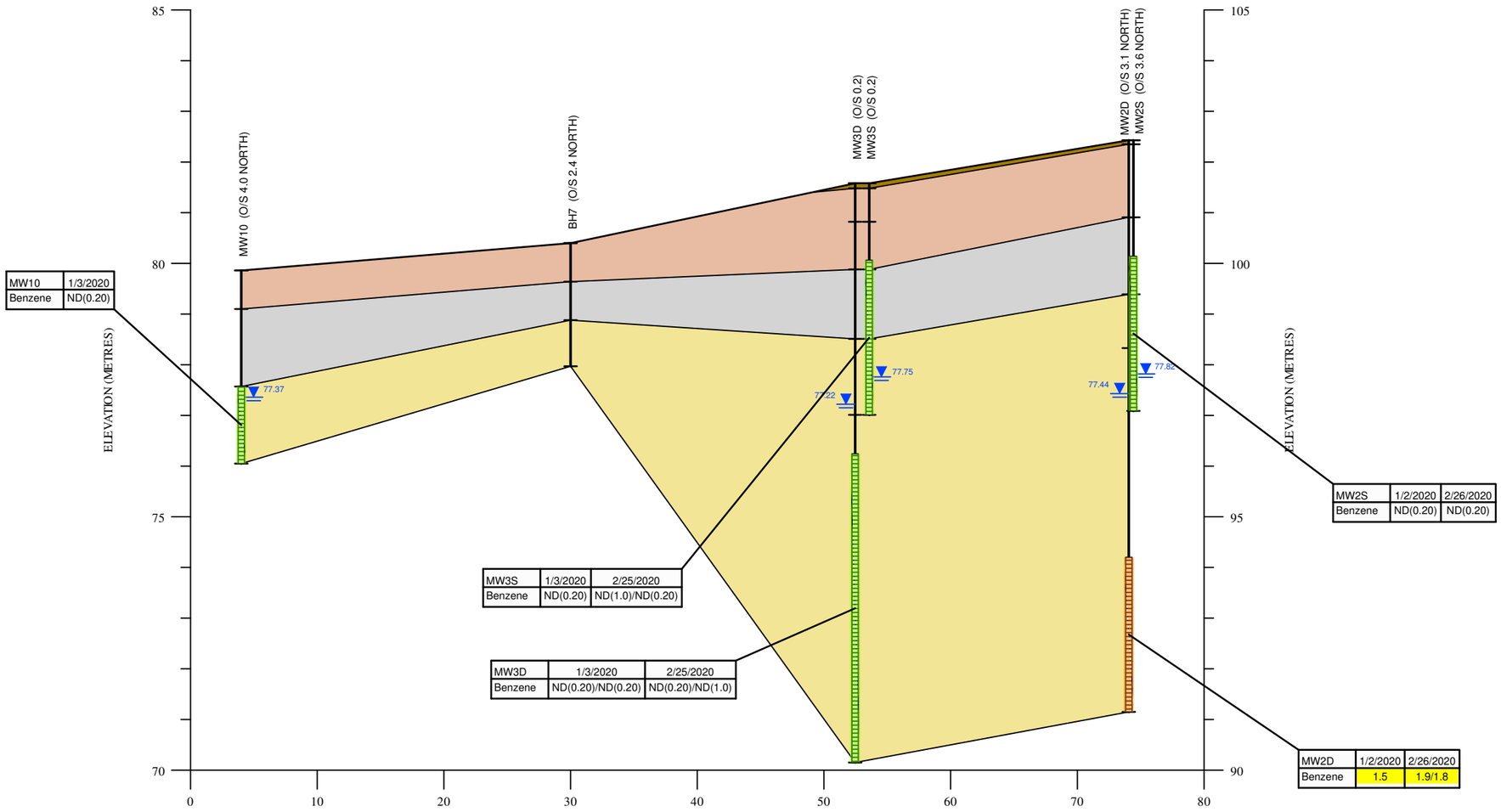
FIGURE 8b

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA009.DWG
Plot Date: 07 April 2020 4:21 PM

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Accessed: 2019

B
WEST

B'
EAST



DISTANCE (metre)

SCALE: HORZ. 1:400m
VERT. 1:100m

LEGEND

MW1
WELL DESIGNATION
GROUND SURFACE
STRATIGRAPHIC BOUNDARY
GROUNDWATER ELEVATION (DECEMBER 13, 2019)
SCREENED INTERVAL

TOPSOIL
FILL
SAND
SHALE

MW5 | 1/2/2020
Benzene | ND(0.20)
LOCATION
SAMPLE DATE
RESULT (ug/L)
PARAMETER

PARAMETER	TABLE 7
Benzene	0.5

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS
MEETS STANDARDS

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO

VERTICAL EXTENT OF GROUNDWATER BENZENE IMPACTS - CROSS-SECTION B-B'

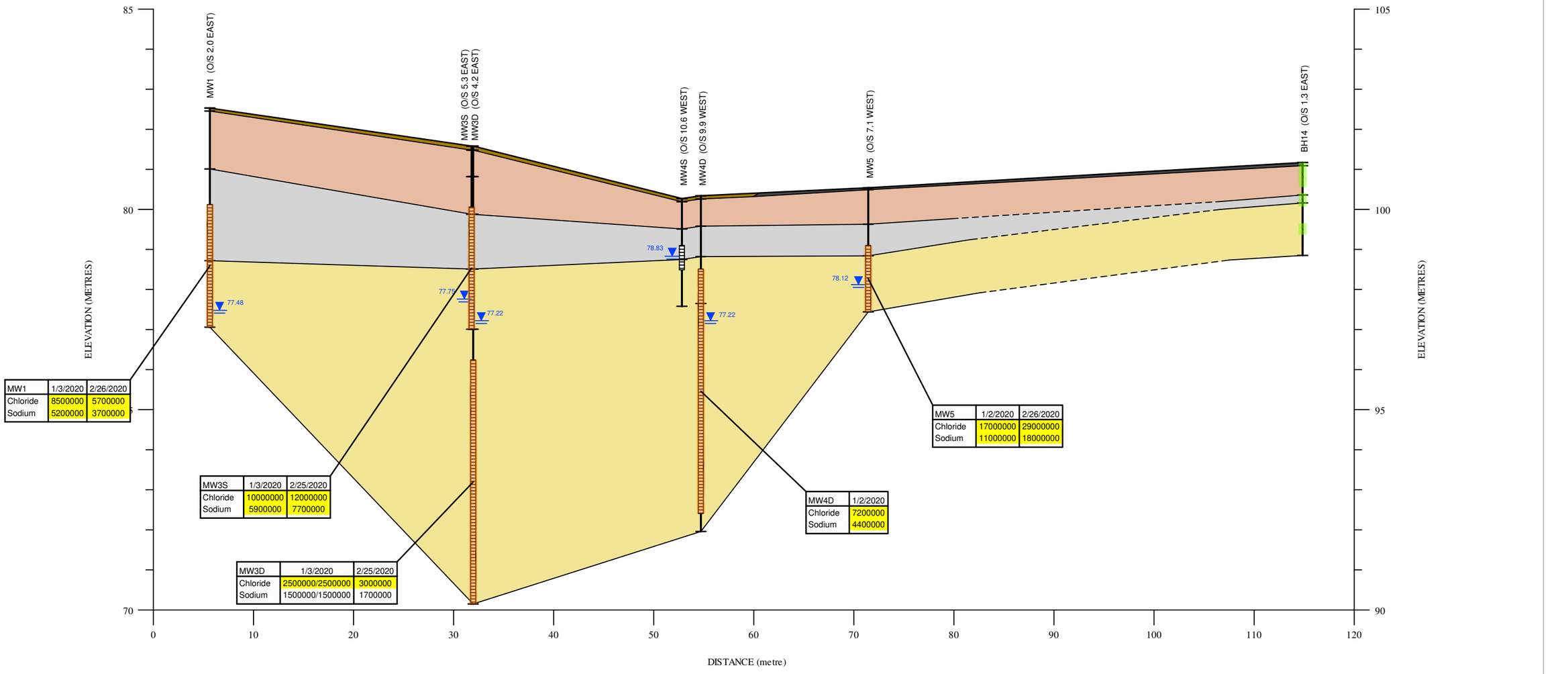
Project No. **11205379**
Date **April 2020**

FIGURE 8c

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA015.DWG
Plot Date: 08 April 2020 7:57 AM

A
NORTH

A'
SOUTH



MW1	1/3/2020	2/26/2020
Chloride	8500000	5700000
Sodium	5200000	3700000

MW3S	1/3/2020	2/25/2020
Chloride	10000000	12000000
Sodium	5900000	7700000

MW3D	1/3/2020	2/25/2020
Chloride	2500000/2500000	3000000
Sodium	1500000/1500000	1700000

MW5	1/2/2020	2/26/2020
Chloride	17000000	29000000
Sodium	11000000	18000000

MW4D	1/2/2020
Chloride	7200000
Sodium	4400000

SCALE: HORZ. 1:400m
VERT. 1:100m

LEGEND

MW-1 — WELL DESIGNATION

GROUND SURFACE

STRATIGRAPHIC BOUNDARY

GROUNDWATER ELEVATION (DECEMBER 13, 2019)

SCREENED INTERVAL

TOPSOIL

ASPHALT

FILL

SAND

SHALE

MW5	1/2/2020
Chloride	17,000,000
Sodium	11,000,000

LOCATION
SAMPLE DATE
RESULT (ug/L)
PARAMETER

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS

MEETS STANDARDS

PARAMETER	TABLE 7
Chloride	1,800,000
Sodium	1,800,000

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO
VERTICAL EXTENT OF GROUNDWATER SODIUM AND CHLORIDE IMPACTS - CROSS-SECTION A-A'

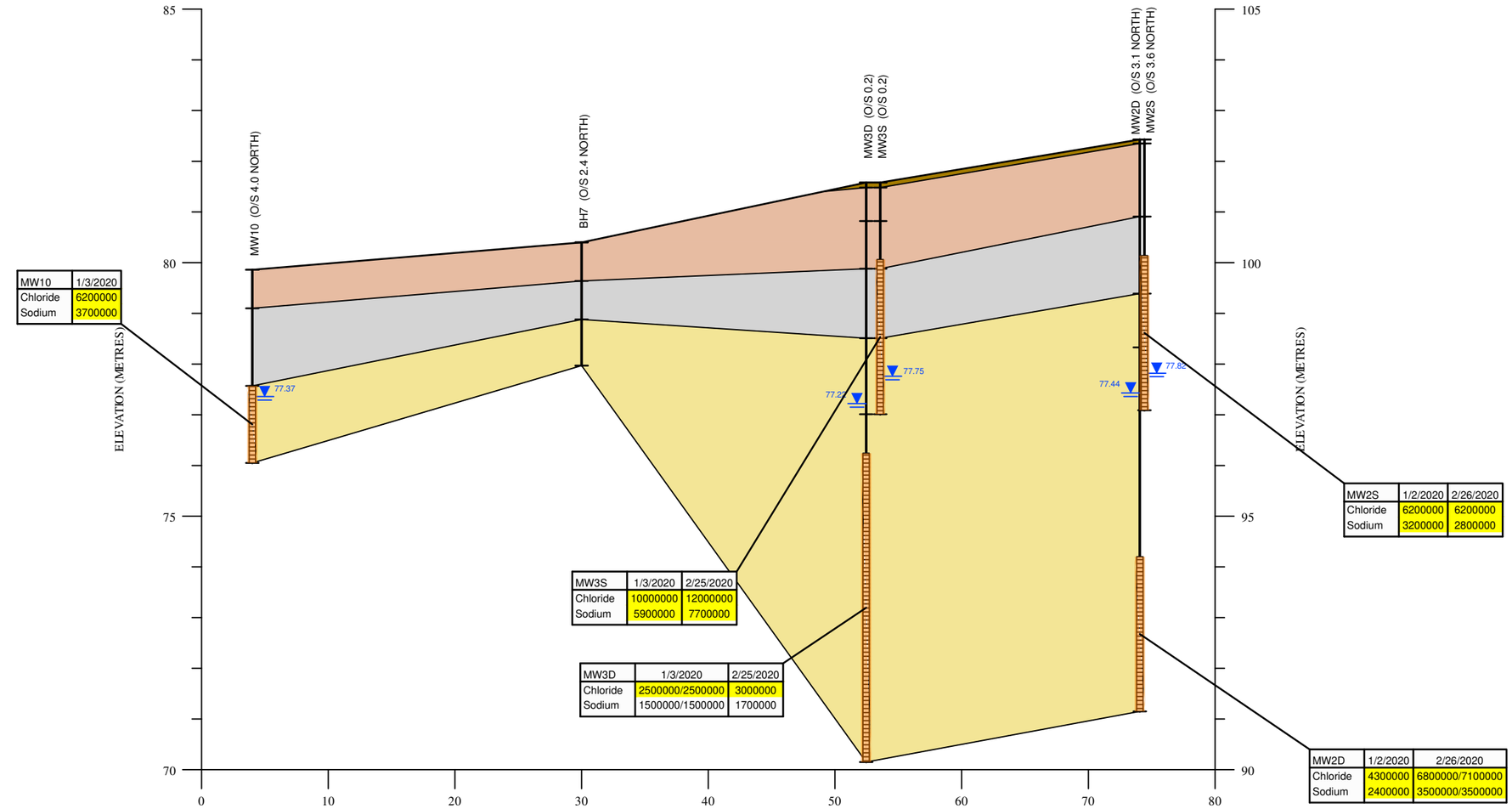
Project No. **11205379**
Date **April 2020**

FIGURE 8d

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA016.DWG
Plot Date: 07 April 2020 4:19 PM

B
WEST

B'
EAST



MW10	1/3/2020
Chloride	6200000
Sodium	3700000

MW3S	1/3/2020	2/25/2020
Chloride	10000000	12000000
Sodium	5900000	7700000

MW3D	1/3/2020	2/25/2020
Chloride	2500000/2500000	3000000
Sodium	1500000/1500000	1700000

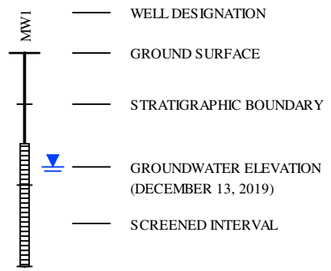
MW2S	1/2/2020	2/26/2020
Chloride	6200000	6200000
Sodium	3200000	2800000

MW2D	1/2/2020	2/26/2020
Chloride	4300000	6800000/7100000
Sodium	2400000	3500000/3500000

DISTANCE (metre)

SCALE: HORZ. 1:400m
VERT. 1:100m

LEGEND



TOPSOIL
FILL
SAND
SHALE

MW5	1/2/2020
Chloride	17,000,000
Sodium	11,000,000

LOCATION
SAMPLE DATE
RESULT (ug/L)
PARAMETER

CONCENTRATION ABOVE MECP TABLE 7 STANDARDS
MEETS STANDARDS

PARAMETER	TABLE 7
Chloride	1,800,000
Sodium	1,800,000

GHD

PROPOSED 1DOOR4CARE FACILITY
CHILDREN'S HOSPITAL OF EASTERN ONTARIO CAMPUS
401 & 407 SMYTH ROAD, OTTAWA, ONTARIO
VERTICAL EXTENT OF GROUNDWATER SODIUM AND CHLORIDE IMPACTS - CROSS-SECTION B-B'

Project No. **11205379**
Date **April 2020**

FIGURE 8e

Filename: N:\CA\Toronto\Projects\662\11205379\Digital_Design\ACAD 2018\Figures\RPT-005\11205379(RPT-005)GN-WA017.DWG
Plot Date: 07 April 2020 4:18 PM

Tables

Table 1
Summary of Sampling Locations and Chemical Analysis
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Sample Location	Sample Date	Sample ID	Depth (m BGS)	Lab COA	VOCs	PAHs	Metals	PHCs F1-F4	Pesticides	PCBs	Chloride/SAR	Conductivity	Cyanide	Moisture	pH
Soil Samples															
MW1	11/26/2019	11205379-20-MW1-SS1	0.00-0.61	B9X8304	√	√	√	√	√	√	√	√	√	√	√
MW1	11/26/2019	11205379-20-MW1-SS3	1.52-2.13	B9X8304	√	NA	√	√	NA	NA	√	√	√	√	√
MW1	11/26/2019	11205379-20-MW1-SS4	2.29-2.90	B9X8304	√	NA	√	√	NA	NA	√	√	√	√	√
MW1	11/26/2019	11205379-20-MW1-SS5	3.05-3.66	B9X8304	√	NA	√	√	NA	NA	√	√	√	√	√
MW2S	11/26/2019	11205379-20-MW2S-SS1	0.00-0.61	B9X8304	√	√	√	√	√	√	√	√	√	√	√
MW2S	11/26/2019	11205379-20-MW2S-SS2	0.76-1.37	B9X8304	√	NA	√	√	NA	NA	√	√	√	√	√
MW2S	11/26/2019	11205379-20-MW2S-SS4	1.52-2.13	B9X8304	√	NA	√	√	NA	NA	√	√	√	√	√
MW3S	11/29/2019	11205379-20-MW3S-SS1	0.00-0.61	B9X8304	√	√	√	√	√	√	√	√	√	√	√
MW3S	11/29/2019	11205379-20-MW3S-SS2	0.76-1.37	B9X8304	√	NA	√	√	NA	NA	√	√	√	√	√
MW3S	11/29/2019	11205379-20-MW3S-SS3	1.52-2.13	B9X8304	√	NA	√	√	NA	NA	√	√	√	√	√
MW4S	12/2/2019	11205379-MW4S-SS1	0.00-0.61	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
MW4S (Field Duplicate)	12/2/2019	11205379-DUP1	0.00-0.61	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
MW4S	12/2/2019	11205379-MW4S-SS2	0.76-1.37	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
MW5	12/4/2019	11205379-MW5-SS1	0.00-0.61	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
MW5	12/4/2019	11205379-MW5-SS2	0.76-1.07	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
MW5	12/4/2019	11205379-MW5-SS3	1.52-1.68	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH6	12/2/2019	11205379-BH6-SS1	0.00-0.61	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
BH6	12/2/2019	11205379-BH6-SS2	0.76-1.37	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH7	11/29/2019	11205379-20-BH7-SS1	0.00-0.61	B9X8304	√	√	√	√	√	√	√	√	√	√	√
BH7	11/29/2019	11205379-20-BH7-SS2	0.76-1.37	B9X8304	√	NA	√	√	NA	NA	√	√	√	√	√
BH8	12/2/2019	11205379-BH8-SS1	0.00-0.61	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
BH8	12/2/2019	11205379-BH8-SS2	0.76-1.37	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
MW9	12/3/2019	11205379-BH9-SS1	0.00-0.61	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
MW9	12/3/2019	11205379-BH9-SS3	1.52-2.10	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
MW9	12/3/2019	11205379-BH9-SS4	2.29-2.50	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
MW10	12/2/2019	11205379-BH10-SS1	0.00-0.61	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
MW10	12/2/2019	11205379-BH10-SS3	1.52-2.13	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
MW10	12/2/2019	11205379-BH10-SS4	2.29-2.90	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH11	12/4/2019	11205379-BH11-SS1	0.00-0.61	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
BH11	12/4/2019	11205379-BH11-SS2	0.76-1.37	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH12	12/4/2019	11205379-BH12-SS1	0.00-0.61	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
BH12	12/4/2019	11205379-BH12-SS3	1.52-2.13	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH12	12/4/2019	11205379-BH12-SS4	2.29-2.50	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH13	12/4/2019	11205379-BH13-SS1	0.00-0.61	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH13 (Field Duplicate)	12/4/2019	11205379-DUP2	0.00-0.61	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH13	12/4/2019	11205379-BH13-SS2	0.76-1.19	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
BH13	12/4/2019	11205379-BH13-SS3	1.52-1.77	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH14	12/4/2019	11205379-BH14-SS1	0.00-0.61	B9Y4500	√	√	√	√	√	√	√	√	√	√	√
BH14	12/4/2019	11205379-BH14-SS2	0.76-1.10	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
BH14	12/4/2019	11205379-BH14-SS3	1.52-1.80	B9Y4500	√	NA	√	√	NA	NA	√	√	√	√	√
Trip Blank	11/29/2019	11205379-20-TRIP BLANK	-	B9X8304	√	-	-	√	-	-	-	-	-	-	-
Groundwater Samples															
MW1	1/3/2020	GW-11205379-20-010320-JC-009	-	C002002	√	√	√	√	√	√	√	√	√	-	√
MW2D	1/2/2020	GW-11205379-20-010220-JC-004	-	C000934	√	√	√	√	√	√	√	√	√	-	√
MW2S	1/2/2020	GW-11205379-20-010220-JC-003	-	C000934	√	√	√	√	√	√	√	√	√	-	√
MW3D	1/3/2020	GW-11205379-20-010320-JC-007	-	C002002	√	√	√	√	√	√	√	√	√	-	√
MW3D (Field Duplicate)	1/3/2020	GW-11205379-20-010320-JC-008	-	C002002	√	√	√	√	√	√	√	√	√	-	√
MW3S	1/3/2020	GW-11205379-20-010320-JC-006	-	C002002	√	√	√	√	√	√	√	√	√	-	√
MW4D	1/2/2020	GW-11205379-20-010220-JC-001	-	C000934	√	√	√	√	√	√	√	√	√	-	√
MW5	1/2/2020	GW-11205379-20-010220-JC-002	-	C000934	√	√	√	√	√	√	√	√	√	-	√
MW10	1/3/2020	GW-11205379-20-010320-JC-005	-	C002002	√	√	√	√	√	√	√	√	√	-	√
Trip Blank	9/3/2019	TBLK-FIBB-19-4716	-	C000934	√	-	-	√	-	-	-	-	-	-	-
MW5	2/26/2020	GW-11205379-022620-JC-001		C052740	√	√	√	√	√	√	√	√	√	-	√
MW3D	2/25/2020	GW-11205379-022520-JC-002		C052740	√	√	√	√	√	√	√	√	√	-	√
MW3S	2/25/2020	GW-11205379-022520-JC-003		C052740	√	√	√	√	√	√	√	√	√	-	√
MW1	2/26/2020	GW-11205379-022620-JC-008		C052740	√	√	√	√	√	√	√	√	√	-	√
MW2S	2/26/2020	GW-11205379-022620-JC-009		C052740	√	√	√	√	√	√	√	√	√	-	√
MW2D	2/26/2020	GW-11205379-022620-JC-010		C052740	√	√	√	√	√	√	√	√	√	-	√
MW2D (Field Duplicate)	2/26/2020	GW-11205379-022620-JC-011		C052740	√	√	√	√	√	√	√	√	√	-	√
Trip Blank		TRIP-001		C052740	√	-	-	√	-	-	-	-	-	-	-

Notes:

mBGS	metres below ground surface
-	Not applicable
VOCs	Volatile Organic Compounds
PHCs	Petroleum Hydrocarbon Fractions (F1 to F4)
PAHs	Polycyclic Aromatic Hydrocarbons
NA	Not Analyzed

Table 2
Summary of Monitoring Well and Borehole Details
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Well ID	Date Installed	Northing	Easting	Ground Elevation (m)	Top of Riser Elevation (m)	Total Depth Drilled (m BGS)	Screened Interval (m) Top	Screened Interval (m) Bottom	Screened Interval (m) Top	Screened Interval (m) Bottom	Sandpack Interval (m) Top	Sandpack Interval (m) Bottom	Sandpack Interval (m) Top	Sandpack Interval (m) Bottom	Screened Material
Shallow Overburden Monitoring Wells															
MW1	11/26/19	5027668.515	448936.947	82.53	82.40	5.47	2.41	5.47	80.12	77.06	2.10	5.47	80.43	77.06	Sand, Clay, Weathered Shale
MW2S	11/26/19	5027646.036	448956.593	82.43	82.34	5.34	2.29	5.34	80.14	77.09	1.98	5.34	80.45	77.09	Gravelly Sand, Weathered Shale
MW3S	11/29/19	5027642.051	448935.546	81.58	81.53	4.57	1.52	4.57	80.06	77.01	1.21	4.57	80.37	77.01	Silty Sand, Weathered Shale
MW4S	12/02/19	5027623.848	448917.226	80.27	81.50	2.69	1.17	1.78	79.10	78.49	0.86	1.78	79.41	78.49	Silty Sand, Weathered Shale
MW5	12/04/19	5027604.917	448917.805	80.54	80.13	3.10	1.44	3.10	79.10	77.44	1.11	3.10	79.43	77.44	Silty Sand, Weathered Shale
MW9	12/03/19	5027678.629	448898.487	80.52	80.37	1.83	1.44	1.83	79.08	78.69	1.11	1.83	79.41	78.69	Silty Sand
MW10	12/02/19	5027644.571	448886.323	79.86	79.75	3.81	2.29	3.81	77.57	76.05	1.98	3.81	77.88	76.05	Silty Sand, Weathered Shale
Deep Bedrock Monitoring Wells															
MW2D	11/27/19	5027646.036	448956.593	82.43	82.33	11.28	8.23	11.28	74.20	71.15	7.93	11.28	74.50	71.15	Shale bedrock
MW3D	11/28/19	5027642.051	448935.546	81.58	81.50	11.43	5.34	11.43	76.24	70.15	5.03	11.43	76.55	70.15	Shale bedrock
MW4D	12/03/19	5027621.964	448917.848	80.34	80.20	7.93	1.83	7.93	78.51	72.41	1.53	7.93	78.81	72.41	Shale bedrock
Boreholes															
BH6	12/02/19	5027626.342	448896.247	80.04	-	-	-	-	-	-	-	-	-	-	
BH7	11/29/19	5027643.798	448912.466	80.40	-	-	-	-	-	-	-	-	-	-	
BH8	12/02/19	5027623.431	448936.551	80.82	-	-	-	-	-	-	-	-	-	-	
BH11	12/04/19	5027617.468	448987.177	81.32	-	-	-	-	-	-	-	-	-	-	
BH12	12/04/19	5027580.920	448953.797	81.27	-	-	-	-	-	-	-	-	-	-	
BH13	12/04/19	5027562.877	448996.612	81.37	-	-	-	-	-	-	-	-	-	-	
BH14	12/04/19	5027560.738	448919.382	81.17	-	-	-	-	-	-	-	-	-	-	

Notes:
The ground elevations at the monitoring well locations were surveyed by J.D. Barnes on December 17, 2019.
Elevations were established using GPS equipment and transformed to CVGD-1928 Datum using the federal HT2.0 transformation model.

Table 3

Summary of Well Sampling Data
Phase Two Environmental Site Assessment
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Well ID	Sample Date	pH	Conductivity (mS/cm)	Temperature (^{o}C)	Turbidity (NTU)	Colour	Odour
Shallow Overburden Monitoring Wells							
MW1	1/3/20	7.32	26.9	5.70	0.9	Clear	H_2S odor
MW2S	1/2/20	6.65	18.0	8.16	14.6	Clear	n.d.o
		6.69	18.4	8.65	13.7	Clear	n.d.o
		6.75	19.1	8.23	13.4	Clear	n.d.o
MW3S	1/3/20	6.68	30.5	7.17	23.0	Clear	n.d.o
		6.68	31.1	7.84	22.1	Clear	n.d.o
		6.66	31.3	8.30	21.8	Clear	n.d.o
MW4S	1/2/20				Dry		
MW5	1/2/20	6.98	52.0	6.63	37.9	Clear	n.d.o
		6.97	54.2	6.64	36.2	Clear	n.d.o
		6.98	53.5	6.58	35.5	Clear	n.d.o
MW9	1/2/20				Dry		
MW10	1/3/20	6.27	21.2	8.17	57.4	Clear	n.d.o
		6.33	21.2	7.83	45.1	Clear	n.d.o
		6.35	21.1	7.74	38.9	Clear	n.d.o
Deep Bedrock Monitoring Wells							
MW2D	1/2/20	7.07	14.0	7.98	19.9	Clear	n.d.o
		7.07	13.9	8.05	19.3	Clear	n.d.o
		7.09	13.8	8.10	18.3	Clear	n.d.o
MW3D	1/3/20	7.43	8.70	8.47	0.0	Clear	H_2S odor
		7.43	8.64	8.66	0.0	Clear	H_2S odor
		7.43	8.62	8.78	0.0	Clear	H_2S odor
MW4D	1/2/20	6.98	27.7	9.53	11.6	Clear	n.d.o
		6.98	26.9	9.55	6.6	Clear	n.d.o
		6.97	26.3	9.57	4.8	Clear	n.d.o

Notes:

mS/cm	milliSiemens per centimetre
^{o}C	degrees Celcius
NTU	Nephelometric Turbidity Units
n.d.o.	No distinct odour

Table 4

Summary of Groundwater Level Measurements
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Well ID		Ground Elevation[(1)]	Top of Riser Elevation[(1)]	Groundwater Elevation													
				December 5, 2019			December 13, 2019			January 15, 2020			February 25-26, 2020			April 8, 2020		
		metres	metres	(mBTOR)	(mBGS)	(metres)	(mBTOR)	(mBGS)	(metres)	(mBTOR)	(mBGS)	(metres)	(mBTOR)	(mBGS)	(metres)	(mBTOR)	(mBGS)	(metres)
Shallow Overburden Monitoring Wells																		
MW1	MW1	82.53	82.40	4.91	5.04	77.49	4.93	5.05	77.48	4.88	5.01	77.52	4.97	5.09	77.44	4.85	4.98	77.55
MW2S	MW2S	82.43	82.34	Dry	Dry	Dry	4.52	4.61	77.82	4.45	4.54	77.89	4.50	4.59	77.84	4.28	4.37	78.06
MW3S	MW3S	81.58	81.53	3.71	3.75	77.82	3.78	3.82	77.75	3.67	3.71	77.86	3.82	3.86	77.71	3.61	3.65	77.92
MW4S	MW4S	80.27	80.13	Dry	Dry	Dry	1.30	1.44	78.83	Ice	Ice	Ice	Ice	Ice	Ice	1.35	1.49	78.78
MW5	MW5	80.54	80.41	Dry	Dry	Dry	2.29	2.42	78.12	1.71	1.84	78.70	2.37	2.49	78.05	1.97	2.10	78.44
MW9	MW9	80.52	80.37	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	1.83	1.99	78.54
MW10	MW10	79.86	79.75	2.34	2.46	77.41	2.38	2.50	77.37	Ice	Ice	Ice	Ice	Ice	Ice	2.22	2.34	77.53
Deep Bedrock Monitoring Wells																		
MW2D	MW2D	82.43	82.33	4.87	4.98	77.46	4.89	5.00	77.44	4.84	4.95	77.49	4.86	4.97	77.47	4.75	4.86	77.58
MW3D	MW3D	81.58	81.50	4.20	4.27	77.30	4.29	4.36	77.21	4.30	4.37	77.20	4.35	4.42	77.16	4.14	4.21	77.36
MW4D	MW4D	80.34	80.20	2.95	3.09	77.25	2.98	3.12	77.22	Ice	Ice	Ice	Ice	Ice	Ice	2.79	2.93	77.41

Notes:

(1) Elevations were established using GPS equipment and transformed to CVGD-1928 Datum using the federal HT2.0 transformation model.

mBGS metres Below Gr metres Below Ground Surface.

mBTOR metres Below To metres Below Top of Riser.

The ground elevations at the monitoring well locations were surveyed by J.D. Barnes on December 17, 2019.

Table 5

Summary of Soil Analytical Results
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Sample Location:			**MW1**	**MW1**	**MW1**	**MW1**	**MW2S**	**MW2S**	**MW2S**
Sample ID:			**11205379-20-MW1-SS1**	**11205379-20-MW1-SS3**	**11205379-20-MW1-SS4**	**11205379-20-MW1-SS5**	**11205379-20-MW2S-SS1**	**11205379-20-MW2S-SS2**	**11205379-20-MW2S-SS4**
Sample Date:			**11/26/2019**	**11/26/2019**	**11/26/2019**	**11/26/2019**	**11/26/2019**	**11/26/2019**	**11/26/2019**
Sample Depth:			**0.00-0.61**	**1.52-2.13**	**2.29-2.90**	**3.05-3.66**	**0.00-0.61**	**0.76-1.37**	**1.52-2.13**
BV Lab COA:			**B9X8304**	**B9X8304**	**B9X8304**	**B9X8304**	**B9X8304**	**B9X8304**	**B9X8304**
Parameters	**Units**	**Tbl 7**							
Volatiles									
1,1,1,2-Tetrachloroethane	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	ug/g	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g	3.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethene	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane (Ethylene dibromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Butanone (Methyl ethyl ketone) (MEK)	ug/g	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/g	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acetone	ug/g	16	<0.50	<0.60	<1.6	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g	0.21	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bromodichloromethane	ug/g	13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	ug/g	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane (Methyl bromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g	2.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform (Trichloromethane)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	ug/g	n/a	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g	9.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane (CFC-12)	ug/g	16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	ug/g	2	<0.020	<0.020	0.081	<0.020	<0.020	<0.020	<0.020
Hexane	ug/g	2.8	<0.050	1.3	**3.1**	0.086	<0.050	0.072	<0.050
m&p-Xylenes	ug/g	n/a	<0.020	0.35	1.2	0.041	<0.020	<0.020	<0.020
Methyl tert butyl ether (MTBE)	ug/g	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene chloride	ug/g	0.1	<0.050	<0.050	<0.060	<0.050	<0.050	<0.050	<0.050
o-Xylene	ug/g	n/a	<0.020	0.083	0.31	<0.020	<0.020	<0.020	<0.020
Styrene	ug/g	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	ug/g	0.28	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	ug/g	2.3	<0.020	<0.020	0.19	<0.020	<0.020	<0.020	<0.020
trans-1,2-Dichloroethene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,3-Dichloropropene	ug/g	n/a	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethene	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichlorofluoromethane (CFC-11)	ug/g	4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes (total)	ug/g	3.1	<0.020	0.44	1.5	0.041	<0.020	<0.020	<0.020
Semi-volatiles									
1+2-Methylnaphthalene	ug/g	0.99	<0.0071	-	-	-	<0.071	-	-
1-Methylnaphthalene	ug/g	0.99	<0.0050	-	-	-	<0.050	-	-
2-Methylnaphthalene	ug/g	0.99	<0.0050	-	-	-	<0.050	-	-
Acenaphthene	ug/g	7.9	<0.0050	-	-	-	<0.050	-	-
Acenaphthylene	ug/g	0.15	0.0082	-	-	-	<0.050	-	-
Anthracene	ug/g	0.67	0.035	-	-	-	<0.050	-	-
Benzo(a)anthracene	ug/g	0.5	0.13	-	-	-	<0.050	-	-
Benzo(a)pyrene	ug/g	0.3	0.11	-	-	-	<0.050	-	-
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/g	0.78	0.13	-	-	-	<0.050	-	-
Benzo(g,h,i)perylene	ug/g	6.6	0.055	-	-	-	<0.050	-	-
Benzo(k)fluoranthene	ug/g	0.78	0.047	-	-	-	<0.050	-	-
Chrysene	ug/g	7	0.083	-	-	-	<0.050	-	-
Dibenz(a,h)anthracene	ug/g	0.1	0.015	-	-	-	<0.050	-	-
Fluoranthene	ug/g	0.69	0.25	-	-	-	<0.050	-	-
Fluorene	ug/g	62	<0.0050	-	-	-	<0.050	-	-
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.057	-	-	-	<0.050	-	-
Naphthalene	ug/g	0.6	<0.0050	-	-	-	<0.050	-	-
Phenanthrene	ug/g	6.2	0.094	-	-	-	<0.050	-	-
Pyrene	ug/g	78	0.18	-	-	-	<0.050	-	-
Metals									
Antimony	ug/g	7.5	<0.20	<0.20	0.22	<0.20	<0.20	0.49	0.22
Arsenic	ug/g	18	1.6	5	6.1	7	2.9	5.5	5.4
Barium	ug/g	390	66	130	160	170	89	95	140
Beryllium	ug/g	4	0.35	0.79	0.99	1.2	0.52	0.94	0.99
Boron	ug/g	120	<5.0	8.7	10	5.5	5.1	7.3	5.1
Boron (hot water soluble)	ug/g	1.5	0.18	0.59	0.91	0.3	0.26	0.13	0.82
Cadmium	ug/g	1.2	<0.10	0.12	0.18	0.23	0.13	0.15	0.3
Chromium	ug/g	160	15	25	30	40	19	31	29
Chromium VI (hexavalent)	ug/g	8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cobalt	ug/g	22	5.7	14	22	19	7.8	20	14
Copper	ug/g	140	9.3	27	33	19	15	29	29
Lead	ug/g	120	8.7 J	19 J	20 J	20 J	16 J	40 J	28 J
Mercury	ug/g	0.27	<0.050	0.065	0.077	0.055	<0.050	0.051	0.1
Molybdenum	ug/g	6.9	0.92	1.2	1.5	1.4	1.1	1.4	1.3
Nickel	ug/g	100	11	31	39	32	17	35	29
Selenium	ug/g	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	ug/g	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	ug/g	1	0.08	0.14	0.19	0.22	0.2	0.31	0.2
Uranium	ug/g	23	0.49	0.62	0.83	0.97	0.85	1.1	0.99
Vanadium	ug/g	86	21	29	35	62	24	40	38
Zinc	ug/g	340	29	60	88	130	58	77	97
Petroleum Hydrocarbons									
Petroleum hydrocarbons F1 (C6-C10)	ug/g	55	<10	39	52	<10	<10	<10	<10
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/g	55	<10	38	50	<10	<10	<10	<10
Petroleum hydrocarbons F2 (C10-C16)	ug/g	98	19	39	41	<10	<10	<10	<10
Petroleum hydrocarbons F3 (C16-C34)	ug/g	300	52	<50	<50	<50	96	<50	<50
Petroleum hydrocarbons F4 (C34-C50)	ug/g	2,800	<50	<50	<50	<50	560	<50	<50
Gravimetric heavy hydrocarbons (F4G)	ug/g	2,800	-	-	-	-	2,500 J-	-	-
Pesticides									
2,4'-DDD	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
2,4'-DDD + 4,4'-DDD	ug/g	3.3	<0.0020	-	-	-	<0.010	-	-
2,4'-DDE	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
2,4'-DDE + 4,4'-DDE	ug/g	0.26	<0.0020	-	-	-	<0.010	-	-
2,4'-DDT	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
2,4'-DDT + 4,4'-DDT	ug/g	1.4	<0.0020	-	-	-	<0.010	-	-
4,4'-DDD	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
4,4'-DDE	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
4,4'-DDT	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
Aldrin	ug/g	0.05	<0.0020	-	-	-	<0.010	-	-
alpha-Chlordane	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
Chlordane	ug/g	0.05	<0.0020	-	-	-	<0.010	-	-
Dieldrin	ug/g	0.05	<0.0020	-	-	-	<0.010	-	-
Endosulfan	ug/g	0.04	<0.0020	-	-	-	<0.010	-	-
Endosulfan I	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
Endosulfan II	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
Endrin	ug/g	0.04	<0.0020	-	-	-	<0.010	-	-
gamma-BHC (lindane)	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
gamma-Chlordane	ug/g	n/a	<0.0020	-	-	-	<0.010	-	-
Heptachlor	ug/g	0.15	<0.0020	-	-	-	<0.010	-	-
Heptachlor epoxide	ug/g	0.05	<0.0020	-	-	-	<0.010	-	-
Hexachlorobenzene	ug/g	0.52	<0.0020	-	-	-	<0.010	-	-
Hexachlorobutadiene	ug/g	0.01	<0.0020	-	-	-	<0.010	-	-
Hexachloroethane	ug/g	0.09	<0.0020	-	-	-	<0.010	-	-
Methoxychlor	ug/g	0.13	<0.0050	-	-	-	<0.025	-	-
PCBs									
Aroclor-1242 (PCB-1242)	ug/g	n/a	<0.015	-	-	-	<0.075	-	-
Aroclor-1248 (PCB-1248)	ug/g	n/a	<0.015	-	-	-	<0.075	-	-
Aroclor-1254 (PCB-1254)	ug/g	n/a	<0.015	-	-	-	<0.075	-	-
Aroclor-1260 (PCB-1260)	ug/g	n/a	<0.015	-	-	-	<0.075	-	-
Total PCBs	ug/g	0.35	<0.015	-	-	-	<0.075	-	-
General Chemistry									
Conductivity	mS/cm	0.7	0.3	**1.4**	**2.5**	**1.5**	0.3	0.24	0.67
Cyanide (free)	ug/g	0.05	0.03	<0.01	<0.01	0.01	0.02	0.01	0.01
Moisture	%	n/a	19	5.9	7.5	20	13	16	23
pH, lab	s.u.	n/a	7.27	7.72	7.68	6.77	7.44	7.33	6.09
Sodium adsorption ratio (SAR)	none	5	2.1	0.36	0.97	**5.2**	0.31	0.72	1.3

Footnotes:

1) Analytical results are presented in micrograms per gram (ug/g).
2) < = analyte was not detected at or above the detection limit
3) J - Estimated concentration R - Rejected
4) Shading and bold text indicates the concentration exceeded the 2011 MECP Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Residential/Parkland/ Institutional Property Use for coarse-grained soils.
5) - = not analyzed n/a - not applicable mS/cm = millisiemens per centimetres

Table 5

Summary of Soil Analytical Results
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Sample Location:			MW3S	MW3S	MW3S	MW4S	MW4S	MW4S	MW5	MW5
Sample ID:			11205379-20-MW3S-SS1	11205379-20-MW3S-SS2	11205379-20-MW3S-SS3	11205379-MW4S-SS1	11205379-DUP1	11205379-MW4S-SS2	11205379-MW5-SS1	11205379-MW5-SS2
Sample Date:			11/29/2019	11/29/2019	11/29/2019	12/2/2019	12/2/2019	12/2/2019	12/4/2019	12/4/2019
Sample Depth:			0.00-0.61	0.76-1.37	1.52-2.13	0.00-0.61	0.00-0.61	0.76-1.37	0.00-0.61	0.76-1.07
BV Lab COA:			B9X8304	B9X8304	B9X8304	B9Y4500	B9Y4500 Duplicate	B9Y4500	B9Y4500	B9Y4500
Parameters	**Units**	**Tbl 7**								
Volatiles										
1,1,1,2-Tetrachloroethane	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	ug/g	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g	3.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethene	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane (Ethylene dibromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Butanone (Methyl ethyl ketone) (MEK)	ug/g	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/g	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acetone	ug/g	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g	0.21	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bromodichloromethane	ug/g	13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	ug/g	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane (Methyl bromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g	2.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform (Trichloromethane)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	ug/g	n/a	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g	9.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane (CFC-12)	ug/g	16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	ug/g	2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Hexane	ug/g	2.8	0.12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
m&p-Xylenes	ug/g	n/a	0.036	<0.020	<0.020	<0.020	<0.020	<0.020	0.026	<0.020
Methyl tert butyl ether (MTBE)	ug/g	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene chloride	ug/g	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
o-Xylene	ug/g	n/a	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Styrene	ug/g	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	ug/g	0.28	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	ug/g	2.3	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.025	<0.020
trans-1,2-Dichloroethene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,3-Dichloropropene	ug/g	n/a	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethene	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichlorofluoromethane (CFC-11)	ug/g	4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes (total)	ug/g	3.1	0.036	<0.020	<0.020	<0.020	<0.020	<0.020	0.026	<0.020
Semi-volatiles										
1+2-Methylnaphthalene	ug/g	0.99	<0.071	-	-	<0.0071	<0.071	-	-	<0.0071
1-Methylnaphthalene	ug/g	0.99	<0.050	-	-	<0.0050	<0.050	-	-	<0.0050
2-Methylnaphthalene	ug/g	0.99	<0.050	-	-	<0.0050	<0.050	-	-	<0.0050
Acenaphthene	ug/g	7.9	<0.050	-	-	<0.0050	<0.050	-	-	<0.0050
Acenaphthylene	ug/g	0.15	<0.050	-	-	<0.0050	<0.050	-	-	<0.0050
Anthracene	ug/g	0.67	<0.050	-	-	<0.0050	<0.050	-	-	<0.0050
Benzo(a)anthracene	ug/g	0.5	<0.050	-	-	0.007	<0.050	-	-	<0.0050
Benzo(a)pyrene	ug/g	0.3	<0.050	-	-	0.008	<0.050	-	-	<0.0050
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/g	0.78	<0.050	-	-	0.013	<0.050	-	-	<0.0050
Benzo(g,h,i)perylene	ug/g	6.6	<0.050	-	-	0.0088	<0.050	-	-	<0.0050
Benzo(k)fluoranthene	ug/g	0.78	<0.050	-	-	<0.0050	<0.050	-	-	<0.0050
Chrysene	ug/g	7	<0.050	-	-	0.0082	<0.050	-	-	<0.0050
Dibenz(a,h)anthracene	ug/g	0.1	<0.050	-	-	<0.0050	<0.050	-	-	<0.0050
Fluoranthene	ug/g	0.69	<0.050	-	-	0.016	<0.050	-	-	<0.0050
Fluorene	ug/g	62	<0.050	-	-	<0.0050	<0.050	-	-	<0.0050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	<0.050	-	-	0.0072	<0.050	-	-	<0.0050
Naphthalene	ug/g	0.6	<0.050	-	-	<0.0050	<0.050	-	-	<0.0050
Phenanthrene	ug/g	6.2	<0.050	-	-	0.0078	<0.050	-	-	<0.0050
Pyrene	ug/g	78	<0.050	-	-	0.015	<0.050	-	-	<0.0050
Metals										
Antimony	ug/g	7.5	<0.20	<0.20	<0.20	0.23	<0.20	0.25	<0.20	<0.20
Arsenic	ug/g	18	3.7	1.8	4.4	3.6	3.8	7.8	6.8	3.7
Barium	ug/g	390	260	60	100	160	99	96	15	100
Beryllium	ug/g	4	0.73	0.34	0.83	0.51	0.5	1	<0.20	0.64
Boron	ug/g	120	8.2	5.8	6.2	6.4	6.3	7.7	6.5	5.7
Boron (hot water soluble)	ug/g	1.5	0.11	<0.050	0.23	0.3	0.26	0.18	0.34	0.21
Cadmium	ug/g	1.2	0.29	<0.10	0.22	0.16	0.15	0.16	<0.10	0.15
Chromium	ug/g	160	50	15	26	20	19	30	7.5	23
Chromium VI (hexavalent)	ug/g	8	<0.2	<0.2	<0.2	<0.2 J	<0.2 J	<0.2 J	<0.2 J	<0.2 J
Cobalt	ug/g	22	15	5.7	14	7.6	8.5	12	6.2	11
Copper	ug/g	140	30	14	25	18	17	32	6	27
Lead	ug/g	120	28 J	6.5 J	19 J	29	26	20	20	11
Mercury	ug/g	0.27	<0.050	<0.050	0.093	<0.050	<0.050	<0.050	<0.050	<0.050
Molybdenum	ug/g	6.9	1.2	0.9	1.5	1.3	1.2	1.6	6.7	1.5
Nickel	ug/g	100	36	11	28	18	19	36	14	28
Selenium	ug/g	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	ug/g	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	ug/g	1	0.22	0.11	0.19	0.14	0.15	0.18	0.21	0.2
Uranium	ug/g	23	0.65	0.48	0.84	0.91	0.89	1.3	0.51	0.73
Vanadium	ug/g	86	53	23	36	29	29	37	18	31
Zinc	ug/g	340	97	24	82	59	58	80	12	55
Petroleum Hydrocarbons										
Petroleum hydrocarbons F1 (C6-C10)	ug/g	55	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/g	55	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum hydrocarbons F2 (C10-C16)	ug/g	98	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum hydrocarbons F3 (C16-C34)	ug/g	300	<50	<50	<50	<50	55	<50	200	<50
Petroleum hydrocarbons F4 (C34-C50)	ug/g	2,800	<50	<50	<50	<50	<50	<50	1,000	<50
Gravimetric heavy hydrocarbons (F4G)	ug/g	2,800	-	-	-	-	-	-	**8,700**	-
Pesticides										
2,4'-DDD	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
2,4'-DDD + 4,4'-DDD	ug/g	3.3	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
2,4'-DDE	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
2,4'-DDE + 4,4'-DDE	ug/g	0.26	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
2,4'-DDT	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
2,4'-DDT + 4,4'-DDT	ug/g	1.4	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
4,4'-DDD	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
4,4'-DDE	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
4,4'-DDT	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Aldrin	ug/g	0.05	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
alpha-Chlordane	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Chlordane	ug/g	0.05	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Dieldrin	ug/g	0.05	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Endosulfan	ug/g	0.04	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Endosulfan I	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Endosulfan II	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Endrin	ug/g	0.04	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
gamma-BHC (lindane)	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
gamma-Chlordane	ug/g	n/a	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Heptachlor	ug/g	0.15	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Heptachlor epoxide	ug/g	0.05	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Hexachlorobenzene	ug/g	0.52	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Hexachlorobutadiene	ug/g	0.01	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Hexachloroethane	ug/g	0.09	<0.0020	-	-	<0.0020	<0.0020	-	-	<0.0020
Methoxychlor	ug/g	0.13	<0.0050	-	-	<0.0050	<0.0050	-	-	<0.0050
PCBs										
Aroclor-1242 (PCB-1242)	ug/g	n/a	<0.015	-	-	<0.015	<0.015	-	-	<0.015
Aroclor-1248 (PCB-1248)	ug/g	n/a	<0.015	-	-	<0.015	<0.015	-	-	<0.015
Aroclor-1254 (PCB-1254)	ug/g	n/a	<0.015	-	-	<0.015	<0.015	-	-	<0.015
Aroclor-1260 (PCB-1260)	ug/g	n/a	<0.015	-	-	<0.015	<0.015	-	-	<0.015
Total PCBs	ug/g	0.35	<0.015	-	-	<0.015	<0.015	-	-	<0.015
General Chemistry										
Conductivity	mS/cm	0.7	0.45	0.48	**2.2**	0.66	**0.74**	0.3	**0.99**	**3.1**
Cyanide (free)	ug/g	0.05	0.01	<0.01	<0.01	0.02	0.01	<0.01	<0.01	<0.01
Moisture	%	n/a	19	8.1	15	21	23	19	6	13
pH, lab	s.u.	n/a	7.56	7.84	7.33	7.4	7.37	6.99	8.26	7.67
Sodium adsorption ratio (SAR)	none	5	**6.2**	3.2	**27**	**11**	**13**	**8.5**	**10**	**98**

Footnotes:

1) Analytical results are presented in micrograms per gram (ug/g).
2) < = analyte was not detected at or above the detection limit
3) J - Estimated concentration R - Rejected
4) Shading and bold text indicates the concentration exceeded the 2011 MECP Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Residential/Parkland/ Institutional Property Use for coarse-grained soils.
5) - = not analyzed n/a - not applicable mS/cm = millisiemens per centimetres

Summary of Soil Analytical Results
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Sample Location:			MW5	BH6	BH6	BH7	BH7	BH8	BH8	MW9	MW9
Sample ID:			11205379-MW5-SS3	11205379-BH6-SS1	11205379-BH6-SS2	11205379-20-BH7-SS1	11205379-20-BH7-SS2	11205379-BH8-SS1	11205379-BH8-SS2	11205379-BH9-SS1	11205379-BH9-SS3
Sample Date:			12/4/2019	12/2/2019	12/2/2019	11/29/2019	11/29/2019	12/2/2019	12/2/2019	12/3/2019	12/3/2019
Sample Depth:			1.52-1.68	0.00-0.61	0.76-1.37	0.00-0.61	0.76-1.37	0.00-0.61	0.76-1.37	0.00-0.61	1.52-2.10
BV Lab COA:			B9Y4500	B9Y4500	B9Y4500	B9X8304	B9X8304	B9Y4500	B9Y4500	B9Y4500	B9Y4500
Parameters	**Units**	**Tbl 7**									
Volatiles											
1,1,1,2-Tetrachloroethane	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	ug/g	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g	3.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethene	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane (Ethylene dibromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Butanone (Methyl ethyl ketone) (MEK)	ug/g	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/g	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acetone	ug/g	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g	0.21	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bromodichloromethane	ug/g	13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	ug/g	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane (Methyl bromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g	2.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform (Trichloromethane)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	ug/g	n/a	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g	9.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane (CFC-12)	ug/g	16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	ug/g	2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Hexane	ug/g	2.8	0.41	0.091	<0.050	0.21	<0.050	<0.050	<0.050	0.11	<0.050
m&p-Xylenes	ug/g	n/a	0.022	0.025	<0.020	0.051	<0.020	<0.020	<0.020	0.033	<0.020
Methyl tert butyl ether (MTBE)	ug/g	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene chloride	ug/g	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
o-Xylene	ug/g	n/a	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Styrene	ug/g	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	ug/g	0.28	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	ug/g	2.3	<0.020	0.027	<0.020	0.023	<0.020	<0.020	<0.020	0.027	<0.020
trans-1,2-Dichloroethene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,3-Dichloropropene	ug/g	n/a	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethene	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichlorofluoromethane (CFC-11)	ug/g	4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes (total)	ug/g	3.1	0.022	0.025	<0.020	0.051	<0.020	<0.020	<0.020	0.033	<0.020
Semi-volatiles											
1+2-Methylnaphthalene	ug/g	0.99	-	<0.0071	-	<0.0071	-	<0.071	-	-	<0.0071
1-Methylnaphthalene	ug/g	0.99	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
2-Methylnaphthalene	ug/g	0.99	-	<0.0050	-	0.0059	-	<0.050	-	-	<0.0050
Acenaphthene	ug/g	7.9	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Acenaphthylene	ug/g	0.15	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Anthracene	ug/g	0.67	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Benzo(a)anthracene	ug/g	0.5	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Benzo(a)pyrene	ug/g	0.3	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/g	0.78	-	0.0064	-	<0.0050	-	<0.050	-	-	<0.0050
Benzo(g,h,i)perylene	ug/g	6.6	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Benzo(k)fluoranthene	ug/g	0.78	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Chrysene	ug/g	7	-	0.0057	-	0.005	-	<0.050	-	-	<0.0050
Dibenz(a,h)anthracene	ug/g	0.1	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Fluoranthene	ug/g	0.69	-	0.006	-	<0.0050	-	<0.050	-	-	<0.0050
Fluorene	ug/g	62	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Naphthalene	ug/g	0.6	-	<0.0050	-	<0.0050	-	<0.050	-	-	<0.0050
Phenanthrene	ug/g	6.2	-	0.011	-	0.015	-	<0.050	-	-	<0.0050
Pyrene	ug/g	78	-	0.0073	-	0.0071	-	<0.050	-	-	<0.0050
Metals											
Antimony	ug/g	7.5	0.32	<0.20	0.21	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic	ug/g	18	7.7	2.4	6.3	1.9	6.1	2.9	4.9	1.9	1.9
Barium	ug/g	390	210	160	180	350	120	71	86	140	110
Beryllium	ug/g	4	1	0.23	0.87	0.24	1.3	0.35	0.72	<0.20	0.79
Boron	ug/g	120	10	9.3	7.7	9.2	9	6.1	6.2	8.4	<5.0
Boron (hot water soluble)	ug/g	1.5	0.31	0.53	0.17	0.38	0.13	0.21	0.13	0.41	0.16
Cadmium	ug/g	1.2	0.13	<0.10	0.22	<0.10	<0.10	0.15	0.16	<0.10	0.14
Chromium	ug/g	160	30	9.4	29	8.1	32	17	26	7.7	37
Chromium VI (hexavalent)	ug/g	8	<0.2 J	<0.2	<0.2	<0.2	<0.2	<0.2 J	<0.2 J	<0.2 J	<0.2 J
Cobalt	ug/g	22	19	4.2	16	3.9	13	6.9	13	3.4	9.2
Copper	ug/g	140	42	7.3	44	5.3	36	14	29	4.9	15
Lead	ug/g	120	17	7.9	12	6.6 J	11 J	15	12	6.3	7.1
Mercury	ug/g	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Molybdenum	ug/g	6.9	1.2	1.6	1.5	0.69	1	1.7	1.2	1.5	0.58
Nickel	ug/g	100	43	10	37	8.9	40	14	32	8	37
Selenium	ug/g	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	ug/g	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	ug/g	1	0.19	0.12	0.14	0.11	0.17	0.13	0.17	0.11	0.17
Uranium	ug/g	23	0.91	0.36	0.72	0.31	0.77	1.3	0.8	0.32	0.93
Vanadium	ug/g	86	32	8.3	33	6.4	37	24	30	6.1	45
Zinc	ug/g	340	85	13	120	8	75	36	63	7.3	110
Petroleum Hydrocarbons											
Petroleum hydrocarbons F1 (C6-C10)	ug/g	55	28	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/g	55	28	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum hydrocarbons F2 (C10-C16)	ug/g	98	55	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum hydrocarbons F3 (C16-C34)	ug/g	300	<50	<50	<50	<50	<50	70	<50	<50	<50
Petroleum hydrocarbons F4 (C34-C50)	ug/g	2,800	<50	<50	<50	<50	<50	270	<50	<50	<50
Gravimetric heavy hydrocarbons (F4G)	ug/g	2,800	-	-	-	-	-	1,200	-	-	-
Pesticides											
2,4'-DDD	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
2,4'-DDD + 4,4'-DDD	ug/g	3.3	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
2,4'-DDE	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
2,4'-DDE + 4,4'-DDE	ug/g	0.26	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
2,4'-DDT	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
2,4'-DDT + 4,4'-DDT	ug/g	1.4	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
4,4'-DDD	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
4,4'-DDE	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
4,4'-DDT	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Aldrin	ug/g	0.05	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
alpha-Chlordane	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Chlordane	ug/g	0.05	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Dieldrin	ug/g	0.05	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Endosulfan	ug/g	0.04	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Endosulfan I	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Endosulfan II	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Endrin	ug/g	0.04	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
gamma-BHC (lindane)	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
gamma-Chlordane	ug/g	n/a	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Heptachlor	ug/g	0.15	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Heptachlor epoxide	ug/g	0.05	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Hexachlorobenzene	ug/g	0.52	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Hexachlorobutadiene	ug/g	0.01	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Hexachloroethane	ug/g	0.09	-	<0.0020	-	<0.0020	-	<0.010	-	-	<0.0020
Methoxychlor	ug/g	0.13	-	<0.0050	-	<0.0050	-	<0.025	-	-	<0.0050
PCBs											
Aroclor-1242 (PCB-1242)	ug/g	n/a	-	<0.015	-	<0.015	-	<0.075	-	-	<0.015
Aroclor-1248 (PCB-1248)	ug/g	n/a	-	<0.015	-	<0.015	-	<0.075	-	-	<0.015
Aroclor-1254 (PCB-1254)	ug/g	n/a	-	<0.015	-	<0.015	-	<0.075	-	-	<0.015
Aroclor-1260 (PCB-1260)	ug/g	n/a	-	<0.015	-	<0.015	-	<0.075	-	-	<0.015
Total PCBs	ug/g	0.35	-	<0.015	-	<0.015	-	<0.075	-	-	<0.015
General Chemistry											
Conductivity	mS/cm	0.7	**1.5**	**1.3**	**1.8**	0.43	**1.2**	**0.87**	**2.6**	0.64	**0.74**
Cyanide (free)	ug/g	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
Moisture	%	n/a	6.3	4.4	10	3.8	11	12	14	3.4	16
pH, lab	s.u.	n/a	8.15	7.96	8.01	7.78	7.88	7.49	7.65	8.14	7.08
Sodium adsorption ratio (SAR)	none	5	**62**	**19**	**49**	**13**	**18**	**13**	**51**	**19**	1.9

Footnotes:

1) Analytical results are presented in micrograms per gram (ug/g).
2) < = analyte was not detected at or above the detection limit
3) J - Estimated concentration R - Rejected
4) Shading and bold text indicates the concentration exceeded the 2011 MECP Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Residential/Parkland/ Institutional Property Use for coarse-grained soils.
5) - = not analyzed n/a - not applicable mS/cm = millisiemens per centimetres

Summary of Soil Analytical Results
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Sample Location:			MW9	MW10	MW10	MW10	BH11	BH11	BH12	BH12	BH12
Sample ID:			11205379-BH9-SS4	11205379-BH10-SS1	11205379-BH10-SS3	11205379-BH10-SS4	11205379-BH11-SS1	11205379-BH11-SS2	11205379-BH12-SS1	11205379-BH12-SS3	11205379-BH12-SS4
Sample Date:			12/3/2019	12/2/2019	12/2/2019	12/2/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019
Sample Depth:			2.29-2.50	0.00-0.61	1.52-2.13	2.29-2.90	0.00-0.61	0.76-1.37	0.00-0.61	1.52-2.13	2.29-2.50
BV Lab COA:			B9Y4500	B9Y4500	B9Y4500	B9Y4500	B9Y4500	B9Y4500	B9Y4500	B9Y4500	B9Y4500
Parameters	**Units**	**Tbl 7**									
Volatiles											
1,1,1,2-Tetrachloroethane	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	ug/g	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g	3.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethene	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane (Ethylene dibromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Butanone (Methyl ethyl ketone) (MEK)	ug/g	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/g	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acetone	ug/g	16	<0.50	<0.60	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g	0.21	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bromodichloromethane	ug/g	13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	ug/g	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane (Methyl bromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g	2.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform (Trichloromethane)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	ug/g	n/a	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g	9.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane (CFC-12)	ug/g	16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	ug/g	2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Hexane	ug/g	2.8	0.43	0.24	<0.050	0.086	<0.050	<0.050	<0.050	<0.050	0.91
m&p-Xylenes	ug/g	n/a	<0.020	0.059	<0.020	0.023	<0.020	<0.020	<0.020	<0.020	0.087
Methyl tert butyl ether (MTBE)	ug/g	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene chloride	ug/g	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
o-Xylene	ug/g	n/a	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Styrene	ug/g	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	ug/g	0.28	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	ug/g	2.3	<0.020	0.065	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
trans-1,2-Dichloroethene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,3-Dichloropropene	ug/g	n/a	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethene	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichlorofluoromethane (CFC-11)	ug/g	4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes (total)	ug/g	3.1	<0.020	0.059	<0.020	0.023	<0.020	<0.020	<0.020	<0.020	0.087
Semi-volatiles											
1+2-Methylnaphthalene	ug/g	0.99	-	-	<0.0071	-	<0.071	-	<0.071	-	-
1-Methylnaphthalene	ug/g	0.99	-	-	<0.0050	-	<0.050	-	<0.050	-	-
2-Methylnaphthalene	ug/g	0.99	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Acenaphthene	ug/g	7.9	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Acenaphthylene	ug/g	0.15	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Anthracene	ug/g	0.67	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Benzo(a)anthracene	ug/g	0.5	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Benzo(a)pyrene	ug/g	0.3	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/g	0.78	-	-	0.0056	-	<0.050	-	<0.050	-	-
Benzo(g,h,i)perylene	ug/g	6.6	-	-	0.0066	-	<0.050	-	<0.050	-	-
Benzo(k)fluoranthene	ug/g	0.78	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Chrysene	ug/g	7	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Dibenz(a,h)anthracene	ug/g	0.1	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Fluoranthene	ug/g	0.69	-	-	0.0058	-	<0.050	-	<0.050	-	-
Fluorene	ug/g	62	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Indeno(1,2,3-cd)pyrene	ug/g	0.38	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Naphthalene	ug/g	0.6	-	-	<0.0050	-	<0.050	-	<0.050	-	-
Phenanthrene	ug/g	6.2	-	-	0.0056	-	<0.050	-	<0.050	-	-
Pyrene	ug/g	78	-	-	0.006	-	<0.050	-	<0.050	-	-
Metals											
Antimony	ug/g	7.5	0.32	<0.20	<0.20	0.27	<0.20	0.23	<0.20	0.23	0.36
Arsenic	ug/g	18	8.3	2.6	2.6	5.5	3.3	6.5	4.7	7.1	8.2
Barium	ug/g	390	190	300	210	110	41	88	21	140	170
Beryllium	ug/g	4	0.94	0.21	0.75	0.72	0.25	0.91	0.23	0.8	0.99
Boron	ug/g	120	9.7	7.5	8.2	12	6.1	8.2	6.6	6.5	11
Boron (hot water soluble)	ug/g	1.5	0.27	0.39	1.4	0.17	0.18	0.14	0.14	0.14	0.33
Cadmium	ug/g	1.2	0.14	<0.10	0.16	<0.10	<0.10	0.15	<0.10	0.2	0.1
Chromium	ug/g	160	32	8.1	67	27	12	28	9.4	27	32
Chromium VI (hexavalent)	ug/g	8	<0.2 J	<0.2 J	<0.2 J	<0.2 J	<0.2	<0.2 J	<0.2	<0.2	<0.2 J
Cobalt	ug/g	22	21	3.8	15	14	6.1	20	5.8	19	19
Copper	ug/g	140	41	5.7	37	31	11	35	9.4	49	38
Lead	ug/g	120	20	7.8	14	16	10	21	15	16	25
Mercury	ug/g	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Molybdenum	ug/g	6.9	1.6	2.1	1	1.3	2.3	2.1	4.2	1.3	1.6
Nickel	ug/g	100	46	8.4	43	31	12	38	13	41	43
Selenium	ug/g	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	ug/g	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	ug/g	1	0.17	0.098	0.3	0.11	0.22	0.17	0.23	0.15	0.18
Uranium	ug/g	23	0.93	0.38	0.93	0.7	0.58	0.63	0.53	0.79	0.93
Vanadium	ug/g	86	35	7.1	70	30	21	33	19	31	35
Zinc	ug/g	340	94	11	110	55	18	81	16	110	86
Petroleum Hydrocarbons											
Petroleum hydrocarbons F1 (C6-C10)	ug/g	55	52	<10	<10	<10	<10	<10	<10	<10	**64**
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/g	55	52	<10	<10	<10	<10	<10	<10	<10	**63**
Petroleum hydrocarbons F2 (C10-C16)	ug/g	98	83	<10	<10	49	<10	32	<10	<10	67
Petroleum hydrocarbons F3 (C16-C34)	ug/g	300	55	<50	170	210	91	<50	140	<50	<50
Petroleum hydrocarbons F4 (C34-C50)	ug/g	2,800	<50	<50	660	750	420	100	520	<50	<50
Gravimetric heavy hydrocarbons (F4G)	ug/g	2,800	-	-	1600	2,200	**3,100**	500	**3,900**	-	-
Pesticides											
2,4'-DDD	ug/g	n/a	-	-	<0.0020	-	<0.010	-	<0.010	-	-
2,4'-DDD + 4,4'-DDD	ug/g	3.3	-	-	<0.0020	-	<0.010	-	<0.010	-	-
2,4'-DDE	ug/g	n/a	-	-	<0.0020	-	<0.010	-	<0.010	-	-
2,4'-DDE + 4,4'-DDE	ug/g	0.26	-	-	0.0091	-	<0.010	-	<0.010	-	-
2,4'-DDT	ug/g	n/a	-	-	<0.0020	-	<0.010	-	<0.010	-	-
2,4'-DDT + 4,4'-DDT	ug/g	1.4	-	-	0.0024	-	<0.010	-	<0.010	-	-
4,4'-DDD	ug/g	n/a	-	-	<0.0020	-	<0.010	-	<0.010	-	-
4,4'-DDE	ug/g	n/a	-	-	0.0091	-	<0.010	-	<0.010	-	-
4,4'-DDT	ug/g	n/a	-	-	0.0024	-	<0.010	-	<0.010	-	-
Aldrin	ug/g	0.05	-	-	<0.0020	-	<0.010	-	<0.010	-	-
alpha-Chlordane	ug/g	n/a	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Chlordane	ug/g	0.05	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Dieldrin	ug/g	0.05	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Endosulfan	ug/g	0.04	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Endosulfan I	ug/g	n/a	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Endosulfan II	ug/g	n/a	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Endrin	ug/g	0.04	-	-	<0.0020	-	<0.010	-	<0.010	-	-
gamma-BHC (lindane)	ug/g	n/a	-	-	<0.0020	-	<0.010	-	<0.010	-	-
gamma-Chlordane	ug/g	n/a	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Heptachlor	ug/g	0.15	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Heptachlor epoxide	ug/g	0.05	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Hexachlorobenzene	ug/g	0.52	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Hexachlorobutadiene	ug/g	0.01	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Hexachloroethane	ug/g	0.09	-	-	<0.0020	-	<0.010	-	<0.010	-	-
Methoxychlor	ug/g	0.13	-	-	<0.0050	-	<0.025	-	<0.025	-	-
PCBs											
Aroclor-1242 (PCB-1242)	ug/g	n/a	-	-	<0.015	-	<0.075	-	<0.075	-	-
Aroclor-1248 (PCB-1248)	ug/g	n/a	-	-	<0.015	-	<0.075	-	<0.075	-	-
Aroclor-1254 (PCB-1254)	ug/g	n/a	-	-	<0.015	-	<0.075	-	<0.075	-	-
Aroclor-1260 (PCB-1260)	ug/g	n/a	-	-	<0.015	-	<0.075	-	<0.075	-	-
Total PCBs	ug/g	0.35	-	-	<0.015	-	<0.075	-	<0.075	-	-
General Chemistry											
Conductivity	mS/cm	0.7	0.51	**1.1**	**2.2**	**2.2**	**0.98**	**2.4**	**0.88**	**2.1**	**1.2**
Cyanide (free)	ug/g	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture	%	n/a	4.4	4.2	15	5.5	6.6	7.9	5.7	11	5.8
pH, lab	s.u.	n/a	7.82	8.19	7.55	11.9	8.15	7.68	8.21	7.36	7.86
Sodium adsorption ratio (SAR)	none	5	2.5	**14**	2.7	4.9	**13**	**30**	**16**	**41**	**26**

Footnotes:

1) Analytical results are presented in micrograms per gram (ug/g).
2) < = analyte was not detected at or above the detection limit
3) J - Estimated concentration R - Rejected
4) Shading and bold text indicates the concentration exceeded the 2011 MECP Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Residential/Parkland/ Institutional Property Use for coarse-grained soils.
5) - = not analyzed n/a - not applicable mS/cm = millisiemens per centimetres

Summary of Soil Analytical Results
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Sample Location:			BH13	BH13	BH13	BH13	BH14	BH14	BH14	Trip Blank
Sample ID:			11205379-BH13-SS1	11205379-DUP2	11205379-BH13-SS2	11205379-BH13-SS3	11205379-BH14-SS1	11205379-BH14-SS2	11205379-BH14-SS3	11205379-20-TRIP BLANK
Sample Date:			12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	12/4/2019	11/29/2019
Sample Depth:			0.00-0.61	0.00-0.61	0.76-1.19	1.52-1.77	0.00-0.61	0.76-1.10	1.52-1.80	-
BV Lab COA:			B9Y4500	B9Y4500	B9Y4500	B9Y4500	B9Y4500	B9Y4500	B9Y4500	B9X8304
Parameters	**Units**	**Tbl 7**		**Duplicate**						
Volatiles										
1,1,1,2-Tetrachloroethane	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	ug/g	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g	3.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethene	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane (Ethylene dibromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Butanone (Methyl ethyl ketone) (MEK)	ug/g	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/g	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acetone	ug/g	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g	0.21	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Bromodichloromethane	ug/g	13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	ug/g	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane (Methyl bromide)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g	2.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform (Trichloromethane)	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethene	ug/g	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	ug/g	n/a	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/g	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g	9.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane (CFC-12)	ug/g	16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	ug/g	2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Hexane	ug/g	2.8	<0.050	<0.050	0.059	0.96	0.55	<0.050	0.24	<0.050
m&p-Xylenes	ug/g	n/a	<0.020	<0.020	0.023	0.1	0.089	<0.020	<0.020	<0.020
Methyl tert butyl ether (MTBE)	ug/g	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene chloride	ug/g	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
o-Xylene	ug/g	n/a	<0.020	<0.020	<0.020	0.024	0.021	<0.020	<0.020	<0.020
Styrene	ug/g	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	ug/g	0.28	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	ug/g	2.3	<0.020	<0.020	0.025	<0.020	<0.020	<0.020	<0.020	<0.020
trans-1,2-Dichloroethene	ug/g	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,3-Dichloropropene	ug/g	n/a	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethene	ug/g	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichlorofluoromethane (CFC-11)	ug/g	4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes (total)	ug/g	3.1	<0.020	<0.020	0.023	0.13	0.11	<0.020	<0.020	<0.020
Semi-volatiles										
1+2-Methylnaphthalene	ug/g	0.99	-	-	<0.0071	-	<0.071	-	-	-
1-Methylnaphthalene	ug/g	0.99	-	-	<0.0050	-	<0.050	-	-	-
2-Methylnaphthalene	ug/g	0.99	-	-	<0.0050	-	<0.050	-	-	-
Acenaphthene	ug/g	7.9	-	-	<0.0050	-	<0.050	-	-	-
Acenaphthylene	ug/g	0.15	-	-	<0.0050	-	<0.050	-	-	-
Anthracene	ug/g	0.67	-	-	<0.0050	-	<0.050	-	-	-
Benzo(a)anthracene	ug/g	0.5	-	-	<0.0050	-	<0.050	-	-	-
Benzo(a)pyrene	ug/g	0.3	-	-	<0.0050	-	<0.050	-	-	-
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/g	0.78	-	-	<0.0050	-	<0.050	-	-	-
Benzo(g,h,i)perylene	ug/g	6.6	-	-	<0.0050	-	<0.050	-	-	-
Benzo(k)fluoranthene	ug/g	0.78	-	-	<0.0050	-	<0.050	-	-	-
Chrysene	ug/g	7	-	-	<0.0050	-	<0.050	-	-	-
Dibenz(a,h)anthracene	ug/g	0.1	-	-	<0.0050	-	<0.050	-	-	-
Fluoranthene	ug/g	0.69	-	-	<0.0050	-	<0.050	-	-	-
Fluorene	ug/g	62	-	-	<0.0050	-	<0.050	-	-	-
Indeno(1,2,3-cd)pyrene	ug/g	0.38	-	-	<0.0050	-	<0.050	-	-	-
Naphthalene	ug/g	0.6	-	-	<0.0050	-	<0.050	-	-	-
Phenanthrene	ug/g	6.2	-	-	<0.0050	-	<0.050	-	-	-
Pyrene	ug/g	78	-	-	<0.0050	-	<0.050	-	-	-
Metals										
Antimony	ug/g	7.5	<0.20	<0.20	0.24	0.44	<0.20	<0.20	0.38	-
Arsenic	ug/g	18	5.5	5.1	6.4	7.7	5.8	4.7	8.4	-
Barium	ug/g	390	28	33	87	240	25	110	210	-
Beryllium	ug/g	4	0.24	0.25	0.74	1	0.24	0.76	1.1	-
Boron	ug/g	120	6.6	7.1	6.4	9.7	6.4	8.3	11	-
Boron (hot water soluble)	ug/g	1.5	0.17	0.19	0.11	0.38	0.17	0.091	0.19	-
Cadmium	ug/g	1.2	<0.10	<0.10	0.15	0.32	<0.10	0.17	0.17	-
Chromium	ug/g	160	12	11	24	31	9.4	27	33	-
Chromium VI (hexavalent)	ug/g	8	<0.2	<0.2	<0.2 J	<0.2 J	<0.2 J	<0.2 J	<0.2	-
Cobalt	ug/g	22	6.7	6.8	14	22	6.9	13	**23**	-
Copper	ug/g	140	10	11	38	44	8.7	33	43	-
Lead	ug/g	120	16	15	14	30	15	11	26	-
Mercury	ug/g	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-
Molybdenum	ug/g	6.9	4.2	3.9	1.9	1.8	5.6	1.5	1.9	-
Nickel	ug/g	100	14	14	34	49	15	33	50	-
Selenium	ug/g	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
Silver	ug/g	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
Thallium	ug/g	1	0.22	0.21	0.19	0.17	0.26	0.23	0.2	-
Uranium	ug/g	23	0.54	0.57	0.77	0.87	0.6	0.68	0.72	-
Vanadium	ug/g	86	21	22	33	35	20	32	36	-
Zinc	ug/g	340	17	18	60	120	14	74	100	-
Petroleum Hydrocarbons										
Petroleum hydrocarbons F1 (C6-C10)	ug/g	55	<10	<10	<10	**57**	21	<10	38	<10
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/g	55	<10	<10	<10	**57**	21	<10	38	<10
Petroleum hydrocarbons F2 (C10-C16)	ug/g	98	<10	<10	<10	72	<10	<10	59	-
Petroleum hydrocarbons F3 (C16-C34)	ug/g	300	**420**	**310**	<50	<50	140	<50	<50	-
Petroleum hydrocarbons F4 (C34-C50)	ug/g	2,800	1,000	790	74	<50	630	<50	<50	-
Gravimetric heavy hydrocarbons (F4G)	ug/g	2,800	**4,100**	**3,800**	290	-	**4,300**	-	-	-
Pesticides										
2,4'-DDD	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
2,4'-DDD + 4,4'-DDD	ug/g	3.3	-	-	<0.0020	-	<0.010	-	-	-
2,4'-DDE	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
2,4'-DDE + 4,4'-DDE	ug/g	0.26	-	-	<0.0020	-	<0.010	-	-	-
2,4'-DDT	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
2,4'-DDT + 4,4'-DDT	ug/g	1.4	-	-	<0.0020	-	<0.010	-	-	-
4,4'-DDD	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
4,4'-DDE	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
4,4'-DDT	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
Aldrin	ug/g	0.05	-	-	<0.0020	-	<0.010	-	-	-
alpha-Chlordane	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
Chlordane	ug/g	0.05	-	-	<0.0020	-	<0.010	-	-	-
Dieldrin	ug/g	0.05	-	-	<0.0020	-	<0.010	-	-	-
Endosulfan	ug/g	0.04	-	-	<0.0020	-	<0.010	-	-	-
Endosulfan I	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
Endosulfan II	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
Endrin	ug/g	0.04	-	-	<0.0020	-	<0.010	-	-	-
gamma-BHC (lindane)	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
gamma-Chlordane	ug/g	n/a	-	-	<0.0020	-	<0.010	-	-	-
Heptachlor	ug/g	0.15	-	-	<0.0020	-	<0.010	-	-	-
Heptachlor epoxide	ug/g	0.05	-	-	<0.0020	-	<0.010	-	-	-
Hexachlorobenzene	ug/g	0.52	-	-	<0.0020	-	<0.010	-	-	-
Hexachlorobutadiene	ug/g	0.01	-	-	<0.0020	-	<0.010	-	-	-
Hexachloroethane	ug/g	0.09	-	-	<0.0020	-	<0.010	-	-	-
Methoxychlor	ug/g	0.13	-	-	<0.0050	-	<0.025	-	-	-
PCBs										
Aroclor-1242 (PCB-1242)	ug/g	n/a	-	-	<0.015	-	<0.075	-	-	-
Aroclor-1248 (PCB-1248)	ug/g	n/a	-	-	<0.015	-	<0.075	-	-	-
Aroclor-1254 (PCB-1254)	ug/g	n/a	-	-	<0.015	-	<0.075	-	-	-
Aroclor-1260 (PCB-1260)	ug/g	n/a	-	-	<0.015	-	<0.075	-	-	-
Total PCBs	ug/g	0.35	-	-	<0.015	-	<0.075	-	-	-
General Chemistry										
Conductivity	mS/cm	0.7	**10**	**8.4**	**3**	**1.3**	**2.3**	**4**	**1.7**	-
Cyanide (free)	ug/g	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
Moisture	%	n/a	7.4	8.8	16	5	7	11	7.4	-
pH, lab	s.u.	n/a	8.38	8.34	8.11	7.77	8.19	7.98	7.87	-
Sodium adsorption ratio (SAR)	none	5	**42**	**34**	**57**	**23**	1.6	**62**	**35**	-

Footnotes:

1) Analytical results are presented in micrograms per gram (ug/g).
2) < = analyte was not detected at or above the detection limit
3) J - Estimated concentration R - Rejected
4) Shading and bold text indicates the concentration exceeded the 2011 MECP Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Residential/Parkland/ Institutional Property Use for coarse-grained soils.
5) - = not analyzed n/a - not applicable mS/cm = millisiemens per centimetres

Table 6

Summary of Soil Maximum Concentrations
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Parameters	Units	Tbl 7	Max Concentration	Sample Location	Sample Identification	Sample Date	Depth (m BGS)
Volatile Organic Compounds (VOCs)							
1,1,1,2-Tetrachloroethane	ug/g	0.06	<0.05	-	-	-	-
1,1,1-Trichloroethane	ug/g	0.38	<0.05	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/g	0.05	<0.05	-	-	-	-
1,1,2-Trichloroethane	ug/g	0.05	<0.05	-	-	-	-
1,1-Dichloroethane	ug/g	3.5	<0.05	-	-	-	-
1,1-Dichloroethene	ug/g	0.05	<0.05	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/g	0.05	<0.05	-	-	-	-
1,2-Dichlorobenzene	ug/g	3.4	<0.05	-	-	-	-
1,2-Dichloroethane	ug/g	0.05	<0.05	-	-	-	-
1,2-Dichloropropane	ug/g	0.05	<0.05	-	-	-	-
1,3-Dichlorobenzene	ug/g	4.8	<0.05	-	-	-	-
1,4-Dichlorobenzene	ug/g	0.08	<0.05	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/g	16	<0.5	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/g	1.7	<0.5	-	-	-	-
Acetone	ug/g	16	<1.6	-	-	-	-
Benzene	ug/g	0.21	<0.02	-	-	-	-
Bromodichloromethane	ug/g	13	<0.05	-	-	-	-
Bromoform	ug/g	0.27	<0.05	-	-	-	-
Bromomethane (Methyl bromide)	ug/g	0.05	<0.05	-	-	-	-
Carbon tetrachloride	ug/g	0.05	<0.05	-	-	-	-
Chlorobenzene	ug/g	2.4	<0.05	-	-	-	-
Chloroform (Trichloromethane)	ug/g	0.05	<0.05	-	-	-	-
cis-1,2-Dichloroethene	ug/g	3.4	<0.05	-	-	-	-
cis-1,3-Dichloropropene	ug/g	n/a	<0.03	-	-	-	-
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/g	0.05	<0.05	-	-	-	-
Dibromochloromethane	ug/g	9.4	<0.05	-	-	-	-
Dichlorodifluoromethane (CFC-12)	ug/g	16	<0.05	-	-	-	-
Ethylbenzene	ug/g	2	0.081	MW1	11205379-20-MW1-SS4	11/26/2019	2.29-2.90
Hexane	ug/g	2.8	**3.1**	MW1	11205379-20-MW1-SS4	11/26/2019	2.29-2.90
m&p-Xylenes	ug/g	n/a	1.2	MW1	11205379-20-MW1-SS4	11/26/2019	2.29-2.90
Methyl tert butyl ether (MTBE)	ug/g	0.75	<0.05	-	-	-	-
Methylene chloride	ug/g	0.1	<0.06	-	-	-	-
o-Xylene	ug/g	n/a	0.31	MW1	11205379-20-MW1-SS4	11/26/2019	2.29-2.90
Styrene	ug/g	0.7	<0.05	-	-	-	-
Tetrachloroethene	ug/g	0.28	<0.05	-	-	-	-
Toluene	ug/g	2.3	0.19	MW1	11205379-20-MW1-SS4	11/26/2019	2.29-2.90
trans-1,2-Dichloroethene	ug/g	0.08	<0.05	-	-	-	-
trans-1,3-Dichloropropene	ug/g	n/a	<0.04	-	-	-	-
Trichloroethene	ug/g	0.06	<0.05	-	-	-	-
Trichlorofluoromethane (CFC-11)	ug/g	4	<0.05	-	-	-	-
Vinyl chloride	ug/g	0.02	<0.02	-	-	-	-
Xylenes (total)	ug/g	3.1	1.5	MW1	11205379-20-MW1-SS4	11/26/2019	2.29-2.90
Polycyclic Aromatic Hydrocarbons (PAHs)							
1+2-Methylnaphthalene	ug/g	0.99	<0.071	-	-	-	-
1-Methylnaphthalene	ug/g	0.99	<0.05	-	-	-	-
2-Methylnaphthalene	ug/g	0.99	0.0059	BH7	11205379-20-BH7-SS1	11/29/2019	0.00-0.61
Acenaphthene	ug/g	7.9	<0.05	-	-	-	-
Acenaphthylene	ug/g	0.15	0.0082	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Anthracene	ug/g	0.67	0.035	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Benzo(a)anthracene	ug/g	0.5	0.13	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Benzo(a)pyrene	ug/g	0.3	0.11	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/g	0.78	0.13	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Benzo(g,h,i)perylene	ug/g	6.6	0.055	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Benzo(k)fluoranthene	ug/g	0.78	0.047	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Chrysene	ug/g	7	0.083	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Dibenz(a,h)anthracene	ug/g	0.1	0.015	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Fluoranthene	ug/g	0.69	0.25	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Fluorene	ug/g	62	<0.05	-	-	-	-
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.057	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Naphthalene	ug/g	0.6	<0.05	-	-	-	-
Phenanthrene	ug/g	6.2	0.094	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Pyrene	ug/g	78	0.18	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Metals							
Antimony	ug/g	7.5	0.49	MW2S	11205379-20-MW2S-SS2	11/26/2019	0.76-1.37
Arsenic	ug/g	18	8.4	BH14	11205379-BH14-SS3	12/4/2019	1.52-1.80
Barium	ug/g	390	350	BH7	11205379-20-BH7-SS1	11/29/2019	0.00-0.61
Beryllium	ug/g	4	1.3	BH7	11205379-20-BH7-SS2	11/29/2019	0.76-1.37
Boron	ug/g	120	12	MW10	11205379-BH10-SS4	12/2/2019	2.29-2.90
Boron (hot water soluble)	ug/g	1.5	1.4	MW10	11205379-BH10-SS3	12/2/2019	1.52-2.13
Cadmium	ug/g	1.2	0.32	BH13	11205379-BH13-SS3	12/4/2019	1.52-1.77
Chromium	ug/g	160	67	MW10	11205379-BH10-SS3	12/2/2019	1.52-2.13
Chromium VI (hexavalent)	ug/g	8	<0.2	-	-	-	-
Cobalt	ug/g	22	**23**	BH14	11205379-BH14-SS3	12/4/2019	1.52-1.80
Copper	ug/g	140	49	BH12	11205379-BH12-SS3	12/4/2019	1.52-2.13
Lead	ug/g	120	40	MW2S	11205379-20-MW2S-SS2	11/26/2019	0.76-1.37
Mercury	ug/g	0.27	0.1	MW2S	11205379-20-MW2S-SS4	11/26/2019	1.52-2.13
Molybdenum	ug/g	6.9	6.7	MW5	11205379-MW5-SS1	12/4/2019	0.00-0.61
Nickel	ug/g	100	50	BH14	11205379-BH14-SS3	12/4/2019	1.52-1.80
Selenium	ug/g	2.4	<0.5	-	-	-	-
Silver	ug/g	20	<0.2	-	-	-	-
Thallium	ug/g	1	0.31	MW2S	11205379-20-MW2S-SS2	11/26/2019	0.76-1.37
Uranium	ug/g	23	1.3	BH8	11205379-BH8-SS1	12/2/2019	0.00-0.61
Vanadium	ug/g	86	70	MW10	11205379-BH10-SS3	12/2/2019	1.52-2.13
Zinc	ug/g	340	130	MW1	11205379-20-MW1-SS5	11/26/2019	3.05-3.66

Table 6

Summary of Soil Maximum Concentrations
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Parameters	Units	Tbl 7	Max Concentration	Sample Location	Sample Identification	Sample Date	Depth (m BGS)
Petroleum Hydrocarbons (PHCs)							
Petroleum hydrocarbons F1 (C6-C10)	ug/g	55	**64**	BH12	11205379-BH12-SS4	12/4/2019	2.29-2.50
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/g	55	**63**	BH12	11205379-BH12-SS4	12/4/2019	2.29-2.50
Petroleum hydrocarbons F2 (C10-C16)	ug/g	98	83	MW9	11205379-BH9-SS4	12/3/2019	2.29-2.50
Petroleum hydrocarbons F3 (C16-C34)	ug/g	300	**420**	BH13	11205379-BH13-SS1	12/4/2019	0.00-0.61
Petroleum hydrocarbons F4 (C34-C50)	ug/g	2,800	1,000	BH13	11205379-BH13-SS1	12/4/2019	0.00-0.61
Gravimetric heavy hydrocarbons (F4G)	ug/g	2,800	**8,700**	MW5	11205379-MW5-SS1	12/4/2019	0.00-0.61
Pesticides							
2,4'-DDD	ug/g	n/a	<0.01	-	-	-	-
2,4'-DDD + 4,4'-DDD	ug/g	3.3	<0.01	-	-	-	-
2,4'-DDE	ug/g	n/a	<0.01	-	-	-	-
2,4'-DDE + 4,4'-DDE	ug/g	0.26	0.0091	MW10	11205379-BH10-SS3	12/2/2019	1.52-2.13
2,4'-DDT	ug/g	n/a	<0.01	-	-	-	-
2,4'-DDT + 4,4'-DDT	ug/g	1.4	0.0024	MW10	11205379-BH10-SS3	12/2/2019	1.52-2.13
4,4'-DDD	ug/g	n/a	<0.01	-	-	-	-
4,4'-DDE	ug/g	n/a	0.0091	MW10	11205379-BH10-SS3	12/2/2019	1.52-2.13
4,4'-DDT	ug/g	n/a	0.0024	MW10	11205379-BH10-SS3	12/2/2019	1.52-2.13
Aldrin	ug/g	0.05	<0.01	-	-	-	-
alpha-Chlordane	ug/g	n/a	<0.01	-	-	-	-
Chlordane	ug/g	0.05	<0.01	-	-	-	-
Dieldrin	ug/g	0.05	<0.01	-	-	-	-
Endosulfan	ug/g	0.04	<0.01	-	-	-	-
Endosulfan I	ug/g	n/a	<0.01	-	-	-	-
Endosulfan II	ug/g	n/a	<0.01	-	-	-	-
Endrin	ug/g	0.04	<0.01	-	-	-	-
gamma-BHC (lindane)	ug/g	n/a	<0.01	-	-	-	-
gamma-Chlordane	ug/g	n/a	<0.01	-	-	-	-
Heptachlor	ug/g	0.15	<0.01	-	-	-	-
Heptachlor epoxide	ug/g	0.05	<0.01	-	-	-	-
Hexachlorobenzene	ug/g	0.52	<0.01	-	-	-	-
Hexachlorobutadiene	ug/g	0.01	<0.01	-	-	-	-
Hexachloroethane	ug/g	0.09	<0.01	-	-	-	-
Methoxychlor	ug/g	0.13	<0.025	-	-	-	-
Polychlorinated Biphenyls (PCBs)							
Aroclor-1242 (PCB-1242)	ug/g	n/a	<0.075	-	-	-	-
Aroclor-1248 (PCB-1248)	ug/g	n/a	<0.075	-	-	-	-
Aroclor-1254 (PCB-1254)	ug/g	n/a	<0.075	-	-	-	-
Aroclor-1260 (PCB-1260)	ug/g	n/a	<0.075	-	-	-	-
Total PCBs	ug/g	0.35	<0.075	-	-	-	-
General Chemistry							
Conductivity	mS/cm	0.7	**10**	BH13	11205379-BH13-SS1	12/4/2019	0.00-0.61
Cyanide (free)	ug/g	0.05	0.03	MW1	11205379-20-MW1-SS1	11/26/2019	0.00-0.61
Moisture	%	n/a	23	MW2S	11205379-20-MW2S-SS4	11/26/2019	1.52-2.13
pH, lab	s.u.	n/a	11.9	MW10	11205379-BH10-SS4	12/2/2019	2.29-2.90
Sodium adsorption ratio (SAR)	none	5	**98**	MW5	11205379-MW5-SS2	12/4/2019	0.76-1.07

Footnotes:
1) Analytical results are presented in micrograms per gram (ug/g).
2) < = analyte was not detected at or above the detection limit
3) Shading and bold text indicates the concentration exceeded the MECP 2011 Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition (Residential/Parkland/Institutional Property Use, Coarse-grained soils).
4) - = not detected n/a - not applicable
mS/cm = millisiemens per centimetres

Table 7
Summary of Groundwater Analytical Results
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Sample Location:			MW1	MW1	MW2D	MW2D	MW2D	MW2S
Sample ID:			GW-11205379-20-010320-JC-009	GW-11205379-022620-JC-008	GW-11205379-20-010220-JC-004	GW-11205379-022620-JC-010	GW-11205379-022620-JC-011	GW-11205379-20-010220-JC-003
Sample Date:			1/3/2020	2/26/2020	1/2/2020	2/26/2020	2/26/2020	1/2/2020
field_sdg			C002002	C052740	C000934	C052740	C052740	C000934
Parameters	**Units**	**Tbl 7**					**Duplicate**	
Volatile Organic Compounds (VOCs)								
1,1,1,2-Tetrachloroethane	ug/L	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	ug/L	23	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	ug/L	11	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethene	ug/L	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	ug/L	150	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	ug/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	ug/L	0.58	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,3-Dichlorobenzene	ug/L	7,600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	21,000	<10	<10	<10	<10	<10	<10
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5,200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	ug/L	100,000	<10	<10	<10	<10	<10	<10
Benzene	ug/L	0.5	<0.20	<0.20	**1.5**	**1.9**	**1.8**	<0.20
Bromodichloromethane	ug/L	67,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane (Methyl bromide)	ug/L	0.89	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	ug/L	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	ug/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform (Trichloromethane)	ug/L	2	<0.20	<0.20	0.24	<0.20	<0.20	<0.20
cis-1,2-Dichloroethene	ug/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	ug/L	n/a	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	ug/L	65,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane (CFC-12)	ug/L	3,500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	ug/L	54	<0.20	<0.20	0.29	0.22	0.21	<0.20
Hexane	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	ug/L	n/a	<0.20	<0.20	3.1	1.7	1.6	0.29
Methyl tert butyl ether (MTBE)	ug/L	15	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene chloride	ug/L	26	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	n/a	<0.20	<0.20	1	0.54	0.52	0.33
Styrene	ug/L	43	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	ug/L	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	ug/L	320	<0.20	<0.20	5.3	0.53	0.52	0.28
trans-1,2-Dichloroethene	ug/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,3-Dichloropropene	ug/L	n/a	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Trichloroethene	ug/L	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane (CFC-11)	ug/L	2,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl chloride	ug/L	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylenes (total)	ug/L	72	<0.20	<0.20	4.1	2.2	2.1	0.61
Polycyclic Aromatic Hydrocarbons (PAHs)								
1+2-Methylnaphthalene	ug/L	1,500	<0.071	<0.071	<0.071	<0.071	<0.071	<0.071
1-Methylnaphthalene	ug/L	1,500	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Methylnaphthalene	ug/L	1,500	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthene	ug/L	17	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/L	1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/L	1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/L	1.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/L	0.81	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/L	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	ug/L	0.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	ug/L	0.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	ug/L	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene	ug/L	0.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/L	44	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	ug/L	290	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/L	0.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Naphthalene	ug/L	7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	ug/L	380	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Pyrene	ug/L	5.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Metals								
Antimony (dissolved)	ug/L	16,000	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Arsenic (dissolved)	ug/L	1,500	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium (dissolved)	ug/L	23,000	220	69	590	430	430	140
Beryllium (dissolved)	ug/L	53	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Boron (dissolved)	ug/L	36,000	410	430	510	450	460	610
Cadmium (dissolved)	ug/L	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chromium (dissolved)	ug/L	640	<25	<25	<25	<25	<25	<25
Chromium VI (hexavalent)	ug/L	110	<2.5	<2.5	<2.5	<0.50	<0.50	<2.5
Cobalt (dissolved)	ug/L	52	4.7	4.5	<2.5	<2.5	<2.5	13
Copper (dissolved)	ug/L	69	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Lead (dissolved)	ug/L	20	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Mercury	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum (dissolved)	ug/L	7,300	12	14	<2.5	<2.5	<2.5	29
Nickel (dissolved)	ug/L	390	15	13	<5.0	<5.0	<5.0	33
Selenium (dissolved)	ug/L	50	<10	<10	<10	<10	<10	<10
Silver (dissolved)	ug/L	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Sodium (dissolved)	ug/L	1,800,000	**5,200,000**	**3,700,000**	**2,400,000**	**3,500,000**	**3,500,000**	**3,200,000**
Thallium (dissolved)	ug/L	400	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Uranium (dissolved)	ug/L	330	18	24	1.3	2.8	3	14
Vanadium (dissolved)	ug/L	200	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Zinc (dissolved)	ug/L	890	<25	<25	<25	<25	<25	<25
Petroleum Hydrocarbons (PHCs)								
Petroleum hydrocarbons F1 (C6-C10)	ug/L	420	<25	<25	<25	31	31	<25
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/L	420	<25	<25	<25	26	26	<25
Petroleum hydrocarbons F2 (C10-C16)	ug/L	150	<100	<100	<100	<100	<100	<100
Petroleum hydrocarbons F3 (C16-C34)	ug/L	500	<200	<200	<200	<200	<200	<200
Petroleum hydrocarbons F4 (C34-C50)	ug/L	500	<200	<200	<200	<200	<200	<200
Pesticides								
2,4'-DDD	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
2,4'-DDD + 4,4'-DDD	ug/L	1.8	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
2,4'-DDE	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
2,4'-DDE + 4,4'-DDE	ug/L	17	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
2,4'-DDT	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
2,4'-DDT + 4,4'-DDT	ug/L	0.05	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
4,4'-DDD	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
4,4'-DDE	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
4,4'-DDT	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Aldrin	ug/L	3	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
alpha-Chlordane	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Chlordane	ug/L	0.06	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Dieldrin	ug/L	0.56	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Endosulfan	ug/L	0.56	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Endosulfan I	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Endosulfan II	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Endrin	ug/L	0.36	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
gamma-BHC (lindane)	ug/L	n/a	<0.003	<0.003	<0.003 J	<0.003	<0.003	<0.003
gamma-Chlordane	ug/L	n/a	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Heptachlor	ug/L	0.038	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Heptachlor epoxide	ug/L	0.038	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Hexachlorobenzene	ug/L	3.1	<0.005	<0.005	<0.005 J	<0.005	<0.005	<0.005
Hexachlorobutadiene	ug/L	0.012	<0.009	<0.009	<0.009 J	<0.009	<0.009	<0.009
Hexachloroethane	ug/L	0.17	<0.01	<0.01	<0.01 J	<0.01	<0.01	<0.01
Methoxychlor	ug/L	0.3	<0.01	<0.01	<0.01 J	<0.01	<0.01	<0.01
Polychlorinated Biphenyls (PCBs)								
Aroclor-1242 (PCB-1242)	ug/L	n/a	<0.05	<0.05	<0.05 J	<0.05	<0.05	<0.05
Aroclor-1248 (PCB-1248)	ug/L	n/a	<0.05	<0.05	<0.05 J	<0.05	<0.05	<0.05
Aroclor-1254 (PCB-1254)	ug/L	n/a	<0.05	<0.05	<0.05 J	<0.05	<0.05	<0.05
Aroclor-1260 (PCB-1260)	ug/L	n/a	<0.05	<0.05	<0.05 J	<0.05	<0.05	<0.05
Total PCBs	ug/L	0.2	<0.05	<0.05	<0.05 J	<0.05	<0.05	<0.05
General Chemistry								
Chloride (dissolved)	ug/L	1,800,000	**8,500,000**	**5,700,000**	**4,300,000**	**6,800,000**	**7,100,000**	**6,200,000**
Conductivity	mS/cm	n/a	26.1	20	14.4	22.9	23.2	19.4
Cyanide (free)	ug/L	52	<1	<1	<1	<1	<1	<1
pH, lab	s.u.	n/a	7.69	7.67	7.74	7.61	7.62	7.61

Footnotes:

1) Analytical results are presented in micrograms per litre (ug/L).
2) < = analyte was not detected at or above the detection limit
3) J - Estimated concentration R - Rejected n/a - not applicable
4) Shading and bold text indicates the concentration exceeded the 2011 MECP Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Residential/Parkland/ Institutional Property Use for coarse-grained soils.
5) mS/cm = millisiemens per centimetres

Table 7
Summary of Groundwater Analytical Results
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Sample Location:		MW2S	MW3D	MW3D	MW3D	MW3S	MW3S
Sample ID:		GW-11205379-022620-JC-009	GW-11205379-20-010320-JC-007	GW-11205379-20-010320-JC-008	GW-11205379-022520-JC-002	GW-11205379-20-010320-JC-006	GW-11205379-022520-JC-003
Sample Date:		2/26/2020	1/3/2020	1/3/2020	2/25/2020	1/3/2020	2/25/2020
field_sdg		C052740	C002002	C002002	C052740	C002002	C052740
Parameters	**Units**			**Duplicate**			
Volatile Organic Compounds (VOCs)							
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dibromoethane (Ethylene dibromide)	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	<10	<10	<10	<10	<10	<10
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	ug/L	<10	<10	<10	<10	<10	<10
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane (Methyl bromide)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform (Trichloromethane)	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,2-Dichloroethene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane (CFC-12)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Hexane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	ug/L	0.36	0.39	0.41	0.23	<0.20	<0.20
Methyl tert butyl ether (MTBE)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene chloride	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	0.3	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	ug/L	0.41	0.36	0.35	0.32	<0.20	<0.20
trans-1,2-Dichloroethene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Trichloroethene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane (CFC-11)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylenes (total)	ug/L	0.66	0.39	0.41	0.23	<0.20	<0.20
Polycyclic Aromatic Hydrocarbons (PAHs)							
1+2-Methylnaphthalene	ug/L	<0.071	<0.071	<0.071	<0.071	<0.071	<0.071
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Naphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	ug/L	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Metals							
Antimony (dissolved)	ug/L	<2.5	<0.50	<0.50	<0.50	<2.5	<5.0
Arsenic (dissolved)	ug/L	<5.0	<1.0	<1.0	<1.0	<5.0	<10
Barium (dissolved)	ug/L	110	900	890	670	140	130
Beryllium (dissolved)	ug/L	<2.5	<0.50	<0.50	<0.50	<2.5	<5.0
Boron (dissolved)	ug/L	590	440	440	410	240	170
Cadmium (dissolved)	ug/L	<0.50	<0.10	<0.10	<0.10	<0.50	<1.0
Chromium (dissolved)	ug/L	<25	<5.0	<5.0	<5.0	<25	<50
Chromium VI (hexavalent)	ug/L	<2.5	<0.50	<0.50	<0.50	<2.5	<2.5
Cobalt (dissolved)	ug/L	13	<0.50	<0.50	<0.50	<2.5	<5.0
Copper (dissolved)	ug/L	<5.0	<1.0	<1.0	<1.0	<5.0	<10
Lead (dissolved)	ug/L	<2.5	<0.50	<0.50	<0.50	<2.5	<5.0
Mercury	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum (dissolved)	ug/L	19	<0.50	<0.50	<0.50	13	7.5
Nickel (dissolved)	ug/L	29	<1.0	<1.0	<1.0	7.2	<10
Selenium (dissolved)	ug/L	<10	17 J	8.7 J	3.5	<10	<20
Silver (dissolved)	ug/L	<0.50	<0.10	<0.10	<0.10	<0.50	<1.0
Sodium (dissolved)	ug/L	**2,800,000**	1,500,000	1,500,000	1,700,000	**5,900,000**	**7,700,000**
Thallium (dissolved)	ug/L	<0.25	<0.050	<0.050	<0.050	<0.25	<0.50
Uranium (dissolved)	ug/L	9.7	<0.10	<0.10	<0.10	4.6	3.9
Vanadium (dissolved)	ug/L	<2.5	<0.50	<0.50	<0.50	<2.5	<5.0
Zinc (dissolved)	ug/L	<25	<5.0	<5.0	<5.0	<25	<50
Petroleum Hydrocarbons (PHCs)							
Petroleum hydrocarbons F1 (C6-C10)	ug/L	<25	<25	<25	<25	<25	<25
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/L	<25	<25	<25	<25	<25	<25
Petroleum hydrocarbons F2 (C10-C16)	ug/L	<100	<100	<100	<100	<100	<100
Petroleum hydrocarbons F3 (C16-C34)	ug/L	<200	<200	<200	<200	<200	<200
Petroleum hydrocarbons F4 (C34-C50)	ug/L	<200	<200	<200	<200	<200	<200
Pesticides							
2,4'-DDD	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4'-DDD + 4,4'-DDD	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4'-DDE	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4'-DDE + 4,4'-DDE	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4'-DDT	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4'-DDT + 4,4'-DDT	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4,4'-DDD	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4,4'-DDE	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4,4'-DDT	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
alpha-Chlordane	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dieldrin	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan I	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan II	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
gamma-BHC (lindane)	ug/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
gamma-Chlordane	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	ug/L	<0.005	R	<0.005	<0.005	<0.005	<0.005
Heptachlor epoxide	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	ug/L	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Hexachloroethane	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Methoxychlor	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Polychlorinated Biphenyls (PCBs)							
Aroclor-1242 (PCB-1242)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor-1248 (PCB-1248)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor-1254 (PCB-1254)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor-1260 (PCB-1260)	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total PCBs	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
General Chemistry							
Chloride (dissolved)	ug/L	**6,200,000**	**2,500,000**	**2,500,000**	**3,000,000**	**10,000,000**	**12,000,000**
Conductivity	mS/cm	19.4	8.21	8.24	10.2	29.3	35.3
Cyanide (free)	ug/L	<1	<1	<1	1	2	1
pH, lab	s.u.	7.51	7.74	7.8	8	7.68	7.54

Footnotes:

1) Analytical results are presented in micrograms per litre (ug/L).
2) < = analyte was not detected at or above the detection limit
3) J - Estimated concentration R - Rejected n/a - not applicable
4) Shading and bold text indicates the concentration exceeded the 2(MECP Table 7: Generic Site Condition Standards for Shallow Soils ir Potable Ground Water Condition - Residential/Parkland/ Institutional Use for coarse-grained soils.
5) mS/cm = millisiemens per centimetres

Table 7
Summary of Groundwater Analytical Results
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Sample Location:		MW4D	MW5	MW5	MW10	Trip Blank	Trip Blank
Sample ID:		GW-11205379-20-010220-JC-001	GW-11205379-20-010220-JC-002	GW-11205379-022620-JC-001	GW-11205379-20-010320-JC-005	TBLK-FIBB-19-4716	TRIP-001
Sample Date:		1/2/2020	1/2/2020	2/26/2020	1/3/2020	9/3/2019	11/7/2019
field_sdg		C000934	C000934	C052740	C002002	C000934	C052740
Parameters	**Units**						
Volatile Organic Compounds (VOCs)							
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dibromoethane (Ethylene dibromide)	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	<10	<10	<10	<10	<10	<10
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	ug/L	<10	23	<10	<10	<10	<10
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane (Methyl bromide)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform (Trichloromethane)	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,2-Dichloroethene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane (CFC-12)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Hexane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	ug/L	0.56	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert butyl ether (MTBE)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene chloride	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	ug/L	0.71	<0.20	<0.20	<0.20	<0.20	<0.20
trans-1,2-Dichloroethene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Trichloroethene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane (CFC-11)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylenes (total)	ug/L	0.56	<0.20	<0.20	<0.20	<0.20	<0.20
Polycyclic Aromatic Hydrocarbons (PAHs)							
1+2-Methylnaphthalene	ug/L	<0.071	<0.071	<0.071	<0.071	--	--
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Acenaphthene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Benzo(a)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	--	--
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Chrysene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Naphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Phenanthrene	ug/L	<0.030	<0.030	<0.030	<0.030	--	--
Pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	--	--
Metals							
Antimony (dissolved)	ug/L	<2.5	<2.5	<5.0	<2.5	--	--
Arsenic (dissolved)	ug/L	<5.0	<5.0	<10	<5.0	--	--
Barium (dissolved)	ug/L	310	170	240	75	--	--
Beryllium (dissolved)	ug/L	<2.5	<2.5	<5.0	<2.5	--	--
Boron (dissolved)	ug/L	370	200	120	330	--	--
Cadmium (dissolved)	ug/L	<0.50	2	1.2	<0.50	--	--
Chromium (dissolved)	ug/L	<25	<25	<50	<25	--	--
Chromium VI (hexavalent)	ug/L	<2.5	2.7	<2.5	<2.5	--	--
Cobalt (dissolved)	ug/L	<2.5	17	12	5.8	--	--
Copper (dissolved)	ug/L	<5.0	<5.0	<10	<5.0	--	--
Lead (dissolved)	ug/L	<2.5	<2.5	<5.0	<2.5	--	--
Mercury	ug/L	<0.1	<0.1	<0.1	<0.1	--	--
Molybdenum (dissolved)	ug/L	<2.5	33	16	<2.5	--	--
Nickel (dissolved)	ug/L	<5.0	44	31	12	--	--
Selenium (dissolved)	ug/L	<10	43	<20	<10	--	--
Silver (dissolved)	ug/L	<0.50	<0.50	<1.0	<0.50	--	--
Sodium (dissolved)	ug/L	**4,400,000**	**11,000,000**	**18,000,000**	**3,700,000**	--	--
Thallium (dissolved)	ug/L	<0.25	0.35	<0.50	<0.25	--	--
Uranium (dissolved)	ug/L	1.8	120	22	8.3	--	--
Vanadium (dissolved)	ug/L	<2.5	<2.5	<5.0	<2.5	--	--
Zinc (dissolved)	ug/L	<25	<25	<50	<25	--	--
Petroleum Hydrocarbons (PHCs)							
Petroleum hydrocarbons F1 (C6-C10)	ug/L	<25	<25	<25	<25	<25	<25
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/L	<25	<25	<25	<25	<25	<25
Petroleum hydrocarbons F2 (C10-C16)	ug/L	<100	<100	<100	<100	--	--
Petroleum hydrocarbons F3 (C16-C34)	ug/L	<200	<200	<200	<200	--	--
Petroleum hydrocarbons F4 (C34-C50)	ug/L	<200	<200	<200	<200	--	--
Pesticides							
2,4'-DDD	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
2,4'-DDD + 4,4'-DDD	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
2,4'-DDE	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
2,4'-DDE + 4,4'-DDE	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
2,4'-DDT	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
2,4'-DDT + 4,4'-DDT	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
4,4'-DDD	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
4,4'-DDE	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
4,4'-DDT	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Aldrin	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
alpha-Chlordane	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Chlordane	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Dieldrin	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Endosulfan	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Endosulfan I	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Endosulfan II	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Endrin	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
gamma-BHC (lindane)	ug/L	<0.003	<0.003	<0.003	<0.003	--	--
gamma-Chlordane	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Heptachlor	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Heptachlor epoxide	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Hexachlorobenzene	ug/L	<0.005	<0.005	<0.005	<0.005	--	--
Hexachlorobutadiene	ug/L	<0.009	<0.009	<0.009	<0.009	--	--
Hexachloroethane	ug/L	<0.01	<0.01	<0.01	<0.01	--	--
Methoxychlor	ug/L	<0.01	<0.01	<0.01	<0.01	--	--
Polychlorinated Biphenyls (PCBs)							
Aroclor-1242 (PCB-1242)	ug/L	<0.05	<0.05	<0.05	<0.05	--	--
Aroclor-1248 (PCB-1248)	ug/L	<0.05	<0.05	<0.05	<0.05	--	--
Aroclor-1254 (PCB-1254)	ug/L	<0.05	<0.05	<0.05	<0.05	--	--
Aroclor-1260 (PCB-1260)	ug/L	<0.05	<0.05	<0.05	<0.05	--	--
Total PCBs	ug/L	<0.05	<0.05	<0.05	<0.05	--	--
General Chemistry							
Chloride (dissolved)	ug/L	**7,200,000**	**17,000,000**	**29,000,000**	**6,200,000**	--	--
Conductivity	mS/cm	23.6	51.3	75	18.5	--	--
Cyanide (free)	ug/L	<1	2	6	<1	--	--
pH, lab	s.u.	7.54	7.68	7.56	7.48	--	--

Footnotes:

1) Analytical results are presented in micrograms per litre (ug/L).
2) < = analyte was not detected at or above the detection limit
3) J - Estimated concentration R - Rejected n/a - not applicable
4) Shading and bold text indicates the concentration exceeded the 2
MECP Table 7: Generic Site Condition Standards for Shallow Soils ir
Potable Ground Water Condition - Residential/Parkland/ Institutional
Use for coarse-grained soils.
5) mS/cm = millisiemens per centimetres

Table 8
Summary of Groundwater Maximum Concentrations
Phase Two ESA
Parking Lot and Access Roads
Portion of Children's Hospital of Eastern Ontario
401 and 407 Smyth Road, Ottawa, Ontario

Parameters	Units	Tbl 7	Max Concentration	Sample Location	Sample Identification	Sample Date
Volatile Organic Compounds (VOCs)						
1,1,1,2-Tetrachloroethane	ug/L	1.1	<0.5	-	-	-
1,1,1-Trichloroethane	ug/L	23	<0.2	-	-	-
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.5	-	-	-
1,1,2-Trichloroethane	ug/L	0.5	<0.5	-	-	-
1,1-Dichloroethane	ug/L	11	<0.2	-	-	-
1,1-Dichloroethene	ug/L	0.5	<0.2	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.2	<0.2	-	-	-
1,2-Dichlorobenzene	ug/L	150	<0.5	-	-	-
1,2-Dichloroethane	ug/L	0.5	<0.5	-	-	-
1,2-Dichloropropane	ug/L	0.58	<0.2	-	-	-
1,3-Dichlorobenzene	ug/L	7,600	<0.5	-	-	-
1,4-Dichlorobenzene	ug/L	0.5	<0.5	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	21,000	<10	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	5,200	<5	-	-	-
Acetone	ug/L	100,000	23	MW5	GW-11205379-20-010220-JC-002	1/2/2020
Benzene	ug/L	0.5	**1.9**	MW2D	GW-11205379-022620-JC-010	2/26/2020
Bromodichloromethane	ug/L	67,000	<0.5	-	-	-
Bromoform	ug/L	5	<1	-	-	-
Bromomethane (Methyl bromide)	ug/L	0.89	<0.5	-	-	-
Carbon tetrachloride	ug/L	0.2	<0.2	-	-	-
Chlorobenzene	ug/L	140	<0.2	-	-	-
Chloroform (Trichloromethane)	ug/L	2	0.24	MW2D	GW-11205379-20-010220-JC-004	1/2/2020
cis-1,2-Dichloroethene	ug/L	1.6	<0.5	-	-	-
cis-1,3-Dichloropropene	ug/L	n/a	<0.3	-	-	-
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene total	ug/L	0.5	<0.5	-	-	-
Dibromochloromethane	ug/L	65,000	<0.5	-	-	-
Dichlorodifluoromethane (CFC-12)	ug/L	3,500	<1	-	-	-
Ethylbenzene	ug/L	54	0.29	MW2D	GW-11205379-20-010220-JC-004	1/2/2020
Hexane	ug/L	5	<1	-	-	-
m&p-Xylenes	ug/L	n/a	3.1	MW2D	GW-11205379-20-010220-JC-004	1/2/2020
Methyl tert butyl ether (MTBE)	ug/L	15	<0.5	-	-	-
Methylene chloride	ug/L	26	<2	-	-	-
o-Xylene	ug/L	n/a	1	MW2D	GW-11205379-20-010220-JC-004	1/2/2020
Styrene	ug/L	43	<0.5	-	-	-
Tetrachloroethene	ug/L	0.5	<0.2	-	-	-
Toluene	ug/L	320	5.3	MW2D	GW-11205379-20-010220-JC-004	1/2/2020
trans-1,2-Dichloroethene	ug/L	1.6	<0.5	-	-	-
trans-1,3-Dichloropropene	ug/L	n/a	<0.4	-	-	-
Trichloroethene	ug/L	0.5	<0.2	-	-	-
Trichlorofluoromethane (CFC-11)	ug/L	2,000	<0.5	-	-	-
Vinyl chloride	ug/L	0.5	<0.2	-	-	-
Xylenes (total)	ug/L	72	4.1	MW2D	GW-11205379-20-010220-JC-004	1/2/2020
Polycyclic Aromatic Hydrocarbons (PAHs)						
1+2-Methylnaphthalene	ug/L	1,500	<0.071	-	-	-
1-Methylnaphthalene	ug/L	1,500	<0.05	-	-	-
2-Methylnaphthalene	ug/L	1,500	<0.05	-	-	-
Acenaphthene	ug/L	17	<0.05	-	-	-
Acenaphthylene	ug/L	1	<0.05	-	-	-
Anthracene	ug/L	1	<0.05	-	-	-
Benzo(a)anthracene	ug/L	1.8	<0.05	-	-	-
Benzo(a)pyrene	ug/L	0.81	<0.01	-	-	-
Benzo(b)fluoranthene/Benzo(j)fluoranthene	ug/L	0.75	<0.05	-	-	-
Benzo(g,h,i)perylene	ug/L	0.2	<0.05	-	-	-
Benzo(k)fluoranthene	ug/L	0.4	<0.05	-	-	-
Chrysene	ug/L	0.7	<0.05	-	-	-
Dibenz(a,h)anthracene	ug/L	0.4	<0.05	-	-	-
Fluoranthene	ug/L	44	<0.05	-	-	-
Fluorene	ug/L	290	<0.05	-	-	-
Indeno(1,2,3-cd)pyrene	ug/L	0.2	<0.05	-	-	-
Naphthalene	ug/L	7	<0.05	-	-	-
Phenanthrene	ug/L	380	<0.03	-	-	-
Pyrene	ug/L	5.7	<0.05	-	-	-
Metals						
Antimony (dissolved)	ug/L	16,000	<5	-	-	-
Arsenic (dissolved)	ug/L	1,500	<10	-	-	-
Barium (dissolved)	ug/L	23,000	900	MW3D	GW-11205379-20-010320-JC-007	1/3/2020
Beryllium (dissolved)	ug/L	53	<5	-	-	-
Boron (dissolved)	ug/L	36,000	610	MW2S	GW-11205379-20-010220-JC-003	1/2/2020
Cadmium (dissolved)	ug/L	2.1	2	MW5	GW-11205379-20-010220-JC-002	1/2/2020
Chromium (dissolved)	ug/L	640	<50	-	-	-
Chromium VI (hexavalent)	ug/L	110	2.7	MW5	GW-11205379-20-010220-JC-002	1/2/2020
Cobalt (dissolved)	ug/L	52	17	MW5	GW-11205379-20-010220-JC-002	1/2/2020
Copper (dissolved)	ug/L	69	<10	-	-	-
Lead (dissolved)	ug/L	20	<5	-	-	-
Mercury	ug/L	0.1	<0.1	-	-	-
Molybdenum (dissolved)	ug/L	7,300	33	MW5	GW-11205379-20-010220-JC-002	1/2/2020
Nickel (dissolved)	ug/L	390	44	MW5	GW-11205379-20-010220-JC-002	1/2/2020
Selenium (dissolved)	ug/L	50	43	MW5	GW-11205379-20-010220-JC-002	1/2/2020
Silver (dissolved)	ug/L	1.2	<1	-	-	-
Sodium (dissolved)	ug/L	1,800,000	**18,000,000**	MW5	GW-11205379-022620-JC-001	2/26/2020
Thallium (dissolved)	ug/L	400	0.35	MW5	GW-11205379-20-010220-JC-002	1/2/2020
Uranium (dissolved)	ug/L	330	120	MW5	GW-11205379-20-010220-JC-002	1/2/2020
Vanadium (dissolved)	ug/L	200	<5	-	-	-
Zinc (dissolved)	ug/L	890	<50	-	-	-
Petroleum Hydrocarbons (PHCs)						
Petroleum hydrocarbons F1 (C6-C10)	ug/L	750	31	MW2D	GW-11205379-022620-JC-010	2/26/2020
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	ug/L	750	26	MW2D	GW-11205379-022620-JC-010	2/26/2020
Petroleum hydrocarbons F2 (C10-C16)	ug/L	150	<100	-	-	-
Petroleum hydrocarbons F3 (C16-C34)	ug/L	500	<200	-	-	-
Petroleum hydrocarbons F4 (C34-C50)	ug/L	500	<200	-	-	-
Pesticides						
2,4'-DDD	ug/L	n/a	<0.005	-	-	-
2,4'-DDD + 4,4'-DDD	ug/L	1.8	<0.005	-	-	-
2,4'-DDE	ug/L	n/a	<0.005	-	-	-
2,4'-DDE + 4,4'-DDE	ug/L	17	<0.005	-	-	-
2,4'-DDT	ug/L	n/a	<0.005	-	-	-
2,4'-DDT + 4,4'-DDT	ug/L	0.05	<0.005	-	-	-
4,4'-DDD	ug/L	n/a	<0.005	-	-	-
4,4'-DDE	ug/L	n/a	<0.005	-	-	-
4,4'-DDT	ug/L	n/a	<0.005	-	-	-
Aldrin	ug/L	3	<0.005	-	-	-
alpha-Chlordane	ug/L	n/a	<0.005	-	-	-
Chlordane	ug/L	0.06	<0.005	-	-	-
Dieldrin	ug/L	0.56	<0.005	-	-	-
Endosulfan	ug/L	0.56	<0.005	-	-	-
Endosulfan I	ug/L	n/a	<0.005	-	-	-
Endosulfan II	ug/L	n/a	<0.005	-	-	-
Endrin	ug/L	0.36	<0.005	-	-	-
gamma-BHC (lindane)	ug/L	n/a	<0.003	-	-	-
gamma-Chlordane	ug/L	n/a	<0.005	-	-	-
Heptachlor	ug/L	0.038	<0.005	-	-	-
Heptachlor epoxide	ug/L	0.038	<0.005	-	-	-
Hexachlorobenzene	ug/L	3.1	<0.005	-	-	-
Hexachlorobutadiene	ug/L	0.012	<0.009	-	-	-
Hexachloroethane	ug/L	0.17	<0.01	-	-	-
Methoxychlor	ug/L	0.3	<0.01	-	-	-
Polychlorinated Biphenyls (PCBs)						
Aroclor-1242 (PCB-1242)	ug/L	n/a	<0.05	-	-	-
Aroclor-1248 (PCB-1248)	ug/L	n/a	<0.05	-	-	-
Aroclor-1254 (PCB-1254)	ug/L	n/a	<0.05	-	-	-
Aroclor-1260 (PCB-1260)	ug/L	n/a	<0.05	-	-	-
Total PCBs	ug/L	0.2	<0.05	-	-	-
General Chemistry						
Chloride (dissolved)	ug/L	1,800,000	**29,000,000**	MW5	GW-11205379-022620-JC-001	2/26/2020
Conductivity	mS/cm	n/a	75	MW5	GW-11205379-022620-JC-001	2/26/2020
Cyanide (free)	ug/L	52	6	MW5	GW-11205379-022620-JC-001	2/26/2020
pH, lab	s.u.	n/a	8	MW3D	GW-11205379-022620-JC-002	2/25/2020

Footnotes:

1) Analytical results are presented in micrograms per litre (ug/L).
2) < = analyte was not detected at or above the detection limit
3) J - Estimated concentration R - Rejected n/a - not applicable
4) Shading and bold text indicates the concentration exceeded the 2011 MECP Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition - Residential/Parkland/ Institutional Property Use for coarse-grained soils.
5) mS/cm = millisiemens per centimetres

Appendices

Appendix A
Sampling and Analysis Plan

Appendix A Sampling and Analysis Plan

The Phase Two ESA will be undertaken in general accordance with Ontario Regulation (O. Reg.)153/04 and the Areas of Potential Environmental Concern identified in the Phase One ESA will be investigated in the Phase Two ESA. The Phase Two ESA will, to the extent possible, quantify the liabilities associated with the nature and extent of releases of contaminants determined from the Phase One ESA work.

The work will be completed in accordance with the guidelines provided in the "Site Investigation Guidelines for Due Diligence and Design Purposes Social and Civil Infrastructure Project" dated November 2018. According to IO's guidelines for previously developed properties require:

- Installation of a minimum of monitoring wells in four boreholes plus one (1) borehole per hectare.
- Analysis of a minimum of two (2) fill (where sufficient fill material is present) and two (2) native soil samples from each borehole.

1. Soil Quality Investigation

The preliminary investigation will consist of the advancement of thirteen boreholes to the bedrock surface, which is expected to be encountered at depths between 1.5 and 3.5 mBGS. Upon drilling to bedrock, augering will continue for at least one (1) metre into the bedrock. At three (3) locations of deep monitoring wells, rock coring will be completed to at least 6.0 m into the bedrock in order to obtain bedrock samples, review the condition of the bedrock, and evaluate the mechanical properties of the bedrock. Samples will be collected for chemical analysis of volatile organic compounds (VOCs), petroleum hydrocarbons (PHCs) F_1 to F_4, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), metals and inorganics and organochlorine (OC) pesticides, to document conditions in the Area of Potential Environmental Concern identified in the Phase One ESA.

The drilling program for the proposed boreholes will be carried out using track mounted drill rig equipped with hollow stem power augers. The bedrock coring will be carried out using HQ size drill core barrel. The fieldwork will be overseen full-time by GHD experienced field personnel.

Soil samples will be collected from each of the investigative locations, and screened for visual and olfactory evidence of impact. Observations of significant quantities of fill material will be recorded on the borehole logs.

Up to 40 samples of the fill and native soils will be collected across the Site for laboratory analysis, plus quality control/quality assurance samples. This is based on an assumption that two (2) samples will be collected from the fill material and two (2) samples will be collected from the native soil, for each of the boreholes advanced.

Soil samples will be submitted from the zones exhibiting field evidence of impact. If impacted soil is encountered, a soil sample will also be collected below the zone of impact (i.e., soils deemed to be 'clean' based on field evidence) to determine the vertical extent of impact. A 5-day turnaround time has been assumed for the analyses of samples. One (1) quality control/quality assurance (QA/QC) sample (i.e., field duplicates) will be submitted for every ten samples plus one (1) trip blank for the PHC F1 and VOC samples. If impacted soil and/or groundwater is encountered during the drilling activities, GHD will contact IO immediately to discuss options moving forward.

All samples will be collected in laboratory-supplied sample containers specific to the analytical parameter, transported in a cooler with ice, and submitted to a Canadian Association of Laboratory Accreditation (CALA) accredited analytical laboratory, for chemical analysis following chain-of-custody procedures.

Upon completion of drilling, all of the drilled boreholes, with the exception of the monitoring wells, will be backfilled in accordance with O. Reg. 903 (as amended). Excess soil cuttings will be containerized in drums and stored temporarily on-Site until disposal off-Site to an appropriate Ministry of Environment, Conservation and Parks (MECP) approved facility can be arranged.

2. Groundwater Quality Investigation

To meet IO's 2018 P3 guidelines, three (3) locations generally within the footprint of proposed building area will be installed as nested groundwater monitoring wells (shallow and deep). Two (2) additional shallow monitoring wells will also be installed. The shallow monitoring wells will be advanced at least one (1) metre into the bedrock surface and screened from approximately 1.5 or 3.0 mBGS to 4.5 mBGS. The deeper monitoring wells will be advanced approximately 6.0 metres (m) into the bedrock to a bottom depth of approximately 9.0 mBGS and will be screened from approximately 6.0 mBGS to 9.0 mBGS. The eight (8) boreholes without monitoring wells will be advanced to at least one (1) metre into the bedrock surface (4.5 mBGS), or to auger refusal.

Monitoring wells will be installed in accordance with O. Reg. 903, (as amended). As such, GHD has estimated that three (3) shallow monitoring wells would be installed straddling the water table (screened from approximately 1.5 mBGS or 3.0 mBGS to 4.5 mBGS) and three (3) monitoring wells will be installed to a bottom depth of approximately 9.0 mBGS screened from approximately 6.0 mBGS to 9.0 mBGS. A set of nested monitoring wells (shallow and deep) will be installed at the approximate location of the proposed stormwater management facility. The monitoring wells will be constructed in accordance with Ontario Regulation 903, as amended (O. Reg. 903) with 2-inch ID No. 10 slot, Schedule 40 PVC well screen (1.5 m or 3.0 m length) and well point, and thread-compatible 2-inch ID PVC riser pipe. The annular space between the well screen and the borehole wall will be filled with clean, silica sand from the base of the well to just above the top of well screen. The remaining annular space will be sealed using hydrated bentonite pellets to approximately 0.6 mBGS at which point a concrete seal will be placed in the remaining annular space to the surface. At the surface, the monitoring wells will be protected with flush-mount cover. In accordance with O. Reg. 903, the monitoring wells will be registered with the MECP and the current property owner for the Site will be named as the owner of the wells.

Groundwater samples will be collected from the monitoring wells to determine the groundwater quality and water levels at the Site. Each well will be developed and purged to achieve chemical equilibrium prior to sampling. The headspace present in the monitoring wells will be investigated for the presence of methane gas using a four-gas meter. Prior to well development and purging, groundwater levels will be measured in the wells to estimate the groundwater flow direction. Free product measures will also be collected using an interface probe to determine the presence and apparent thickness of product, if present.

One (1) groundwater sample will be collected from each of the monitoring wells using low-flow purging and sampling techniques and new, disposable tubing for laboratory analysis of one or more of the following parameters: VOCs, PHCs, PAHs, PCBs, metals and inorganics, and OC pesticides.

Samples will be collected in laboratory-supplied containers specific to the analytical parameter, transported in coolers with ice, and submitted to the analytical laboratory following chain-of-custody procedures. A 5-day turnaround time has been assumed for the analyses of samples. One (1) quality

control/quality assurance (QA/QC) sample will be submitted for every ten samples plus one (1) trip blank for the VOC and PHC F1.

Well development/purge waters will be temporarily stored on-Site in 205-litre drums pending results from laboratory analyses.

3. Groundwater Level Measurement

Groundwater levels will be measured from the monitoring wells on the Site to determine the groundwater flow direction and hydraulic gradients at the Site. Prior to well development and purging, groundwater levels will be measured in the wells to estimate the groundwater flow direction. GHD will survey all sampling locations for vertical and horizontal control using a geodetic benchmark.

4. Report Preparation

The findings of the soil and groundwater sampling activities will be documented in a Phase Two ESA report that will include the following:

- Review of available background information.
- Rationale for the selection of the applicable regulatory standard.
- Summary of field activities undertaken (including field methodologies).
- Analytical results presented in tabular form.
- Headspace methane gas monitoring results in tabular form.
- Evaluation of soil/groundwater chemistry data with respect to the MECP document entitled, “Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act”, April 15, 2011 and supporting documentation.
- QA/QC data validation.
- Documentation of the soil/groundwater quality.
- Preparation of a Phase Two Conceptual Site Model.
- Scale drawing(s) of Site boundaries, adjacent property boundaries/land uses, investigative locations, parameter concentrations above applicable criteria/standard, groundwater elevation contours, etc.
- Estimate of volume of impacted soil, if any.
- Appendices including borehole stratigraphic and instrumentation logs and a copy of the completed well record submitted by the driller to the MECP.
- Recommendations for further work, if warranted, to investigate soil and/or groundwater quality at the Site.
- Conclusions.

The Phase Two ESA reports will be prepared in general accordance with O. Reg. 153/04.

Appendix B
Stratigraphic and Instrumentation Logs

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW1
DATE COMPLETED: 26 November 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.
	GROUND SURFACE	82.53
0.0	SILTY SAND (TOPSOIL), with organics, brown, moist	82.46
0.5	SILTY SAND (FILL), some gravel, with asphalt fragments and wood peices, loose, brown, moist	
1.0		
1.5	GRAVELLY SAND, trace silt, shale fragments, medium dense to dense, grey, moist	81.01
2.0		
2.5	- shale fragments, dense at 2.29m BGS	
3.0		
3.5		
4.0	SHALE, completely weathered, grey, soft	78.72
4.5		
5.0		
5.5	END OF BOREHOLE @ 5.47m BGS	77.06
6.0		
6.5		
7.0		

Monitoring Well: BENTONITE; No. 2 SAND

WELL DETAILS
Screened interval:
80.12 to 77.06m
2.41 to 5.47m BGS
Length: 3.06m
Seal:
82.22 to 80.43m
0.31 to 2.10m BGS
Material: BENTONITE
Sand Pack:
80.43 to 77.06m
2.10 to 5.47m BGS
Material: No. 2 SAND

SAMPLE NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
SS1	0-0.61m	58	4	0
SS2		50	8	0
SS3	1.52-2.13m	62	11	4
SS4	2.29-2.90m	67	30	5
SS5	3.05-3.66m	67	50	0
SS6		75	50+	3
SS7		55	50+	11
SS8		20	50+	

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

STATIC WATER LEVEL ▼ December 13, 2019

CHEMICAL ANALYSIS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW2S
DATE COMPLETED: 26 November 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GROUND SURFACE	82.43						
0	SILTY SAND (TOPSOIL), with organics, brown, moist	82.35		SS1 0.0-0.61m		54	10	0
0.5	SANDY SILT (FILL), some gravel, brown, moist							
1.0				SS2 0.76-1.37m		67	5	0
1.5	GRAVELLY SAND, with silt, with shale fragments, medium dense, brown, moist	80.91	BENTONITE					
2.0				SS3		67	14	0
2.5				SS4 1.52-2.13m		67	13	0
3.0	SHALE, completely weathered, grey, soft	79.39		SS5		75	50+	0
3.5			No. 2 SAND					
4.0				SS6		100	50+	4
4.5								
5.0								
5.5	END OF BOREHOLE @ 5.34m BGS	77.09						
6.0								
6.5								
7.0								

WELL DETAILS
Screened interval:
80.14 to 77.09m
2.29 to 5.34m BGS
Length: 3.05m
Seal:
81.52 to 80.45m
0.91 to 1.98m BGS
Material: BENTONITE
Sand Pack:
80.45 to 77.09m
1.98 to 5.34m BGS
Material: No. 2 SAND

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

STATIC WATER LEVEL ▼ December 13, 2019

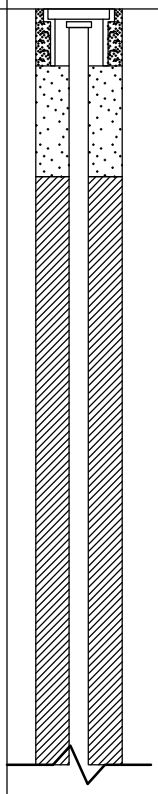
CHEMICAL ANALYSIS (oval)

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW2D
DATE COMPLETED: 26 November 2019
DRILLING METHOD: HSA with HQ Wireline Coring
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value
	GROUND SURFACE	82.43					
0.0	SILTY SAND (TOPSOIL), with organics, brown, moist	82.35					
	SANDY SILT (FILL), some gravel, brown, moist						
1.5	GRAVELLY SAND, with silt, with shale fragments, medium dense, brown, moist	80.91					
3.0	SHALE, completely weathered, grey, soft	79.39					
4.10	END OF OVERBURDEN HOLE @ 4.10m BGS						



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

STATIC WATER LEVEL ▼ December 13, 2019

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW2D
DATE COMPLETED: 26 November 2019
DRILLING METHOD: HSA with HQ Wireline Coring
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %
	SHALE, with clay seams, laminated, interbeds of limestone/siltstone, highly weathered to fresh, weak to moderately strong	78.33	BENTONITE	RC1	90	15
5				RC2	80	0
6				RC3	97	79
7				RC4	98	98
8						
9				RC5	99	99
10			No. 2 SAND	RC6	95	88
11						
	END OF BOREHOLE @ 11.28m BGS	71.15				
12			WELL DETAILS Screened interval: 74.20 to 71.15m 8.23 to 11.28m BGS Length: 3.05m Seal: 81.52 to 74.50m 0.91 to 7.93m BGS Material: BENTONITE Sand Pack: 74.50 to 71.15m 7.93 to 11.28m BGS Material: No. 2 SAND			
13						
14						
15						
16						
17						

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

STATIC WATER LEVEL ▼ December 13, 2019

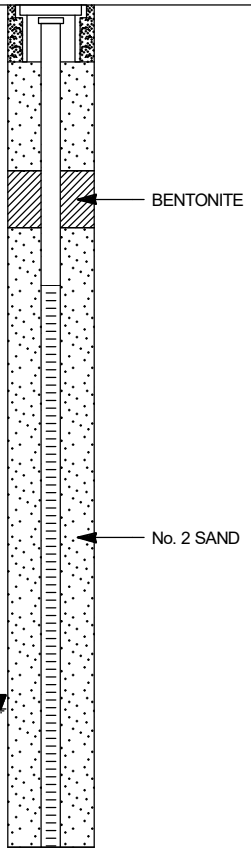
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW3S
DATE COMPLETED: 29 November 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.
	GROUND SURFACE	81.58
0.5	SILTY SAND (TOPSOIL), with organics, brown, moist	81.48
	SANDY SILT (FILL), trace gravel, wood pieces, grey and brown,moist	
1.0	GRAVELLY SAND (FILL), medium dense, brown, moist	80.82
1.5		
2.0	SILTY SAND, with gravel, shale fragments, brown and grey, moist	79.88
2.5		
3.0	SHALE, completely weathered, grey, soft	78.51
3.5		
4.0		
4.5	END OF BOREHOLE @ 4.57m BGS	77.01
5.0		
5.5		
6.0		
6.5		
7.0		

Monitoring Well



WELL DETAILS
Screened interval:
80.06 to 77.01m
1.52 to 4.57m BGS
Length: 3.05m
Seal:
80.68 to 80.37m
0.90 to 1.21m BGS
Material: BENTONITE
Sand Pack:
80.37 to 77.01m
1.21 to 4.57m BGS
Material: No. 2 SAND

SAMPLE				
NUMBER	INTERVAL	REC (%)	'N' Value	PID (ppm)
SS1	0-0.61m	50	7	1
SS2	0.76-1.37m	46	18	0
SS3	1.52-2.13m	50	6	0
SS4		42	14	0
SS5		33	45	0
SS6		0	50+	

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

STATIC WATER LEVEL ▼ December 13, 2019

CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW3D
DATE COMPLETED: 28 November 2019
DRILLING METHOD: HSA with HQ Wireline Coring
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value
	GROUND SURFACE	81.58					
0.0	SILTY SAND (TOPSOIL), with organics, brown, moist	81.48					
0.5	SANDY SILT (FILL), trace gravel, wood pieces, medium stiff, grey and brown,moist						
1.0	GRAVELLY SAND (FILL), medium dense, brown, moist	80.82					
1.5							
2.0	SILTY SAND, with gravel, shale fragments, brown and grey, moist	79.88					
2.5							
3.0	SHALE, completely weathered, grey, soft	78.51					
3.5							
4.0							
4.5	END OF OVERBURDEN HOLE @ 4.57m BGS						
5.0							
5.5							
6.0							
6.5							
7.0							

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

STATIC WATER LEVEL ▼ December 13, 2019

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW3D
DATE COMPLETED: 28 November 2019
DRILLING METHOD: HSA with HQ Wireline Coring
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %
5	SHALE, laminated, interbeds of limestone/siltstone (hard layers), highly weathered to fresh, weak to moderately strong, grey	77.01	BENTONITE	RC1	80	71
6				RC2	99	86
7						
8			No. 2 SAND	RC3	100	96
9				RC4	100	100
10						
11				RC5	100	86
12	END OF BOREHOLE @ 11.43m BGS	70.15	WELL DETAILS Screened interval: 76.24 to 70.15m 5.34 to 11.43m BGS Length: 6.09m Seal: 77.01 to 76.55m 4.57 to 5.03m BGS Material: BENTONITE Sand Pack: 76.55 to 70.15m 5.03 to 11.43m BGS Material: No. 2 SAND			
13						
14						
15						
16						
17						

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

STATIC WATER LEVEL ▼ December 13, 2019

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW4S
DATE COMPLETED: 3 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GROUND SURFACE	80.27						
0.5	SILTY SAND (TOPSOIL), with organics, brown, moist SILTY CLAY (FILL), trace sand and gravel, medium stiff, brown, moist	80.19	BENTONITE	SS1 0-0.61m		50	7	1
1.0	SILTY SAND, some clay and gravel, medium dense, brown, moist - shale fragments at 1.29m BGS	79.51	No. 2 SAND	SS2 0.76-1.37m		58	17	1
1.5	SHALE, completely weathered, grey, soft	78.75		SS3		100	50+	1
2.0								
2.5			BENTONITE					
3.0	END OF BOREHOLE @ 2.69m BGS	77.58						
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								

WELL DETAILS
Screened interval:
79.10 to 78.49m
1.17 to 1.78m BGS
Length: 0.61m
Seal:
79.96 to 79.41m
0.31 to 0.86m BGS
Material: BENTONITE
Sand Pack:
79.41 to 78.49m
0.86 to 1.78m BGS
Material: No. 2 SAND

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

STATIC WATER LEVEL ▼ December 13, 2019

CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW4D
DATE COMPLETED: 3 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value
	GROUND SURFACE	80.34					
0.0	SILTY SAND (TOPSOIL), with organics, brown, moist	80.26					
0.5	SILTY CLAY (FILL), trace sand and gravel, medium stiff, brown, moist						
		79.58					
1.0	SILTY SAND, some clay and gravel, medium dense, brown, moist		BENTONITE				
	- shale fragments at 1.29m BGS						
1.5	SHALE, completely weathered, grey, soft	78.82					
2.0							
2.5							
	END OF OVERBURDEN HOLE @ 2.69m BGS						
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							

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

STATIC WATER LEVEL ▼ December 13, 2019

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW4D
DATE COMPLETED: 3 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %
3	interbedded limestone, highly weathered and fractured, horizontal fractures, grey/black, weak to strong, poor becoming excellent quality with depth	77.65		RC1	88	85
4						
5			No. 2 SAND	RC2	100	100
6				RC3	99	99
7						
8			BENTONITE	RC4	100	100
9	END OF BOREHOLE @ 8.38m BGS	71.96				
10						
11						
12						
13						
14						
15						

WELL DETAILS
Screened interval:
78.51 to 72.41m
1.83 to 7.93m BGS
Length: 6.1m
Seal:
79.43 to 78.81m
0.91 to 1.53m BGS
Material: BENTONITE
Sand Pack:
78.81 to 72.41m
1.53 to 7.93m BGS
Material: No. 2 SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
STATIC WATER LEVEL ▼ December 13, 2019

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW5
DATE COMPLETED: 4 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' Value	PID (ppm)
	GROUND SURFACE	80.54						
0	ASPHALT SURFACE	80.49						
	SAND AND GRAVEL (FILL), very dense, grey and brown, moist			SS1 0-0.61m		67	98	0
0.5			BENTONITE					
1.0	SILTY SAND, shale fragments, very dense, grey and brown, moist	79.63		SS2 0.76-1.06m		100	50+	0
1.5				SS3 1.52-1.67m		100	50+	0
	SHALE, completely weathered, grey, soft	78.84						
2.0			No. 2 SAND					
2.5				SS4		60	50+	1
3.0				SS5		0	50+	
	END OF BOREHOLE @ 3.10m BGS	77.44						
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								

WELL DETAILS
Screened interval:
79.10 to 77.44m
1.44 to 3.10m BGS
Length: 1.66m
Seal:
80.23 to 79.43m
0.31 to 1.11m BGS
Material: BENTONITE
Sand Pack:
79.43 to 77.44m
1.11 to 3.10m BGS
Material: No. 2 SAND

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

STATIC WATER LEVEL ▼ December 13, 2019

CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: BH6
DATE COMPLETED: 2 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' Value	PID (ppm)
	GROUND SURFACE	80.04					
0.0	SAND AND GRAVEL (FILL), very dense, grey, moist		SS1	0-0.61m	75	68	0
0.5		79.64					
	SILTY SAND, some clay, shale fragments, very dense, grey and brown, moist						
1.0		79.18	SS2	0.76-1.37m	50	50+	1
	SHALE, completely weathered, grey, soft						
1.5			SS3		100	50+	0
2.0							
2.5	END OF BOREHOLE @ 2.41m BGS	77.61	SS4		60	50+	1
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							

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

CHEMICAL ANALYSIS (oval)

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: BH7
DATE COMPLETED: 29 November 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' Value	PID (ppm)
	GROUND SURFACE	80.40					
0.5	SAND AND GRAVEL (FILL), medium dense, grey, moist		SS1	0-0.61m	58	15	0
		79.64					
1.0	SILTY SAND, some clay, shale fragments, dense, grey and brown, moist		SS2	0.76-1.37m	55	37	0
1.5		78.88					
2.0	SHALE, completely weathered, grey, soft		SS3		56	50+	0
2.5		77.97	SS4		80	50+	1
	END OF BOREHOLE @ 2.43m BGS						
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							

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

CHEMICAL ANALYSIS (SS1)

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: BH8
DATE COMPLETED: 2 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' Value	PID (ppm)
	GROUND SURFACE	80.82					
0.5	SAND AND GRAVEL (FILL), medium dense, grey, moist		SS1 0.61m		50	9	0
1.0	SILTY SAND, shale fragments, trace clay, medium dense, grey and brown, moist	80.06	SS2 0.76-1.37m		75	11	1
1.5	SHALE, completely weathered, grey, soft	79.60	SS3		80	50+	2
2.0							
2.5			SS4		100	50+	2
3.0			SS5		100	50+	2
	END OF BOREHOLE @ 3.13m BGS	77.69					
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							

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

CHEMICAL ANALYSIS (oval)

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW9
DATE COMPLETED: 3 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GROUND SURFACE	80.52						
0.5	SAND AND GRAVEL (FILL), medium dense, grey, moist	79.76	BENTONITE	SS1 0-0.61m		58	24	1
1.0	SILTY SAND, some clay and gravel, medium dense, brown, moist - shale fragments at 1.22m BGS			SS2		58	15	1
1.5			No. 2 SAND					
2.0	SHALE, completely weathered, grey, soft	78.54		SS2 1.52-2.1m		76	34	1
2.5				SS3 2.29-2.50m		100	50+	2
3.0			BENTONITE	SS5		0	50+	
3.5								
4.0	END OF BOREHOLE @ 3.81m BGS Well dry on December 13, 2019	76.71		SS6		0	50+	
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								

WELL DETAILS
Screened interval:
79.08 to 78.69m
1.44 to 1.83m BGS
Length: 0.39m
Seal:
80.21 to 79.41m
0.31 to 1.11m BGS
Material: BENTONITE
Sand Pack:
79.41 to 78.69m
1.11 to 1.83m BGS
Material: No. 2 SAND

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

CHEMICAL ANALYSIS (oval)

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: MW10
DATE COMPLETED: 2 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GROUND SURFACE	79.86						
0.5	SAND AND GRAVEL (FILL), dense, grey, moist			SS1 0-0.61m		58	48	1
1.0	GRAVELLY SAND, some silt, medium dense, grey and brown, moist	79.10	BENTONITE	SS2		42	10	1
1.5								
2.0				SS2 1.52-2.13m		42	8	1
2.5	SHALE, completely weathered, grey	77.57		SS3 2.29-2.90m		57	43	6
3.0			No. 2 SAND	SS5		100	50+	3
3.5								
4.0	END OF BOREHOLE @ 3.81m BGS	76.05		SS6		0	50+	
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								

WELL DETAILS
Screened interval:
77.57 to 76.05m
2.29 to 3.81m BGS
Length: 1.52m
Seal:
79.55 to 77.88m
0.31 to 1.98m BGS
Material: BENTONITE
Sand Pack:
77.88 to 76.05m
1.98 to 3.81m BGS
Material: No. 2 SAND

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

STATIC WATER LEVEL ▼ December 13, 2019

CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: BH11
DATE COMPLETED: 4 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' Value	PID (ppm)
	GROUND SURFACE	81.32					
0	ASPHALT SURFACE	81.24					
	SAND AND GRAVEL (FILL), medium dense, brown, moist		SS1	0-0.61m	67	24	0
0.5							
	SILTY SAND, shale fragments, dense, trace clay, brown and grey, moist	80.56	SS2	0.76-1.37m	75	75	0
1.0							
1.5	SHALE, completely weathered, grey, soft	79.80	SS3		36	50+	1
2.0							
			SS4		38	50+	0
2.5	END OF BOREHOLE @ 2.49m BGS	78.83					
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							

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

CHEMICAL ANALYSIS ( )

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: BH12
DATE COMPLETED: 4 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' Value	PID (ppm)
	GROUND SURFACE	81.27					
0.0	ASPHALT SURFACE	81.19					
	SAND AND GRAVEL (FILL), dense, brown, moist		SS1 0-0.61m		58	44	1
0.5							
1.0	SILTY SAND, some clay and gravel, shale fragments, medium dense to dense, brown and grey, moist	80.43	SS2		75	20	0
1.5							
2.0			SS2 1.52-2.13m		76	32	0
2.5	SHALE, completely weathered, grey, soft	78.98	SS3 2.29-2.50m		100	50+	
3.0			SS5		0	50+	
3.5							
	END OF BOREHOLE @ 3.81m BGS	77.46	SS6		0	50+	
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							

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

CHEMICAL ANALYSIS (oval)

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: BH13
DATE COMPLETED: 4 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' Value	PID (ppm)
	GROUND SURFACE	81.37					
0.0	ASPHALT SURFACE	81.29					
	SAND AND GRAVEL (FILL), medium dense, brown, moist		SS1 0-0.61m		83	24	0
0.5							
	SILTY SAND, shale fragments, very dense, brown and grey, moist	80.61					
1.0			SS2 0.76-1.19m		100	50+	1
	SHALE, completely weathered, grey, soft	80.30					
1.5			SS3 1.52-1.77		100	50+	1
2.0							
			SS4		100	50+	
2.5	END OF BOREHOLE @ 2.37m BGS	79.00					
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							

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

CHEMICAL ANALYSIS ( )

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Proposed 1Door4Care Facility
PROJECT NUMBER: 11205379
CLIENT: Infrastructure Ontario
LOCATION: 401 Symth Road, Ottawa, Ontario

HOLE DESIGNATION: BH14
DATE COMPLETED: 4 December 2019
DRILLING METHOD: 108mm ID Hollow Stem Augers
FIELD PERSONNEL: R. Tillaart

DEPTH m BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV.	SAMPLE NUMBER	SAMPLE INTERVAL	REC (%)	'N' Value	PID (ppm)
	GROUND SURFACE	81.17					
0.0	ASPHALT SURFACE	81.09					
	SAND AND GRAVEL (FILL), medium dense, brown, moist		SS1 0-0.61m		83	20	1
0.5							
	SILTY SAND, shale fragments, trace clay, very dense, brown and grey, moist	80.36	SS2 0.76-1.10m		100	50+	0
1.0	SHALE, completely weathered, grey, soft	80.16					
1.5			SS3 1.52-1.80m		45	50+	
2.0							
	END OF BOREHOLE @ 2.32m BGS	78.85	SS4		0	50+	
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							

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

CHEMICAL ANALYSIS (oval)

Appendix C
Analytical Data Verification and Laboratory Certificates of Analysis

Memorandum

January 31, 2020

Revised: April 8, 2020

To:	Aditya Khandekar, Warren Croft	Ref. No.:	11205379
	JB		
From:	Jennifer Balkwill/ev/1		

Subject: **Analytical Data Verification**
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

1. Introduction

The following document details an analytical data verification of results for groundwater and soil samples collected in support of the Proposed 1Door4Care Facility at the Infrastructure Ontario Site in Ottawa, Ontario from November 2019 to February 2020. Samples were submitted to Bureau Veritas Canada (2019) Inc. (BV) located in Mississauga, Ontario. A sample collection and analysis summary is presented in Table 1. A summary of the analytical methodology is presented in Table 2.

Standard GHD Limited (GHD) report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, duplicate data, recovery data from surrogate spikes, laboratory control samples (LCS), matrix spikes (MS), and field QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 2 and applicable guidance from the documents entitled:

i) "National Functional Guidelines for Superfund Organic Methods Data Review", USEPA-540-R-2016-002, September 2016

ii) “National Functional Guidelines for Inorganic Superfund Methods Data Review", USEPA-540-R-2016-001, September 2016

iii) “Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act”, Laboratory Services Branch, Ministry of the Environment. March 9, 2004, amended as of July 1, 2011

Items i) and ii) will subsequently be referred to as the “Guidelines” in this Memorandum. Item iii) will subsequently be referred to as the “O. Reg. 153 Analytical Protocols”.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 2. Sample chain of custody documents and analytical reports were used to determine sample holding times. Most samples were prepared and analyzed within the required holding times. Data that was obtained past the recommended holding time has been qualified as estimated (see Table 3).

All samples were properly preserved, delivered on ice and stored by the laboratory at the required temperature (<10°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Most method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation. Dissolved sodium was detected in a method blank. Associated sample concentrations were greater than ten times the blank value and were not qualified.

4. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic carbon (VOC), organochlorine (OC) pesticide, polycyclic aromatic hydrocarbon (PAH), polychlorinated biphenyl (PCB), and petroleum hydrocarbon (PHC) determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. Some surrogate recoveries did not meet the above guidance. Samples associated with outlying recoveries were qualified as follows (see Table 4):

i) Non-detect results associated with high surrogate recoveries were not qualified. The indicated high bias would not impact the data.

ii) Non-detect results associated with low surrogate recoveries were qualified as estimated.

5. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

Inorganic Analyses

The LCS contained all analytes of interest. LCS recoveries were assessed per the “Guidelines”. All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike Analyses

To evaluate the effects of sample matrices on the extraction or digestion process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS samples. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

Organic Analyses

The MS samples were spiked with all compounds of interest. Most percent recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy. The percent recovery for a heptachlor MS sample did not meet the above guidance. The non-detect result associated with the extremely low MS recovery (less than 20 percent) was rejected (see Table 5).

Inorganic Analyses

The MS samples were spiked with the analytes of interest, and the results were evaluated using the “Guidelines”. Most percent recoveries were within the control limits, demonstrating acceptable analytical accuracy. The percent recoveries for a hexavalent chromium MS sample and a dissolved silver MS sample did not meet the above guidance. Associated sample results have been qualified as estimated (see Table 5).

7. Duplicate Sample Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory. The laboratory performed additional site-specific duplicate analyses internally. The relative percent differences (RPDs) associated with these duplicate samples must be less than 20 percent for water samples and 35 percent for soil samples. If the

reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is a difference of one times the RL for water samples or two times the RL for soil samples. Most duplicate analyses performed were acceptable, demonstrating acceptable analytical precision. Data that showed variability have been qualified as estimated (see Table 6).

8. Field QA/QC Samples

The field QA/QC consisted of three trip blanks and five field duplicate sample sets.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, three trip blanks were submitted to the laboratory for VOC and PHC (F1) analysis as outlined in Table 1. All results were non-detect for the compounds of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, five field duplicate sample sets were collected and submitted “blind” to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples or 100 percent for soil samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the RL, the evaluation criteria is a difference of one times the RL for water samples or two times the RL for soil samples.

Most field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision. Data that showed variability have been qualified as estimated (see Table 7).

9. Conclusion

Based on the assessment detailed in the foregoing, the data are acceptable with the specific qualifications and exceptions noted herein.

Table 1

Sample Collection and Analysis Summary
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

Lab Report #	Sample Identification	Location	Matrix	Initial Sample Depth (ft BGS)	Final Sample Depth (ft BGS)	Collection Date (mm/dd/yyyy)	Collection Time (hr:min:sec)	Analysis/Parameters																Comments
								VOCs	PHCs (F1)	PHCs (F2-F4)	Petroleum Hydrocarbons (F4 Gravimetric)	PAHs	Organochlorine Pesticides	PCBs	Metals	Mercury	Hexavalent Chromium	Hot Water Extractable Boron	Cyanide, Weak-Acid Dissociable	Conductivity	pH	Sodium Adsorption Ratio	Anions (Chloride)	
B9X8304	11205379-20-MW1-SS1	MW1	Soil	0	2	11/26/2019	09:50:00	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-MW1-SS3	MW1	Soil	5	7	11/26/2019	10:05:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-MW1-SS4	MW1	Soil	7.5	9.5	11/26/2019	10:20:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-MW1-SS5	MW1	Soil	10	12	11/26/2019	10:35:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-MW2S-SS1	MW2S	Soil	0	2	11/26/2019	13:00:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-MW2S-SS2	MW2S	Soil	2.5	4.5	11/26/2019	13:10:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-MW2S-SS4	MW2S	Soil	5	7	11/26/2019	13:35:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-MW3S-SS1	MW3S	Soil	0	2	11/29/2019	08:05:00	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-MW3S-SS2	MW3S	Soil	2.5	4.5	11/29/2019	08:25:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-MW3S-SS3	MW3S	Soil	5	7	11/29/2019	08:35:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-BH7-SS1	BH7	Soil	0	2	11/29/2019	10:50:00	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-BH7-SS2	BH7	Soil	2.5	4.5	11/29/2019	11:00:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9X8304	11205379-20-TRIP BLANK	-	Methanol	-	-	11/29/2019	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Trip Blank
B9Y4500	11205379-MW4S-SS1	MW4S	Soil	0	2	12/02/2019	09:05:00	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-MW4S-SS2	MW4S	Soil	2.5	4.5	12/02/2019	09:15:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-MW5-SS1	MW5	Soil	0	2	12/04/2019	10:10:00	X	X	X	X	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-MW5-SS2	MW5	Soil	2.5	4.5	12/04/2019	10:20:00	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-MW5-SS3	MW5	Soil	5	7	12/04/2019	10:30:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH6-SS1	BH6	Soil	0	2	12/02/2019	12:50:00	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH6-SS2	BH6	Soil	2.5	4.5	12/02/2019	13:05:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH8-SS1	BH8	Soil	0	2	12/02/2019	11:35:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH8-SS2	BH8	Soil	2.5	4.5	12/02/2019	11:40:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH9-SS1	MW9	Soil	0	2	12/03/2019	14:45:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-DUP1	MW4S	Soil	0	2	12/02/2019	09:05:00	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	-	FD (11205379-MW4S-SS1)
B9Y4500	11205379-BH9-SS3	MW9	Soil	2.5	4.3	12/03/2019	15:10:00	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH9-SS4	MW9	Soil	5	5.7	12/03/2019	15:20:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH10-SS1	MW10	Soil	0	2	12/02/2019	14:20:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH10-SS3	MW10	Soil	5	7	12/02/2019	14:40:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH10-SS4	MW10	Soil	7.5	9.5	12/02/2019	14:50:00	X	X	X	X	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH11-SS1	BH11	Soil	0	2	12/04/2019	12:25:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH11-SS2	BH11	Soil	2.5	4.5	12/04/2019	12:40:00	X	X	X	X	-	-	-	X	X	X	X	X	X	X	X	-	

Table 1

Sample Collection and Analysis Summary
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

								Analysis/Parameters																	
Lab Report #	Sample Identification	Location	Matrix	Initial Sample Depth (ft BGS)	Final Sample Depth (ft BGS)	Collection Date (mm/dd/yyyy)	Collection Time (hr:min:sec)	VOCs	PHCs (F1)	PHCs (F2-F4)	Petroleum Hydrocarbons (F4 Gravimetric)	PAHs	Organochlorine Pesticides	PCBs	Metals	Mercury	Hexavalent Chromium	Hot Water Extractable Boron	Cyanide, Weak-Acid Dissociable	Conductivity	pH	Sodium Adsorption Ratio	Anions (Chloride)	Comments
B9Y4500	11205379-BH12-SS1	BH12	Soil	0	2	12/04/2019	08:40:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH12-SS3	BH12	Soil	5	7	12/04/2019	09:15:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH12-SS4	BH12	Soil	7.5	8.2	12/04/2019	09:30:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH13-SS1	BH13	Soil	0	2	12/04/2019	13:30:00	X	X	X	X	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH13-SS2	BH13	Soil	2.5	3.9	12/04/2019	13:40:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH13-SS3	BH13	Soil	5	5.8	12/04/2019	13:50:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH14-SS1	BH14	Soil	0	2	12/04/2019	14:20:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH14-SS2	BH14	Soil	2.5	3.6	12/04/2019	14:30:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-BH14-SS3	BH14	Soil	5	5.9	12/04/2019	14:45:00	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X	-	
B9Y4500	11205379-DUP2	BH13	Soil	0	2	12/04/2019	13:30:00	X	X	X	X	-	-	-	X	X	X	X	X	X	X	X	-	FD (11205379-BH13-SS1)
C000934	GW-11205379-20-010220-JC-001	MW4D	Groundwater	-	-	01/02/2020	10:32:00	X	X	X	-	X	X	X	X	X	X	-	X	-	-	-	X	
C000934	GW-11205379-20-010220-JC-002	MW5	Groundwater	-	-	01/02/2020	11:52:00	X	X	X	-	X	X	X	X	X	X	-	X	-	-	-	X	
C000934	GW-11205379-20-010220-JC-003	MW2S	Groundwater	-	-	01/02/2020	13:30:00	X	X	X	-	X	X	X	X	X	X	-	X	-	-	-	X	
C000934	GW-11205379-20-010220-JC-004	MW2D	Groundwater	-	-	01/02/2020	14:07:00	X	X	X	-	X	X	X	X	X	X	-	X	-	-	-	X	
C000934	TBLK-FIBB-19-4716	-	Water	-	-	09/03/2019	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Trip Blank
C002002	GW-11205379-20-010320-JC-005	MW10	Groundwater	-	-	01/03/2020	09:35:00	X	X	X	-	X	X	X	X	X	X	-	X	-	-	-	X	
C002002	GW-11205379-20-010320-JC-006	MW3S	Groundwater	-	-	01/03/2020	12:30:00	X	X	X	-	X	X	X	X	X	X	-	X	-	-	-	X	
C002002	GW-11205379-20-010320-JC-007	MW3D	Groundwater	-	-	01/03/2020	13:20:00	X	X	X	-	X	X	X	X	X	X	-	X	-	-	-	X	
C002002	GW-11205379-20-010320-JC-008	MW3D	Groundwater	-	-	01/03/2020	13:20:00	X	X	X	-	X	X	X	X	X	X	-	X	-	-	-	X	FD (GW-11205379-20-010320-JC-007)
C002002	GW-11205379-20-010320-JC-009	MW1	Groundwater	-	-	01/03/2020	14:32:00	X	X	X	-	X	X	X	X	X	X	-	X	-	-	-	X	
C015707	GW-11205379-20-010220-JC-001	MW4D	Groundwater	-	-	01/02/2020	10:32:00	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	
C015707	GW-11205379-20-010220-JC-002	MW5	Groundwater	-	-	01/02/2020	11:52:00	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	
C015707	GW-11205379-20-010220-JC-003	MW2S	Groundwater	-	-	01/02/2020	13:30:00	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	
C015707	GW-11205379-20-010220-JC-004	MW2D	Groundwater	-	-	01/02/2020	14:07:00	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	
C015707	GW-11205379-20-010320-JC-005	MW10	Groundwater	-	-	01/03/2020	09:35:00	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	
C015707	GW-11205379-20-010320-JC-006	MW3S	Groundwater	-	-	01/03/2020	12:30:00	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	
C015707	GW-11205379-20-010320-JC-007	MW3D	Groundwater	-	-	01/03/2020	13:20:00	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	
C015707	GW-11205379-20-010320-JC-008	MW3D	Groundwater	-	-	01/03/2020	13:20:00	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	FD (GW-11205379-20-010320-JC-007)
C015707	GW-11205379-20-010320-JC-009	MW1	Groundwater	-	-	01/03/2020	14:32:00	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	

Table 1

Sample Collection and Analysis Summary
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

Lab Report #	Sample Identification	Location	Matrix	Initial Sample Depth (ft BGS)	Final Sample Depth (ft BGS)	Collection Date (mm/dd/yyyy)	Collection Time (hr:min:sec)	Analysis/Parameters																Comments
								VOCs	PHCs (F1)	PHCs (F2-F4)	Petroleum Hydrocarbons (F4 Gravimetric)	PAHs	Organochlorine Pesticides	PCBs	Metals	Mercury	Hexavalent Chromium	Hot Water Extractable Boron	Cyanide, Weak-Acid Dissociable	Conductivity	pH	Sodium Adsorption Ratio	Anions (Chloride)	
C052740	GW-11205379-022620-JC-001	MW5	Groundwater	-	-	02/26/2020	09:32:00	X	X	X	-	X	X	X	X	X	X	-	X	X	X	-	X	
C052740	GW-11205379-022520-JC-002	MW3D	Groundwater	-	-	02/25/2020	11:40:00	X	X	X	-	X	X	X	X	X	X	-	X	X	X	-	X	
C052740	GW-11205379-022520-JC-003	MW3S	Groundwater	-	-	02/25/2020	12:48:00	X	X	X	-	X	X	X	X	X	X	-	X	X	X	-	X	
C052740	GW-11205379-022620-JC-008	MW1	Groundwater	-	-	02/26/2020	10:58:00	X	X	X	-	X	X	X	X	X	X	-	X	X	X	-	X	
C052740	GW-11205379-022620-JC-009	MW2S	Groundwater	-	-	02/26/2020	12:26:00	X	X	X	-	X	X	X	X	X	X	-	X	X	X	-	X	
C052740	GW-11205379-022620-JC-010	MW2D	Groundwater	-	-	02/26/2020	13:15:00	X	X	X	-	X	X	X	X	X	X	-	X	X	X	-	X	
C052740	GW-11205379-022620-JC-011	MW2D	Groundwater	-	-	02/26/2020	13:15:00	X	X	X	-	X	X	X	X	X	X	-	X	X	X	-	X	FD (GW-11205379-022620-JC-010)
C052740	TRIP-001	-	Groundwater	-	-	02/26/2020	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Trip Blank

Notes

FD - Field Duplicate Sample of sample in parenthesis
"-" - Not applicable
ft BGS - Feet Below Ground Surface
VOCs - Volatile Organic Compounds
PHCs - Petroleum Hydrocarbons
PAHs - Polycyclic Aromatic Hydrocarbons
PCBs - Polychlorinated Biphenyls

Table 2

Analytical Method and Holding Time Criteria
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

Parameters	Methodology [1]		Holding Time Criteria[2]	
	Water	Soil	Water	Soil
VOCs (methanol preservation for soil)	SW846 8260	SW846 8260	14 days	14/40[3]
PHCs (F1) (methanol preservation for soil)	MOE PHC-E3421	CCME-CWS Tier 1 Method	14 days	14/40[3]
PHCs (F2-F4)	MOE PHC-E3421	CCME-CWS Tier 1 Method	40 days	14 days
Petroleum Hydrocarbons (F4 Gravimetric)	NA	CCME-CWS Tier 1 Method	NA	14 days
PAHs	SW846 8270	SW846 8270	14 days	60 days
Organochlorine pesticides	SW846 8081	SW846 8081	14 days	60 days
PCBs	SW846 8082	SW846 8082	14 days	Indefinite
Metals	SW846 6020A	SW846 6020A	60 days	180 days
Mercury	EPA 245.1	SW846 6020A	28 days	28 days
Hexavalent Chromium	SM 3500-Cr B	SW 846 Method 3060A; Method 7196A	28 days	30 days
Hot Water Extractable Boron	NA	SW846 6010C	NA	180 days
Cyanide, Weak-Acid Dissociable	SM 4500 CN- I	SM 4500 CN	14 days	14 days
Conductivity	SM 2510 B	SM 2510 B	28 days	30 days
pH	SM 4500-H+ B	SM 4500-H+ B	28 days	30 days
Sodium Adsorption Ratio	NA	SW846 6010C	NA	180 days
Anions (Chloride)	SM 4110 B	NA	28 days	NA

Notes:

(1) Methods referenced from the following:
SW846 - "Test Method for Evaluating Solid Waste Physical/Chemical Methods", EPA, November 1986 with promulgated updates
MOE - Ministry of the Environment
CCME CWS - Canadian Council of Ministers of the Environment - Canadian Wide Standards
EPA - U.S. Environmental Protection Agency. Analytical Methodology (October, 2007)
SM - "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions

(2) Holding times differing from those defined in the indicated methodology were obtained from the O. Reg. 153 Analytical Protocols

(3) x/y - x days to extract/y days to analyze

NA - Not Applicable
VOCs - Volatile Organic Compounds
PHCs - Petroleum Hydrocarbons
PAHs - Polycyclic Aromatic Hydrocarbons
PCBs - Polychlorinated Biphenyls

Table 3

Qualified Sample Results Due to Holding Time Exceedance
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

Lab Report #	Parameter	Sample ID	Holding Time (days)	Holding Time Criteria (days)	Analyte	Qualified Sample Results	Units
B9X8304	PHCs	11205379-20-MW2S-SS1	15	14	Gravimetric heavy hydrocarbons (F4G)	2500 J-	µg/g

Notes:

J- - The result is an estimated quantity, but the result may be biased low
PHCs - Petroleum Hydrocarbons

Table 4

Qualified Sample Data Due To Outlying of Surrogate Recoveries
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

Lab Report #	Parameter	Sample ID	Surrogate	Surrogate % Recovery	Control Limits % Recovery	Analyte	Qualified Result	Units
C000934	Pesticides	GW-11205379-20-010220-JC-004	2,4,5,6-Tetrachloro-m-xylene	45	50-130	2,4'-DDD	0.005 UJ	µg/L
						2,4'-DDD + 4,4'-DDD	0.005 UJ	µg/L
						2,4'-DDE	0.005 UJ	µg/L
						2,4'-DDE + 4,4'-DDE	0.005 UJ	µg/L
						2,4'-DDT	0.005 UJ	µg/L
						2,4'-DDT + 4,4'-DDT	0.005 UJ	µg/L
						4,4'-DDD	0.005 UJ	µg/L
						4,4'-DDE	0.005 UJ	µg/L
						4,4'-DDT	0.005 UJ	µg/L
						Aldrin	0.005 UJ	µg/L
						alpha-Chlordane	0.005 UJ	µg/L
						Aroclor-1242 (PCB-1242)	0.05 UJ	µg/L
						Aroclor-1248 (PCB-1248)	0.05 UJ	µg/L
						Aroclor-1254 (PCB-1254)	0.05 UJ	µg/L
						Aroclor-1260 (PCB-1260)	0.05 UJ	µg/L
						Chlordane	0.005 UJ	µg/L
						Dieldrin	0.005 UJ	µg/L
						Endosulfan	0.005 UJ	µg/L
						Endosulfan I	0.005 UJ	µg/L
						Endosulfan II	0.005 UJ	µg/L
						Endrin	0.005 UJ	µg/L
						gamma-BHC (lindane)	0.003 UJ	µg/L
						gamma-Chlordane	0.005 UJ	µg/L
						Heptachlor	0.005 UJ	µg/L
						Heptachlor epoxide	0.005 UJ	µg/L
						Hexachlorobenzene	0.005 UJ	µg/L
						Hexachlorobutadiene	0.009 UJ	µg/L
						Hexachloroethane	0.01 UJ	µg/L
						Methoxychlor	0.01 UJ	µg/L
						Total PCBs	0.05 UJ	µg/L

Notes:

UJ - Not detected; associated reporting limit is estimated
PCB - Polychlorinated Biphenyl

Table 5

Qualified Sample Data Due To Outlying Matrix Spike Recoveries
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

Lab Report #	Parameter	Spiked Sample ID	Analyte	MS % Recovery	Control Limits % Recovery	Associated Sample IDs	Qualified Result	Units
B9Y4500	Metals	11205379-BH13-SS3	Chromium VI (hexavalent)	39	70-130	11205379-MW4S-SS1	0.2 UJ	µg/g
						11205379-MW4S-SS2	0.2 UJ	µg/g
						11205379-MW5-SS1	0.2 UJ	µg/g
						11205379-MW5-SS2	0.2 UJ	µg/g
						11205379-MW5-SS3	0.2 UJ	µg/g
						11205379-BH8-SS1	0.2 UJ	µg/g
						11205379-BH8-SS2	0.2 UJ	µg/g
						11205379-BH9-SS1	0.2 UJ	µg/g
						11205379-DUP1	0.2 UJ	µg/g
						11205379-BH9-SS3	0.2 UJ	µg/g
						11205379-BH9-SS4	0.2 UJ	µg/g
						11205379-BH10-SS1	0.2 UJ	µg/g
						11205379-BH10-SS3	0.2 UJ	µg/g
						11205379-BH10-SS4	0.2 UJ	µg/g
						11205379-BH11-SS2	0.2 UJ	µg/g
						11205379-BH12-SS4	0.2 UJ	µg/g
						11205379-BH13-SS2	0.2 UJ	µg/g
						11205379-BH13-SS3	0.2 UJ	µg/g
						11205379-BH14-SS1	0.2 UJ	µg/g
						11205379-BH14-SS2	0.2 UJ	µg/g
C002002	Pesticides	GW-11205379-20-010320-JC-007	Heptachlor	11	50-130	GW-11205379-20-010320-JC-007	R	µg/L
C052740	Metals	GW-11205379-022620-JC-010	Silver (dissolved)	72	75-125	GW-11205379-022620-JC-002	0.10 UJ	µg/L
						GW-11205379-022520-JC-003	1.0 UJ	µg/L
						GW-11205379-022620-JC-008	0.50 UJ	µg/L
						GW-11205379-022620-JC-009	0.50 UJ	µg/L
						GW-11205379-022620-JC-010	0.50 UJ	µg/L
						GW-11205379-022620-JC-011	0.50 UJ	µg/L

Notes:

MS - Matrix Spike.
UJ - Not detected; associated reporting limit is estimated.
R - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

Table 6

Qualified Sample Data Due To Outlying Laboratory Duplicate Results
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

Lab Report #	Parameter	Sample ID	Analyte	RPD (percent)	RPD Control Limit (percent)	Associated Sample IDs	Qualified Result	Units
B9X8304	Metals	11205379-20-MW2S-SS2	Lead	46	35	11205379-20-MW1-SS1	8.7 J	µg/g
						11205379-20-MW1-SS3	19 J	µg/g
						11205379-20-MW1-SS4	20 J	µg/g
						11205379-20-MW1-SS5	20 J	µg/g
						11205379-20-MW2S-SS1	16 J	µg/g
						11205379-20-MW2S-SS2	40 J	µg/g
						11205379-20-MW2S-SS4	28 J	µg/g
						11205379-20-MW3S-SS1	28 J	µg/g
						11205379-20-MW3S-SS2	6.5 J	µg/g
						11205379-20-MW3S-SS3	19 J	µg/g
						11205379-20-BH7-SS1	6.6 J	µg/g
						11205379-20-BH7-SS2	11 J	µg/g

Notes:

RPD - Relative Percent Difference
J - Estimated concentration

Table 7

Qualified Sample Data Due To Variability in Field Duplicate Results
Proposed 1Door4Care Facility
Infrastructure Ontario
Ottawa, Ontario
November 2019 to February 2020

Lab Report #	Parameter	Analyte	Diff	Sample ID	Qualified Result	Field Duplicate Sample ID	Qualified Result	Units
C002002	Metals	Selenium (dissolved)	>1xRL	GW-11205379-20-010320-JC-007	17 J	GW-11205379-20-010320-JC-008	8.7 J	µg/L

Notes:

Diff - Difference (i.e., >1X RL for waters)
J - Estimated concentration
RL - Reporting limit

Your P.O. #: 73518145
Your Project #: 11205379-20
Your C.O.C. #: 748247-01-01

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2019/12/12
Report #: R6003098
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X8304
Received: 2019/11/29, 16:20

Sample Matrix: Soil
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	4	N/A	2019/12/11	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	12	2019/12/09	2019/12/09	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	12	N/A	2019/12/09		EPA 8260C m
1,3-Dichloropropene Sum	1	N/A	2019/12/10		EPA 8260C m
Free (WAD) Cyanide	12	2019/12/06	2019/12/09	CAM SOP-00457	OMOE E3015 m
Conductivity	12	2019/12/10	2019/12/10	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	12	2019/12/06	2019/12/10	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	12	2019/12/09	2019/12/10	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric)	1	2019/12/11	2019/12/11	CAM SOP-00316	CCME PHC-CWS m
Strong Acid Leachable Metals by ICPMS	12	2019/12/09	2019/12/10	CAM SOP-00447	EPA 6020B m
Moisture	11	N/A	2019/12/07	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	1	N/A	2019/12/09	CAM SOP-00445	Carter 2nd ed 51.2 m
OC Pesticides (Selected) & PCB (3)	4	2019/12/09	2019/12/10	CAM SOP-00307	SW846 8081, 8082
OC Pesticides Summed Parameters	4	N/A	2019/12/09	CAM SOP-00307	EPA 8081/8082 m
PAH Compounds in Soil by GC/MS (SIM)	4	2019/12/10	2019/12/10	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	12	2019/12/09	2019/12/09	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	12	N/A	2019/12/11	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCs	13	N/A	2019/12/07	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 73518145
Your Project #: 11205379-20
Your C.O.C. #: 748247-01-01

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2019/12/12
Report #: R6003098
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9X8304
Received: 2019/11/29, 16:20

BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(3) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829

==========

This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: B9X8304
Report Date: 2019/12/12

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LLK895	LLK897	LLK898		
Sampling Date		2019/11/26 09:50	2019/11/26 10:05	2019/11/26 10:20		
COC Number		748247-01-01	748247-01-01	748247-01-01		
	UNITS	11205379-20-MW1-SS1	11205379-20-MW1-SS3	11205379-20-MW1-SS4	RDL	QC Batch
Calculated Parameters						
Sodium Adsorption Ratio	N/A	2.1	0.36	0.97		6475825
Inorganics						
Conductivity	mS/cm	0.30	1.4	2.5	0.002	6487842
Available (CaCl2) pH	pH	7.27	7.72	7.68		6486135
WAD Cyanide (Free)	ug/g	0.03	ND	ND	0.01	6484103
Chromium (VI)	ug/g	ND	ND	ND	0.2	6482783
Metals						
Hot Water Ext. Boron (B)	ug/g	0.18	0.59	0.91	0.050	6486282
Acid Extractable Antimony (Sb)	ug/g	ND	ND	0.22	0.20	6486303
Acid Extractable Arsenic (As)	ug/g	1.6	5.0	6.1	1.0	6486303
Acid Extractable Barium (Ba)	ug/g	66	130	160	0.50	6486303
Acid Extractable Beryllium (Be)	ug/g	0.35	0.79	0.99	0.20	6486303
Acid Extractable Boron (B)	ug/g	ND	8.7	10	5.0	6486303
Acid Extractable Cadmium (Cd)	ug/g	ND	0.12	0.18	0.10	6486303
Acid Extractable Chromium (Cr)	ug/g	15	25	30	1.0	6486303
Acid Extractable Cobalt (Co)	ug/g	5.7	14	22	0.10	6486303
Acid Extractable Copper (Cu)	ug/g	9.3	27	33	0.50	6486303
Acid Extractable Lead (Pb)	ug/g	8.7	19	20	1.0	6486303
Acid Extractable Molybdenum (Mo)	ug/g	0.92	1.2	1.5	0.50	6486303
Acid Extractable Nickel (Ni)	ug/g	11	31	39	0.50	6486303
Acid Extractable Selenium (Se)	ug/g	ND	ND	ND	0.50	6486303
Acid Extractable Silver (Ag)	ug/g	ND	ND	ND	0.20	6486303
Acid Extractable Thallium (Tl)	ug/g	0.080	0.14	0.19	0.050	6486303
Acid Extractable Uranium (U)	ug/g	0.49	0.62	0.83	0.050	6486303
Acid Extractable Vanadium (V)	ug/g	21	29	35	5.0	6486303
Acid Extractable Zinc (Zn)	ug/g	29	60	88	5.0	6486303
Acid Extractable Mercury (Hg)	ug/g	ND	0.065	0.077	0.050	6486303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LLK899	LLK900		
Sampling Date		2019/11/26 10:35	2019/11/26 13:00		
COC Number		748247-01-01	748247-01-01		
	UNITS	11205379-20-MW1-SS5	11205379-20-MW2S-SS1	RDL	QC Batch
Calculated Parameters					
Sodium Adsorption Ratio	N/A	5.2	0.31		6475825
Inorganics					
Conductivity	mS/cm	1.5	0.30	0.002	6487842
Available (CaCl2) pH	pH	6.77	7.44		6486135
WAD Cyanide (Free)	ug/g	0.01	0.02	0.01	6484103
Chromium (VI)	ug/g	ND	ND	0.2	6482783
Metals					
Hot Water Ext. Boron (B)	ug/g	0.30	0.26	0.050	6486282
Acid Extractable Antimony (Sb)	ug/g	ND	ND	0.20	6486303
Acid Extractable Arsenic (As)	ug/g	7.0	2.9	1.0	6486303
Acid Extractable Barium (Ba)	ug/g	170	89	0.50	6486303
Acid Extractable Beryllium (Be)	ug/g	1.2	0.52	0.20	6486303
Acid Extractable Boron (B)	ug/g	5.5	5.1	5.0	6486303
Acid Extractable Cadmium (Cd)	ug/g	0.23	0.13	0.10	6486303
Acid Extractable Chromium (Cr)	ug/g	40	19	1.0	6486303
Acid Extractable Cobalt (Co)	ug/g	19	7.8	0.10	6486303
Acid Extractable Copper (Cu)	ug/g	19	15	0.50	6486303
Acid Extractable Lead (Pb)	ug/g	20	16	1.0	6486303
Acid Extractable Molybdenum (Mo)	ug/g	1.4	1.1	0.50	6486303
Acid Extractable Nickel (Ni)	ug/g	32	17	0.50	6486303
Acid Extractable Selenium (Se)	ug/g	ND	ND	0.50	6486303
Acid Extractable Silver (Ag)	ug/g	ND	ND	0.20	6486303
Acid Extractable Thallium (Tl)	ug/g	0.22	0.20	0.050	6486303
Acid Extractable Uranium (U)	ug/g	0.97	0.85	0.050	6486303
Acid Extractable Vanadium (V)	ug/g	62	24	5.0	6486303
Acid Extractable Zinc (Zn)	ug/g	130	58	5.0	6486303
Acid Extractable Mercury (Hg)	ug/g	0.055	ND	0.050	6486303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9X8304
Report Date: 2019/12/12

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LLK901			LLK901		
Sampling Date		2019/11/26 13:10			2019/11/26 13:10		
COC Number		748247-01-01			748247-01-01		
	UNITS	11205379-20-MW2S-SS2	RDL	QC Batch	11205379-20-MW2S-SS2 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	0.72		6475825			
Inorganics							
Conductivity	mS/cm	0.24	0.002	6487842	0.23	0.002	6487842
Moisture	%	16	1.0	6485279			
Available (CaCl2) pH	pH	7.33		6486135			
WAD Cyanide (Free)	ug/g	0.01	0.01	6484103			
Chromium (VI)	ug/g	ND	0.2	6482783			
Metals							
Hot Water Ext. Boron (B)	ug/g	0.13	0.050	6486282			
Acid Extractable Antimony (Sb)	ug/g	0.49	0.20	6486303	0.25	0.20	6486303
Acid Extractable Arsenic (As)	ug/g	5.5	1.0	6486303	5.5	1.0	6486303
Acid Extractable Barium (Ba)	ug/g	95	0.50	6486303	99	0.50	6486303
Acid Extractable Beryllium (Be)	ug/g	0.94	0.20	6486303	0.99	0.20	6486303
Acid Extractable Boron (B)	ug/g	7.3	5.0	6486303	7.3	5.0	6486303
Acid Extractable Cadmium (Cd)	ug/g	0.15	0.10	6486303	0.16	0.10	6486303
Acid Extractable Chromium (Cr)	ug/g	31	1.0	6486303	33	1.0	6486303
Acid Extractable Cobalt (Co)	ug/g	20	0.10	6486303	21	0.10	6486303
Acid Extractable Copper (Cu)	ug/g	29	0.50	6486303	30	0.50	6486303
Acid Extractable Lead (Pb)	ug/g	40	1.0	6486303	25 (1)	1.0	6486303
Acid Extractable Molybdenum (Mo)	ug/g	1.4	0.50	6486303	1.6	0.50	6486303
Acid Extractable Nickel (Ni)	ug/g	35	0.50	6486303	36	0.50	6486303
Acid Extractable Selenium (Se)	ug/g	ND	0.50	6486303	ND	0.50	6486303
Acid Extractable Silver (Ag)	ug/g	ND	0.20	6486303	ND	0.20	6486303
Acid Extractable Thallium (Tl)	ug/g	0.31	0.050	6486303	0.31	0.050	6486303
Acid Extractable Uranium (U)	ug/g	1.1	0.050	6486303	1.0	0.050	6486303
Acid Extractable Vanadium (V)	ug/g	40	5.0	6486303	41	5.0	6486303
Acid Extractable Zinc (Zn)	ug/g	77	5.0	6486303	71	5.0	6486303
Acid Extractable Mercury (Hg)	ug/g	0.051	0.050	6486303	0.063	0.050	6486303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LLK903			LLK904		
Sampling Date		2019/11/26 13:35			2019/11/29 08:05		
COC Number		748247-01-01			748247-01-01		
	UNITS	11205379-20-MW2S-SS4	RDL	QC Batch	11205379-20-MW3S-SS1	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	1.3		6475825	6.2		6475825
Inorganics							
Conductivity	mS/cm	0.67	0.002	6487842	0.45	0.002	6487842
Moisture	%	23	1.0	6485279			
Available (CaCl2) pH	pH	6.09		6486135	7.56		6486135
WAD Cyanide (Free)	ug/g	0.01	0.01	6484103	0.01	0.01	6484103
Chromium (VI)	ug/g	ND	0.2	6482783	ND	0.2	6482783
Metals							
Hot Water Ext. Boron (B)	ug/g	0.82	0.050	6486282	0.11	0.050	6486282
Acid Extractable Antimony (Sb)	ug/g	0.22	0.20	6486303	ND	0.20	6486303
Acid Extractable Arsenic (As)	ug/g	5.4	1.0	6486303	3.7	1.0	6486303
Acid Extractable Barium (Ba)	ug/g	140	0.50	6486303	260	0.50	6486303
Acid Extractable Beryllium (Be)	ug/g	0.99	0.20	6486303	0.73	0.20	6486303
Acid Extractable Boron (B)	ug/g	5.1	5.0	6486303	8.2	5.0	6486303
Acid Extractable Cadmium (Cd)	ug/g	0.30	0.10	6486303	0.29	0.10	6486303
Acid Extractable Chromium (Cr)	ug/g	29	1.0	6486303	50	1.0	6486303
Acid Extractable Cobalt (Co)	ug/g	14	0.10	6486303	15	0.10	6486303
Acid Extractable Copper (Cu)	ug/g	29	0.50	6486303	30	0.50	6486303
Acid Extractable Lead (Pb)	ug/g	28	1.0	6486303	28	1.0	6486303
Acid Extractable Molybdenum (Mo)	ug/g	1.3	0.50	6486303	1.2	0.50	6486303
Acid Extractable Nickel (Ni)	ug/g	29	0.50	6486303	36	0.50	6486303
Acid Extractable Selenium (Se)	ug/g	ND	0.50	6486303	ND	0.50	6486303
Acid Extractable Silver (Ag)	ug/g	ND	0.20	6486303	ND	0.20	6486303
Acid Extractable Thallium (Tl)	ug/g	0.20	0.050	6486303	0.22	0.050	6486303
Acid Extractable Uranium (U)	ug/g	0.99	0.050	6486303	0.65	0.050	6486303
Acid Extractable Vanadium (V)	ug/g	38	5.0	6486303	53	5.0	6486303
Acid Extractable Zinc (Zn)	ug/g	97	5.0	6486303	97	5.0	6486303
Acid Extractable Mercury (Hg)	ug/g	0.10	0.050	6486303	ND	0.050	6486303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LLK904			LLK905		
Sampling Date		2019/11/29 08:05			2019/11/29 08:25		
COC Number		748247-01-01			748247-01-01		
	UNITS	11205379-20-MW3S-SS1 Lab-Dup	RDL	QC Batch	11205379-20-MW3S-SS2	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A				3.2		6475825
Inorganics							
Conductivity	mS/cm				0.48	0.002	6487842
Available (CaCl2) pH	pH				7.84		6486135
WAD Cyanide (Free)	ug/g	0.01	0.01	6484103	ND	0.01	6484103
Chromium (VI)	ug/g				ND	0.2	6482783
Metals							
Hot Water Ext. Boron (B)	ug/g	0.11	0.050	6486282	ND	0.050	6486282
Acid Extractable Antimony (Sb)	ug/g				ND	0.20	6486303
Acid Extractable Arsenic (As)	ug/g				1.8	1.0	6486303
Acid Extractable Barium (Ba)	ug/g				60	0.50	6486303
Acid Extractable Beryllium (Be)	ug/g				0.34	0.20	6486303
Acid Extractable Boron (B)	ug/g				5.8	5.0	6486303
Acid Extractable Cadmium (Cd)	ug/g				ND	0.10	6486303
Acid Extractable Chromium (Cr)	ug/g				15	1.0	6486303
Acid Extractable Cobalt (Co)	ug/g				5.7	0.10	6486303
Acid Extractable Copper (Cu)	ug/g				14	0.50	6486303
Acid Extractable Lead (Pb)	ug/g				6.5	1.0	6486303
Acid Extractable Molybdenum (Mo)	ug/g				0.90	0.50	6486303
Acid Extractable Nickel (Ni)	ug/g				11	0.50	6486303
Acid Extractable Selenium (Se)	ug/g				ND	0.50	6486303
Acid Extractable Silver (Ag)	ug/g				ND	0.20	6486303
Acid Extractable Thallium (Tl)	ug/g				0.11	0.050	6486303
Acid Extractable Uranium (U)	ug/g				0.48	0.050	6486303
Acid Extractable Vanadium (V)	ug/g				23	5.0	6486303
Acid Extractable Zinc (Zn)	ug/g				24	5.0	6486303
Acid Extractable Mercury (Hg)	ug/g				ND	0.050	6486303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LLK905			LLK906		
Sampling Date		2019/11/29 08:25			2019/11/29 08:35		
COC Number		748247-01-01			748247-01-01		
	UNITS	11205379-20-MW3S-SS2 Lab-Dup	RDL	QC Batch	11205379-20-MW3S-SS3	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A				27		6475825
Inorganics							
Conductivity	mS/cm				2.2	0.002	6487842
Available (CaCl2) pH	pH				7.33		6486135
WAD Cyanide (Free)	ug/g				ND	0.01	6484103
Chromium (VI)	ug/g	ND	0.2	6482783	ND	0.2	6482783
Metals							
Hot Water Ext. Boron (B)	ug/g				0.23	0.050	6486282
Acid Extractable Antimony (Sb)	ug/g				ND	0.20	6486303
Acid Extractable Arsenic (As)	ug/g				4.4	1.0	6486303
Acid Extractable Barium (Ba)	ug/g				100	0.50	6486303
Acid Extractable Beryllium (Be)	ug/g				0.83	0.20	6486303
Acid Extractable Boron (B)	ug/g				6.2	5.0	6486303
Acid Extractable Cadmium (Cd)	ug/g				0.22	0.10	6486303
Acid Extractable Chromium (Cr)	ug/g				26	1.0	6486303
Acid Extractable Cobalt (Co)	ug/g				14	0.10	6486303
Acid Extractable Copper (Cu)	ug/g				25	0.50	6486303
Acid Extractable Lead (Pb)	ug/g				19	1.0	6486303
Acid Extractable Molybdenum (Mo)	ug/g				1.5	0.50	6486303
Acid Extractable Nickel (Ni)	ug/g				28	0.50	6486303
Acid Extractable Selenium (Se)	ug/g				ND	0.50	6486303
Acid Extractable Silver (Ag)	ug/g				ND	0.20	6486303
Acid Extractable Thallium (Tl)	ug/g				0.19	0.050	6486303
Acid Extractable Uranium (U)	ug/g				0.84	0.050	6486303
Acid Extractable Vanadium (V)	ug/g				36	5.0	6486303
Acid Extractable Zinc (Zn)	ug/g				82	5.0	6486303
Acid Extractable Mercury (Hg)	ug/g				0.093	0.050	6486303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LLK907	LLK908		
Sampling Date		2019/11/29 10:50	2019/11/29 11:00		
COC Number		748247-01-01	748247-01-01		
	UNITS	11205379-20-BH7-SS1	11205379-20-BH7-SS2	RDL	QC Batch
Calculated Parameters					
Sodium Adsorption Ratio	N/A	13	18		6475825
Inorganics					
Conductivity	mS/cm	0.43	1.2	0.002	6487842
Available (CaCl2) pH	pH	7.78	7.88		6486135
WAD Cyanide (Free)	ug/g	ND	ND	0.01	6484103
Chromium (VI)	ug/g	ND	ND	0.2	6482783
Metals					
Hot Water Ext. Boron (B)	ug/g	0.38	0.13	0.050	6486282
Acid Extractable Antimony (Sb)	ug/g	ND	ND	0.20	6486303
Acid Extractable Arsenic (As)	ug/g	1.9	6.1	1.0	6486303
Acid Extractable Barium (Ba)	ug/g	350	120	0.50	6486303
Acid Extractable Beryllium (Be)	ug/g	0.24	1.3	0.20	6486303
Acid Extractable Boron (B)	ug/g	9.2	9.0	5.0	6486303
Acid Extractable Cadmium (Cd)	ug/g	ND	ND	0.10	6486303
Acid Extractable Chromium (Cr)	ug/g	8.1	32	1.0	6486303
Acid Extractable Cobalt (Co)	ug/g	3.9	13	0.10	6486303
Acid Extractable Copper (Cu)	ug/g	5.3	36	0.50	6486303
Acid Extractable Lead (Pb)	ug/g	6.6	11	1.0	6486303
Acid Extractable Molybdenum (Mo)	ug/g	0.69	1.0	0.50	6486303
Acid Extractable Nickel (Ni)	ug/g	8.9	40	0.50	6486303
Acid Extractable Selenium (Se)	ug/g	ND	ND	0.50	6486303
Acid Extractable Silver (Ag)	ug/g	ND	ND	0.20	6486303
Acid Extractable Thallium (Tl)	ug/g	0.11	0.17	0.050	6486303
Acid Extractable Uranium (U)	ug/g	0.31	0.77	0.050	6486303
Acid Extractable Vanadium (V)	ug/g	6.4	37	5.0	6486303
Acid Extractable Zinc (Zn)	ug/g	8.0	75	5.0	6486303
Acid Extractable Mercury (Hg)	ug/g	ND	ND	0.050	6486303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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BV Labs Job #: B9X8304
Report Date: 2019/12/12

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LLK895		LLK900		LLK904		
Sampling Date		2019/11/26 09:50		2019/11/26 13:00		2019/11/29 08:05		
COC Number		748247-01-01		748247-01-01		748247-01-01		
	UNITS	11205379-20-MW1-SS1	RDL	11205379-20-MW2S-SS1	RDL	11205379-20-MW3S-SS1	RDL	QC Batch
Calculated Parameters								
Chlordane (Total)	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6475824
o,p-DDD + p,p-DDD	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6475824
o,p-DDE + p,p-DDE	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6475824
o,p-DDT + p,p-DDT	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6475824
Total Endosulfan	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6475824
Total PCB	ug/g	ND	0.015	ND	0.075	ND	0.015	6475824
Pesticides & Herbicides								
Aldrin	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
a-Chlordane	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
g-Chlordane	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
o,p-DDD	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
p,p-DDD	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
o,p-DDE	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
p,p-DDE	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
o,p-DDT	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
p,p-DDT	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Dieldrin	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Lindane	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Endosulfan I (alpha)	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Endosulfan II (beta)	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Endrin	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Heptachlor	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Heptachlor epoxide	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Hexachlorobenzene	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Hexachlorobutadiene	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Hexachloroethane	ug/g	ND	0.0020	ND	0.010	ND	0.0020	6486675
Methoxychlor	ug/g	ND	0.0050	ND	0.025	ND	0.0050	6486675
Aroclor 1242	ug/g	ND	0.015	ND	0.075	ND	0.015	6486675
Aroclor 1248	ug/g	ND	0.015	ND	0.075	ND	0.015	6486675
Aroclor 1254	ug/g	ND	0.015	ND	0.075	ND	0.015	6486675
Aroclor 1260	ug/g	ND	0.015	ND	0.075	ND	0.015	6486675
Surrogate Recovery (%)								
2,4,5,6-Tetrachloro-m-xylene	%	107		127		114		6486675

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9X8304
Report Date: 2019/12/12

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LLK895		LLK900		LLK904		
Sampling Date		2019/11/26 09:50		2019/11/26 13:00		2019/11/29 08:05		
COC Number		748247-01-01		748247-01-01		748247-01-01		
	UNITS	11205379-20-MW1-SS1	RDL	11205379-20-MW2S-SS1	RDL	11205379-20-MW3S-SS1	RDL	QC Batch
Decachlorobiphenyl	%	92		63		69		6486675

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LLK907		
Sampling Date		2019/11/29 10:50		
COC Number		748247-01-01		
	UNITS	11205379-20-BH7-SS1	RDL	QC Batch
Calculated Parameters				
Chlordane (Total)	ug/g	ND	0.0020	6475824
o,p-DDD + p,p-DDD	ug/g	ND	0.0020	6475824
o,p-DDE + p,p-DDE	ug/g	ND	0.0020	6475824
o,p-DDT + p,p-DDT	ug/g	ND	0.0020	6475824
Total Endosulfan	ug/g	ND	0.0020	6475824
Total PCB	ug/g	ND	0.015	6475824
Pesticides & Herbicides				
Aldrin	ug/g	ND	0.0020	6486675
a-Chlordane	ug/g	ND	0.0020	6486675
g-Chlordane	ug/g	ND	0.0020	6486675
o,p-DDD	ug/g	ND	0.0020	6486675
p,p-DDD	ug/g	ND	0.0020	6486675
o,p-DDE	ug/g	ND	0.0020	6486675
p,p-DDE	ug/g	ND	0.0020	6486675
o,p-DDT	ug/g	ND	0.0020	6486675
p,p-DDT	ug/g	ND	0.0020	6486675
Dieldrin	ug/g	ND	0.0020	6486675
Lindane	ug/g	ND	0.0020	6486675
Endosulfan I (alpha)	ug/g	ND	0.0020	6486675
Endosulfan II (beta)	ug/g	ND	0.0020	6486675
Endrin	ug/g	ND	0.0020	6486675
Heptachlor	ug/g	ND	0.0020	6486675
Heptachlor epoxide	ug/g	ND	0.0020	6486675
Hexachlorobenzene	ug/g	ND	0.0020	6486675
Hexachlorobutadiene	ug/g	ND	0.0020	6486675
Hexachloroethane	ug/g	ND	0.0020	6486675
Methoxychlor	ug/g	ND	0.0050	6486675
Aroclor 1242	ug/g	ND	0.015	6486675
Aroclor 1248	ug/g	ND	0.015	6486675
Aroclor 1254	ug/g	ND	0.015	6486675
Aroclor 1260	ug/g	ND	0.015	6486675
Surrogate Recovery (%)				
2,4,5,6-Tetrachloro-m-xylene	%	95		6486675

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LLK907		
Sampling Date		2019/11/29 10:50		
COC Number		748247-01-01		
	UNITS	**11205379-20-BH7-SS1**	**RDL**	**QC Batch**
Decachlorobiphenyl	%	67		6486675

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs Job #: B9X8304
Report Date: 2019/12/12

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 PAHS (SOIL)

BV Labs ID		LLK895		LLK900	LLK904		
Sampling Date		2019/11/26 09:50		2019/11/26 13:00	2019/11/29 08:05		
COC Number		748247-01-01		748247-01-01	748247-01-01		
	UNITS	11205379-20-MW1-SS1	RDL	11205379-20-MW2S-SS1	11205379-20-MW3S-SS1	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	ND	ND	0.071	6475822
Polyaromatic Hydrocarbons							
Acenaphthene	ug/g	ND	0.0050	ND	ND	0.050	6487970
Acenaphthylene	ug/g	0.0082	0.0050	ND	ND	0.050	6487970
Anthracene	ug/g	0.035	0.0050	ND	ND	0.050	6487970
Benzo(a)anthracene	ug/g	0.13	0.0050	ND	ND	0.050	6487970
Benzo(a)pyrene	ug/g	0.11	0.0050	ND	ND	0.050	6487970
Benzo(b/j)fluoranthene	ug/g	0.13	0.0050	ND	ND	0.050	6487970
Benzo(g,h,i)perylene	ug/g	0.055	0.0050	ND	ND	0.050	6487970
Benzo(k)fluoranthene	ug/g	0.047	0.0050	ND	ND	0.050	6487970
Chrysene	ug/g	0.083	0.0050	ND	ND	0.050	6487970
Dibenzo(a,h)anthracene	ug/g	0.015	0.0050	ND	ND	0.050	6487970
Fluoranthene	ug/g	0.25	0.0050	ND	ND	0.050	6487970
Fluorene	ug/g	ND	0.0050	ND	ND	0.050	6487970
Indeno(1,2,3-cd)pyrene	ug/g	0.057	0.0050	ND	ND	0.050	6487970
1-Methylnaphthalene	ug/g	ND	0.0050	ND	ND	0.050	6487970
2-Methylnaphthalene	ug/g	ND	0.0050	ND	ND	0.050	6487970
Naphthalene	ug/g	ND	0.0050	ND	ND	0.050	6487970
Phenanthrene	ug/g	0.094	0.0050	ND	ND	0.050	6487970
Pyrene	ug/g	0.18	0.0050	ND	ND	0.050	6487970
Surrogate Recovery (%)							
D10-Anthracene	%	97		104	111		6487970
D14-Terphenyl (FS)	%	94		85	91		6487970
D8-Acenaphthylene	%	92		88	102		6487970

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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O.REG 153 PAHS (SOIL)

BV Labs ID		LLK907		
Sampling Date		2019/11/29 10:50		
COC Number		748247-01-01		
	UNITS	11205379-20-BH7-SS1	RDL	QC Batch
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	ND	0.0071	6475822
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	ND	0.0050	6487970
Acenaphthylene	ug/g	ND	0.0050	6487970
Anthracene	ug/g	ND	0.0050	6487970
Benzo(a)anthracene	ug/g	ND	0.0050	6487970
Benzo(a)pyrene	ug/g	ND	0.0050	6487970
Benzo(b/j)fluoranthene	ug/g	ND	0.0050	6487970
Benzo(g,h,i)perylene	ug/g	ND	0.0050	6487970
Benzo(k)fluoranthene	ug/g	ND	0.0050	6487970
Chrysene	ug/g	0.0050	0.0050	6487970
Dibenzo(a,h)anthracene	ug/g	ND	0.0050	6487970
Fluoranthene	ug/g	ND	0.0050	6487970
Fluorene	ug/g	ND	0.0050	6487970
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.0050	6487970
1-Methylnaphthalene	ug/g	ND	0.0050	6487970
2-Methylnaphthalene	ug/g	0.0059	0.0050	6487970
Naphthalene	ug/g	ND	0.0050	6487970
Phenanthrene	ug/g	0.015	0.0050	6487970
Pyrene	ug/g	0.0071	0.0050	6487970
Surrogate Recovery (%)				
D10-Anthracene	%	106		6487970
D14-Terphenyl (FS)	%	98		6487970
D8-Acenaphthylene	%	112		6487970

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK895			LLK897		
Sampling Date		2019/11/26 09:50			2019/11/26 10:05		
COC Number		748247-01-01			748247-01-01		
	UNITS	11205379-20-MW1-SS1	RDL	QC Batch	11205379-20-MW1-SS3	RDL	QC Batch
Inorganics							
Moisture	%				5.9	1.0	6485279
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.050	6475823	ND	0.050	6475823
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	0.50	6480644	ND (1)	0.60	6480644
Benzene	ug/g	ND	0.020	6480644	ND	0.020	6480644
Bromodichloromethane	ug/g	ND	0.050	6480644	ND	0.050	6480644
Bromoform	ug/g	ND	0.050	6480644	ND	0.050	6480644
Bromomethane	ug/g	ND	0.050	6480644	ND	0.050	6480644
Carbon Tetrachloride	ug/g	ND	0.050	6480644	ND	0.050	6480644
Chlorobenzene	ug/g	ND	0.050	6480644	ND	0.050	6480644
Chloroform	ug/g	ND	0.050	6480644	ND	0.050	6480644
Dibromochloromethane	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,2-Dichlorobenzene	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,3-Dichlorobenzene	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,4-Dichlorobenzene	ug/g	ND	0.050	6480644	ND	0.050	6480644
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,1-Dichloroethane	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,2-Dichloroethane	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,1-Dichloroethylene	ug/g	ND	0.050	6480644	ND	0.050	6480644
cis-1,2-Dichloroethylene	ug/g	ND	0.050	6480644	ND	0.050	6480644
trans-1,2-Dichloroethylene	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,2-Dichloropropane	ug/g	ND	0.050	6480644	ND	0.050	6480644
cis-1,3-Dichloropropene	ug/g	ND	0.030	6480644	ND	0.030	6480644
trans-1,3-Dichloropropene	ug/g	ND	0.040	6480644	ND	0.040	6480644
Ethylbenzene	ug/g	ND	0.020	6480644	ND	0.020	6480644
Ethylene Dibromide	ug/g	ND	0.050	6480644	ND	0.050	6480644
Hexane	ug/g	ND	0.050	6480644	1.3	0.050	6480644
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	6480644	ND	0.050	6480644
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	6480644	ND	0.50	6480644
Methyl Isobutyl Ketone	ug/g	ND	0.50	6480644	ND	0.50	6480644
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	6480644	ND	0.050	6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected
(1) The detection limit was raised due to matrix interference.

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK895			LLK897		
Sampling Date		2019/11/26 09:50			2019/11/26 10:05		
COC Number		748247-01-01			748247-01-01		
	UNITS	11205379-20-MW1-SS1	RDL	QC Batch	11205379-20-MW1-SS3	RDL	QC Batch
Styrene	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	6480644	ND	0.050	6480644
Tetrachloroethylene	ug/g	ND	0.050	6480644	ND	0.050	6480644
Toluene	ug/g	ND	0.020	6480644	ND	0.020	6480644
1,1,1-Trichloroethane	ug/g	ND	0.050	6480644	ND	0.050	6480644
1,1,2-Trichloroethane	ug/g	ND	0.050	6480644	ND	0.050	6480644
Trichloroethylene	ug/g	ND	0.050	6480644	ND	0.050	6480644
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	6480644	ND	0.050	6480644
Vinyl Chloride	ug/g	ND	0.020	6480644	ND	0.020	6480644
p+m-Xylene	ug/g	ND	0.020	6480644	0.35	0.020	6480644
o-Xylene	ug/g	ND	0.020	6480644	0.083	0.020	6480644
Total Xylenes	ug/g	ND	0.020	6480644	0.44	0.020	6480644
F1 (C6-C10)	ug/g	ND	10	6480644	39	10	6480644
F1 (C6-C10) - BTEX	ug/g	ND	10	6480644	38	10	6480644
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	19	10	6486564	39	10	6486564
F3 (C16-C34 Hydrocarbons)	ug/g	52	50	6486564	ND	50	6486564
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	6486564	ND	50	6486564
Reached Baseline at C50	ug/g	Yes		6486564	Yes		6486564
Surrogate Recovery (%)							
o-Terphenyl	%	86		6486564	88		6486564
4-Bromofluorobenzene	%	96		6480644	98		6480644
D10-o-Xylene	%	120		6480644	108		6480644
D4-1,2-Dichloroethane	%	98		6480644	97		6480644
D8-Toluene	%	101		6480644	100		6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK898		LLK899	LLK900		
Sampling Date		2019/11/26 10:20		2019/11/26 10:35	2019/11/26 13:00		
COC Number		748247-01-01		748247-01-01	748247-01-01		
	UNITS	11205379-20-MW1-SS4	RDL	11205379-20-MW1-SS5	11205379-20-MW2S-SS1	RDL	QC Batch
Inorganics							
Moisture	%	7.5	1.0	20	13	1.0	6485279
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.050	ND	ND	0.050	6475823
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND (1)	1.6	ND	ND	0.50	6480644
Benzene	ug/g	ND	0.020	ND	ND	0.020	6480644
Bromodichloromethane	ug/g	ND	0.050	ND	ND	0.050	6480644
Bromoform	ug/g	ND	0.050	ND	ND	0.050	6480644
Bromomethane	ug/g	ND	0.050	ND	ND	0.050	6480644
Carbon Tetrachloride	ug/g	ND	0.050	ND	ND	0.050	6480644
Chlorobenzene	ug/g	ND	0.050	ND	ND	0.050	6480644
Chloroform	ug/g	ND	0.050	ND	ND	0.050	6480644
Dibromochloromethane	ug/g	ND	0.050	ND	ND	0.050	6480644
1,2-Dichlorobenzene	ug/g	ND	0.050	ND	ND	0.050	6480644
1,3-Dichlorobenzene	ug/g	ND	0.050	ND	ND	0.050	6480644
1,4-Dichlorobenzene	ug/g	ND	0.050	ND	ND	0.050	6480644
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	ND	ND	0.050	6480644
1,1-Dichloroethane	ug/g	ND	0.050	ND	ND	0.050	6480644
1,2-Dichloroethane	ug/g	ND	0.050	ND	ND	0.050	6480644
1,1-Dichloroethylene	ug/g	ND	0.050	ND	ND	0.050	6480644
cis-1,2-Dichloroethylene	ug/g	ND	0.050	ND	ND	0.050	6480644
trans-1,2-Dichloroethylene	ug/g	ND	0.050	ND	ND	0.050	6480644
1,2-Dichloropropane	ug/g	ND	0.050	ND	ND	0.050	6480644
cis-1,3-Dichloropropene	ug/g	ND	0.030	ND	ND	0.030	6480644
trans-1,3-Dichloropropene	ug/g	ND	0.040	ND	ND	0.040	6480644
Ethylbenzene	ug/g	0.081	0.020	ND	ND	0.020	6480644
Ethylene Dibromide	ug/g	ND	0.050	ND	ND	0.050	6480644
Hexane	ug/g	3.1	0.050	0.086	ND	0.050	6480644
Methylene Chloride(Dichloromethane)	ug/g	ND (1)	0.060	ND	ND	0.050	6480644
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	ND	ND	0.50	6480644
Methyl Isobutyl Ketone	ug/g	ND	0.50	ND	ND	0.50	6480644
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	ND	ND	0.050	6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected
(1) The detection limit was raised due to matrix interference.

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK898		LLK899	LLK900		
Sampling Date		2019/11/26 10:20		2019/11/26 10:35	2019/11/26 13:00		
COC Number		748247-01-01		748247-01-01	748247-01-01		
	UNITS	11205379-20-MW1-SS4	RDL	11205379-20-MW1-SS5	11205379-20-MW2S-SS1	RDL	QC Batch
Styrene	ug/g	ND	0.050	ND	ND	0.050	6480644
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	ND	ND	0.050	6480644
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	ND	ND	0.050	6480644
Tetrachloroethylene	ug/g	ND	0.050	ND	ND	0.050	6480644
Toluene	ug/g	0.19	0.020	ND	ND	0.020	6480644
1,1,1-Trichloroethane	ug/g	ND	0.050	ND	ND	0.050	6480644
1,1,2-Trichloroethane	ug/g	ND	0.050	ND	ND	0.050	6480644
Trichloroethylene	ug/g	ND	0.050	ND	ND	0.050	6480644
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	ND	ND	0.050	6480644
Vinyl Chloride	ug/g	ND	0.020	ND	ND	0.020	6480644
p+m-Xylene	ug/g	1.2	0.020	0.041	ND	0.020	6480644
o-Xylene	ug/g	0.31	0.020	ND	ND	0.020	6480644
Total Xylenes	ug/g	1.5	0.020	0.041	ND	0.020	6480644
F1 (C6-C10)	ug/g	52	10	ND	ND	10	6480644
F1 (C6-C10) - BTEX	ug/g	50	10	ND	ND	10	6480644
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	41	10	ND	ND	10	6486564
F3 (C16-C34 Hydrocarbons)	ug/g	ND	50	ND	96	50	6486564
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	ND	560	50	6486564
Reached Baseline at C50	ug/g	Yes		Yes	No		6486564
Surrogate Recovery (%)							
o-Terphenyl	%	91		88	90		6486564
4-Bromofluorobenzene	%	98		96	96		6480644
D10-o-Xylene	%	107		116	108		6480644
D4-1,2-Dichloroethane	%	99		99	98		6480644
D8-Toluene	%	99		100	101		6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK901	LLK903		
Sampling Date		2019/11/26 13:10	2019/11/26 13:35		
COC Number		748247-01-01	748247-01-01		
	UNITS	11205379-20-MW2S-SS2	11205379-20-MW2S-SS4	RDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.050	6475823
Volatile Organics					
Acetone (2-Propanone)	ug/g	ND	ND	0.50	6480644
Benzene	ug/g	ND	ND	0.020	6480644
Bromodichloromethane	ug/g	ND	ND	0.050	6480644
Bromoform	ug/g	ND	ND	0.050	6480644
Bromomethane	ug/g	ND	ND	0.050	6480644
Carbon Tetrachloride	ug/g	ND	ND	0.050	6480644
Chlorobenzene	ug/g	ND	ND	0.050	6480644
Chloroform	ug/g	ND	ND	0.050	6480644
Dibromochloromethane	ug/g	ND	ND	0.050	6480644
1,2-Dichlorobenzene	ug/g	ND	ND	0.050	6480644
1,3-Dichlorobenzene	ug/g	ND	ND	0.050	6480644
1,4-Dichlorobenzene	ug/g	ND	ND	0.050	6480644
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	0.050	6480644
1,1-Dichloroethane	ug/g	ND	ND	0.050	6480644
1,2-Dichloroethane	ug/g	ND	ND	0.050	6480644
1,1-Dichloroethylene	ug/g	ND	ND	0.050	6480644
cis-1,2-Dichloroethylene	ug/g	ND	ND	0.050	6480644
trans-1,2-Dichloroethylene	ug/g	ND	ND	0.050	6480644
1,2-Dichloropropane	ug/g	ND	ND	0.050	6480644
cis-1,3-Dichloropropene	ug/g	ND	ND	0.030	6480644
trans-1,3-Dichloropropene	ug/g	ND	ND	0.040	6480644
Ethylbenzene	ug/g	ND	ND	0.020	6480644
Ethylene Dibromide	ug/g	ND	ND	0.050	6480644
Hexane	ug/g	0.072	ND	0.050	6480644
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	0.050	6480644
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	0.50	6480644
Methyl Isobutyl Ketone	ug/g	ND	ND	0.50	6480644
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	0.050	6480644
Styrene	ug/g	ND	ND	0.050	6480644
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	0.050	6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK901	LLK903		
Sampling Date		2019/11/26 13:10	2019/11/26 13:35		
COC Number		748247-01-01	748247-01-01		
	UNITS	11205379-20-MW2S-SS2	11205379-20-MW2S-SS4	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	0.050	6480644
Tetrachloroethylene	ug/g	ND	ND	0.050	6480644
Toluene	ug/g	ND	ND	0.020	6480644
1,1,1-Trichloroethane	ug/g	ND	ND	0.050	6480644
1,1,2-Trichloroethane	ug/g	ND	ND	0.050	6480644
Trichloroethylene	ug/g	ND	ND	0.050	6480644
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	0.050	6480644
Vinyl Chloride	ug/g	ND	ND	0.020	6480644
p+m-Xylene	ug/g	ND	ND	0.020	6480644
o-Xylene	ug/g	ND	ND	0.020	6480644
Total Xylenes	ug/g	ND	ND	0.020	6480644
F1 (C6-C10)	ug/g	ND	ND	10	6480644
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	6480644
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	10	6486564
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	50	6486564
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	50	6486564
Reached Baseline at C50	ug/g	Yes	Yes		6486564
Surrogate Recovery (%)					
o-Terphenyl	%	93	92		6486564
4-Bromofluorobenzene	%	97	94		6480644
D10-o-Xylene	%	96	104		6480644
D4-1,2-Dichloroethane	%	101	101		6480644
D8-Toluene	%	100	101		6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK904	LLK905		
Sampling Date		2019/11/29 08:05	2019/11/29 08:25		
COC Number		748247-01-01	748247-01-01		
	UNITS	11205379-20-MW3S-SS1	11205379-20-MW3S-SS2	RDL	QC Batch
Inorganics					
Moisture	%	19	8.1	1.0	6485279
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.050	6475823
Volatile Organics					
Acetone (2-Propanone)	ug/g	ND	ND	0.50	6480644
Benzene	ug/g	ND	ND	0.020	6480644
Bromodichloromethane	ug/g	ND	ND	0.050	6480644
Bromoform	ug/g	ND	ND	0.050	6480644
Bromomethane	ug/g	ND	ND	0.050	6480644
Carbon Tetrachloride	ug/g	ND	ND	0.050	6480644
Chlorobenzene	ug/g	ND	ND	0.050	6480644
Chloroform	ug/g	ND	ND	0.050	6480644
Dibromochloromethane	ug/g	ND	ND	0.050	6480644
1,2-Dichlorobenzene	ug/g	ND	ND	0.050	6480644
1,3-Dichlorobenzene	ug/g	ND	ND	0.050	6480644
1,4-Dichlorobenzene	ug/g	ND	ND	0.050	6480644
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	0.050	6480644
1,1-Dichloroethane	ug/g	ND	ND	0.050	6480644
1,2-Dichloroethane	ug/g	ND	ND	0.050	6480644
1,1-Dichloroethylene	ug/g	ND	ND	0.050	6480644
cis-1,2-Dichloroethylene	ug/g	ND	ND	0.050	6480644
trans-1,2-Dichloroethylene	ug/g	ND	ND	0.050	6480644
1,2-Dichloropropane	ug/g	ND	ND	0.050	6480644
cis-1,3-Dichloropropene	ug/g	ND	ND	0.030	6480644
trans-1,3-Dichloropropene	ug/g	ND	ND	0.040	6480644
Ethylbenzene	ug/g	ND	ND	0.020	6480644
Ethylene Dibromide	ug/g	ND	ND	0.050	6480644
Hexane	ug/g	0.12	ND	0.050	6480644
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	0.050	6480644
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	0.50	6480644
Methyl Isobutyl Ketone	ug/g	ND	ND	0.50	6480644
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	0.050	6480644
Styrene	ug/g	ND	ND	0.050	6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK904	LLK905		
Sampling Date		2019/11/29 08:05	2019/11/29 08:25		
COC Number		748247-01-01	748247-01-01		
	UNITS	11205379-20-MW3S-SS1	11205379-20-MW3S-SS2	RDL	QC Batch
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	0.050	6480644
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	0.050	6480644
Tetrachloroethylene	ug/g	ND	ND	0.050	6480644
Toluene	ug/g	ND	ND	0.020	6480644
1,1,1-Trichloroethane	ug/g	ND	ND	0.050	6480644
1,1,2-Trichloroethane	ug/g	ND	ND	0.050	6480644
Trichloroethylene	ug/g	ND	ND	0.050	6480644
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	0.050	6480644
Vinyl Chloride	ug/g	ND	ND	0.020	6480644
p+m-Xylene	ug/g	0.036	ND	0.020	6480644
o-Xylene	ug/g	ND	ND	0.020	6480644
Total Xylenes	ug/g	0.036	ND	0.020	6480644
F1 (C6-C10)	ug/g	ND	ND	10	6480644
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	6480644
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	10	6486564
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	50	6486564
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	50	6486564
Reached Baseline at C50	ug/g	Yes	Yes		6486564
Surrogate Recovery (%)					
o-Terphenyl	%	93	95		6486564
4-Bromofluorobenzene	%	96	95		6480644
D10-o-Xylene	%	106	104		6480644
D4-1,2-Dichloroethane	%	100	100		6480644
D8-Toluene	%	100	100		6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK905			LLK906		
Sampling Date		2019/11/29 08:25			2019/11/29 08:35		
COC Number		748247-01-01			748247-01-01		
	UNITS	11205379-20-MW3S-SS2 Lab-Dup	RDL	QC Batch	11205379-20-MW3S-SS3	RDL	QC Batch
Inorganics							
Moisture	%				15	1.0	6485279
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g				ND	0.050	6475823
Volatile Organics							
Acetone (2-Propanone)	ug/g				ND	0.50	6480644
Benzene	ug/g				ND	0.020	6480644
Bromodichloromethane	ug/g				ND	0.050	6480644
Bromoform	ug/g				ND	0.050	6480644
Bromomethane	ug/g				ND	0.050	6480644
Carbon Tetrachloride	ug/g				ND	0.050	6480644
Chlorobenzene	ug/g				ND	0.050	6480644
Chloroform	ug/g				ND	0.050	6480644
Dibromochloromethane	ug/g				ND	0.050	6480644
1,2-Dichlorobenzene	ug/g				ND	0.050	6480644
1,3-Dichlorobenzene	ug/g				ND	0.050	6480644
1,4-Dichlorobenzene	ug/g				ND	0.050	6480644
Dichlorodifluoromethane (FREON 12)	ug/g				ND	0.050	6480644
1,1-Dichloroethane	ug/g				ND	0.050	6480644
1,2-Dichloroethane	ug/g				ND	0.050	6480644
1,1-Dichloroethylene	ug/g				ND	0.050	6480644
cis-1,2-Dichloroethylene	ug/g				ND	0.050	6480644
trans-1,2-Dichloroethylene	ug/g				ND	0.050	6480644
1,2-Dichloropropane	ug/g				ND	0.050	6480644
cis-1,3-Dichloropropene	ug/g				ND	0.030	6480644
trans-1,3-Dichloropropene	ug/g				ND	0.040	6480644
Ethylbenzene	ug/g				ND	0.020	6480644
Ethylene Dibromide	ug/g				ND	0.050	6480644
Hexane	ug/g				ND	0.050	6480644
Methylene Chloride(Dichloromethane)	ug/g				ND	0.050	6480644
Methyl Ethyl Ketone (2-Butanone)	ug/g				ND	0.50	6480644
Methyl Isobutyl Ketone	ug/g				ND	0.50	6480644
Methyl t-butyl ether (MTBE)	ug/g				ND	0.050	6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK905			LLK906		
Sampling Date		2019/11/29 08:25			2019/11/29 08:35		
COC Number		748247-01-01			748247-01-01		
	UNITS	11205379-20-MW3S-SS2 Lab-Dup	RDL	QC Batch	11205379-20-MW3S-SS3	RDL	QC Batch
Styrene	ug/g				ND	0.050	6480644
1,1,1,2-Tetrachloroethane	ug/g				ND	0.050	6480644
1,1,2,2-Tetrachloroethane	ug/g				ND	0.050	6480644
Tetrachloroethylene	ug/g				ND	0.050	6480644
Toluene	ug/g				ND	0.020	6480644
1,1,1-Trichloroethane	ug/g				ND	0.050	6480644
1,1,2-Trichloroethane	ug/g				ND	0.050	6480644
Trichloroethylene	ug/g				ND	0.050	6480644
Trichlorofluoromethane (FREON 11)	ug/g				ND	0.050	6480644
Vinyl Chloride	ug/g				ND	0.020	6480644
p+m-Xylene	ug/g				ND	0.020	6480644
o-Xylene	ug/g				ND	0.020	6480644
Total Xylenes	ug/g				ND	0.020	6480644
F1 (C6-C10)	ug/g				ND	10	6480644
F1 (C6-C10) - BTEX	ug/g				ND	10	6480644
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	6486564	ND	10	6486564
F3 (C16-C34 Hydrocarbons)	ug/g	ND	50	6486564	ND	50	6486564
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	6486564	ND	50	6486564
Reached Baseline at C50	ug/g	Yes		6486564	Yes		6486564
Surrogate Recovery (%)							
o-Terphenyl	%	90		6486564	90		6486564
4-Bromofluorobenzene	%				97		6480644
D10-o-Xylene	%				108		6480644
D4-1,2-Dichloroethane	%				99		6480644
D8-Toluene	%				100		6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK907	LLK908		
Sampling Date		2019/11/29 10:50	2019/11/29 11:00		
COC Number		748247-01-01	748247-01-01		
	UNITS	11205379-20-BH7-SS1	11205379-20-BH7-SS2	RDL	QC Batch
Inorganics					
Moisture	%	3.8	11	1.0	6485279
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.050	6475823
Volatile Organics					
Acetone (2-Propanone)	ug/g	ND	ND	0.50	6480644
Benzene	ug/g	ND	ND	0.020	6480644
Bromodichloromethane	ug/g	ND	ND	0.050	6480644
Bromoform	ug/g	ND	ND	0.050	6480644
Bromomethane	ug/g	ND	ND	0.050	6480644
Carbon Tetrachloride	ug/g	ND	ND	0.050	6480644
Chlorobenzene	ug/g	ND	ND	0.050	6480644
Chloroform	ug/g	ND	ND	0.050	6480644
Dibromochloromethane	ug/g	ND	ND	0.050	6480644
1,2-Dichlorobenzene	ug/g	ND	ND	0.050	6480644
1,3-Dichlorobenzene	ug/g	ND	ND	0.050	6480644
1,4-Dichlorobenzene	ug/g	ND	ND	0.050	6480644
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	0.050	6480644
1,1-Dichloroethane	ug/g	ND	ND	0.050	6480644
1,2-Dichloroethane	ug/g	ND	ND	0.050	6480644
1,1-Dichloroethylene	ug/g	ND	ND	0.050	6480644
cis-1,2-Dichloroethylene	ug/g	ND	ND	0.050	6480644
trans-1,2-Dichloroethylene	ug/g	ND	ND	0.050	6480644
1,2-Dichloropropane	ug/g	ND	ND	0.050	6480644
cis-1,3-Dichloropropene	ug/g	ND	ND	0.030	6480644
trans-1,3-Dichloropropene	ug/g	ND	ND	0.040	6480644
Ethylbenzene	ug/g	ND	ND	0.020	6480644
Ethylene Dibromide	ug/g	ND	ND	0.050	6480644
Hexane	ug/g	0.21	ND	0.050	6480644
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	0.050	6480644
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	0.50	6480644
Methyl Isobutyl Ketone	ug/g	ND	ND	0.50	6480644
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	0.050	6480644
Styrene	ug/g	ND	ND	0.050	6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LLK907	LLK908		
Sampling Date		2019/11/29 10:50	2019/11/29 11:00		
COC Number		748247-01-01	748247-01-01		
	UNITS	11205379-20-BH7-SS1	11205379-20-BH7-SS2	RDL	QC Batch
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	0.050	6480644
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	0.050	6480644
Tetrachloroethylene	ug/g	ND	ND	0.050	6480644
Toluene	ug/g	0.023	ND	0.020	6480644
1,1,1-Trichloroethane	ug/g	ND	ND	0.050	6480644
1,1,2-Trichloroethane	ug/g	ND	ND	0.050	6480644
Trichloroethylene	ug/g	ND	ND	0.050	6480644
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	0.050	6480644
Vinyl Chloride	ug/g	ND	ND	0.020	6480644
p+m-Xylene	ug/g	0.051	ND	0.020	6480644
o-Xylene	ug/g	ND	ND	0.020	6480644
Total Xylenes	ug/g	0.051	ND	0.020	6480644
F1 (C6-C10)	ug/g	ND	ND	10	6480644
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	6480644
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	10	6486564
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	50	6486564
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	50	6486564
Reached Baseline at C50	ug/g	Yes	Yes		6486564
Surrogate Recovery (%)					
o-Terphenyl	%	91	87		6486564
4-Bromofluorobenzene	%	96	96		6480644
D10-o-Xylene	%	107	108		6480644
D4-1,2-Dichloroethane	%	99	98		6480644
D8-Toluene	%	100	101		6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9X8304
Report Date: 2019/12/12

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

RESULTS OF ANALYSES OF SOIL

BV Labs ID		LLK895		
Sampling Date		2019/11/26 09:50		
COC Number		748247-01-01		
	UNITS	11205379-20-MW1-SS1	RDL	QC Batch
Inorganics				
Moisture	%	19	1.0	6487349

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

VOLATILE ORGANICS BY GC/MS (SOIL)

BV Labs ID		LLK909		
Sampling Date		2019/11/29		
COC Number		748247-01-01		
	UNITS	11205379-20-TRIP BLANK	RDL	QC Batch
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.050	6475823
Volatile Organics				
Acetone (2-Propanone)	ug/g	ND	0.50	6480644
Benzene	ug/g	ND	0.020	6480644
Bromodichloromethane	ug/g	ND	0.050	6480644
Bromoform	ug/g	ND	0.050	6480644
Bromomethane	ug/g	ND	0.050	6480644
Carbon Tetrachloride	ug/g	ND	0.050	6480644
Chlorobenzene	ug/g	ND	0.050	6480644
Chloroform	ug/g	ND	0.050	6480644
Dibromochloromethane	ug/g	ND	0.050	6480644
1,2-Dichlorobenzene	ug/g	ND	0.050	6480644
1,3-Dichlorobenzene	ug/g	ND	0.050	6480644
1,4-Dichlorobenzene	ug/g	ND	0.050	6480644
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	6480644
1,1-Dichloroethane	ug/g	ND	0.050	6480644
1,2-Dichloroethane	ug/g	ND	0.050	6480644
1,1-Dichloroethylene	ug/g	ND	0.050	6480644
cis-1,2-Dichloroethylene	ug/g	ND	0.050	6480644
trans-1,2-Dichloroethylene	ug/g	ND	0.050	6480644
1,2-Dichloropropane	ug/g	ND	0.050	6480644
cis-1,3-Dichloropropene	ug/g	ND	0.030	6480644
trans-1,3-Dichloropropene	ug/g	ND	0.040	6480644
Ethylbenzene	ug/g	ND	0.020	6480644
Ethylene Dibromide	ug/g	ND	0.050	6480644
Hexane	ug/g	ND	0.050	6480644
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	6480644
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	6480644
Methyl Isobutyl Ketone	ug/g	ND	0.50	6480644
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	6480644
Styrene	ug/g	ND	0.050	6480644
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	6480644
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	6480644
Tetrachloroethylene	ug/g	ND	0.050	6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

VOLATILE ORGANICS BY GC/MS (SOIL)

BV Labs ID		LLK909		
Sampling Date		2019/11/29		
COC Number		748247-01-01		
	UNITS	11205379-20-TRIP BLANK	RDL	QC Batch
Toluene	ug/g	ND	0.020	6480644
1,1,1-Trichloroethane	ug/g	ND	0.050	6480644
1,1,2-Trichloroethane	ug/g	ND	0.050	6480644
Trichloroethylene	ug/g	ND	0.050	6480644
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	6480644
Vinyl Chloride	ug/g	ND	0.020	6480644
p+m-Xylene	ug/g	ND	0.020	6480644
o-Xylene	ug/g	ND	0.020	6480644
Total Xylenes	ug/g	ND	0.020	6480644
F1 (C6-C10)	ug/g	ND	10	6480644
F1 (C6-C10) - BTEX	ug/g	ND	10	6480644
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	94		6480644
D10-o-Xylene	%	104		6480644
D4-1,2-Dichloroethane	%	99		6480644
D8-Toluene	%	100		6480644

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		LLK900		
Sampling Date		2019/11/26 13:00		
COC Number		748247-01-01		
	UNITS	11205379-20-MW2S-SS1	RDL	QC Batch
F2-F4 Hydrocarbons				
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	2500	100	6490488

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

TEST SUMMARY

BV Labs ID: LLK895
Sample ID: 11205379-20-MW1-SS1
Matrix: Soil

Collected: 2019/11/26
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6475822	N/A	2019/12/11	Automated Statchk
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/10	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6487349	N/A	2019/12/09	Gurpreet Kaur
OC Pesticides (Selected) & PCB	GC/ECD	6486675	2019/12/09	2019/12/10	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	6475824	N/A	2019/12/09	Automated Statchk
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6487970	2019/12/10	2019/12/10	Mitesh Raj
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

BV Labs ID: LLK897
Sample ID: 11205379-20-MW1-SS3
Matrix: Soil

Collected: 2019/11/26
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

BV Labs ID: LLK898
Sample ID: 11205379-20-MW1-SS4
Matrix: Soil

Collected: 2019/11/26
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: LLK898
Sample ID: 11205379-20-MW1-SS4
Matrix: Soil

Collected: 2019/11/26
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

BV Labs ID: LLK899
Sample ID: 11205379-20-MW1-SS5
Matrix: Soil

Collected: 2019/11/26
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

BV Labs ID: LLK900
Sample ID: 11205379-20-MW2S-SS1
Matrix: Soil

Collected: 2019/11/26
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6475822	N/A	2019/12/11	Automated Statchk
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
F4G (CCME Hydrocarbons Gravimetric)	BAL	6490488	2019/12/11	2019/12/11	Debra Deslandes
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
OC Pesticides (Selected) & PCB	GC/ECD	6486675	2019/12/09	2019/12/10	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	6475824	N/A	2019/12/09	Automated Statchk
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6487970	2019/12/10	2019/12/10	Mitesh Raj
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: LLK901
Sample ID: 11205379-20-MW2S-SS2
Matrix: Soil

Collected: 2019/11/26
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

BV Labs ID: LLK901 Dup
Sample ID: 11205379-20-MW2S-SS2
Matrix: Soil

Collected: 2019/11/26
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu

BV Labs ID: LLK903
Sample ID: 11205379-20-MW2S-SS4
Matrix: Soil

Collected: 2019/11/26
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

BV Labs ID: LLK904
Sample ID: 11205379-20-MW3S-SS1
Matrix: Soil

Collected: 2019/11/29
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6475822	N/A	2019/12/11	Automated Statchk
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: LLK904
Sample ID: 11205379-20-MW3S-SS1
Matrix: Soil

Collected: 2019/11/29
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
OC Pesticides (Selected) & PCB	GC/ECD	6486675	2019/12/09	2019/12/10	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	6475824	N/A	2019/12/09	Automated Statchk
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6487970	2019/12/10	2019/12/10	Mitesh Raj
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

BV Labs ID: LLK904 Dup
Sample ID: 11205379-20-MW3S-SS1
Matrix: Soil

Collected: 2019/11/29
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding

BV Labs ID: LLK905
Sample ID: 11205379-20-MW3S-SS2
Matrix: Soil

Collected: 2019/11/29
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: LLK905 Dup
Sample ID: 11205379-20-MW3S-SS2
Matrix: Soil

Collected: 2019/11/29
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati

BV Labs ID: LLK906
Sample ID: 11205379-20-MW3S-SS3
Matrix: Soil

Collected: 2019/11/29
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

BV Labs ID: LLK907
Sample ID: 11205379-20-BH7-SS1
Matrix: Soil

Collected: 2019/11/29
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6475822	N/A	2019/12/11	Automated Statchk
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
OC Pesticides (Selected) & PCB	GC/ECD	6486675	2019/12/09	2019/12/10	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	6475824	N/A	2019/12/09	Automated Statchk
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6487970	2019/12/10	2019/12/10	Mitesh Raj
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9X8304
Report Date: 2019/12/12

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LLK908
Sample ID: 11205379-20-BH7-SS2
Matrix: Soil

Collected: 2019/11/29
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6486282	2019/12/09	2019/12/09	Archana Patel
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Free (WAD) Cyanide	TECH	6484103	2019/12/06	2019/12/09	Louise Harding
Conductivity	AT	6487842	2019/12/10	2019/12/10	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6482783	2019/12/06	2019/12/10	Violeta Porcila
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6486564	2019/12/09	2019/12/10	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6486303	2019/12/09	2019/12/10	Daniel Teclu
Moisture	BAL	6485279	N/A	2019/12/07	Gurpreet Kaur
pH CaCl2 EXTRACT	AT	6486135	2019/12/09	2019/12/09	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6475825	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

BV Labs ID: LLK909
Sample ID: 11205379-20-TRIP BLANK
Matrix: Soil

Collected: 2019/11/29
Shipped:
Received: 2019/11/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	6475823	N/A	2019/12/09	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6480644	N/A	2019/12/07	Yang (Philip) Yu

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C

Sample LLK900 [11205379-20-MW2S-SS1] : OC Pesticide Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample LLK904 [11205379-20-MW3S-SS1] : PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6480644	4-Bromofluorobenzene	2019/12/06	101	60 - 140	101	60 - 140	95	%		
6480644	D10-o-Xylene	2019/12/06	106	60 - 130	103	60 - 130	105	%		
6480644	D4-1,2-Dichloroethane	2019/12/06	99	60 - 140	100	60 - 140	99	%		
6480644	D8-Toluene	2019/12/06	100	60 - 140	100	60 - 140	101	%		
6486564	o-Terphenyl	2019/12/10	92 (2)	60 - 130	89	60 - 130	85	%		
6486675	2,4,5,6-Tetrachloro-m-xylene	2019/12/10	72	50 - 130	112	50 - 130	97	%		
6486675	Decachlorobiphenyl	2019/12/10	79	50 - 130	90	50 - 130	97	%		
6487970	D10-Anthracene	2019/12/10	105	50 - 130	98	50 - 130	103	%		
6487970	D14-Terphenyl (FS)	2019/12/10	100	50 - 130	77	50 - 130	96	%		
6487970	D8-Acenaphthylene	2019/12/10	97	50 - 130	88	50 - 130	95	%		
6480644	1,1,1,2-Tetrachloroethane	2019/12/07	99	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,1,1-Trichloroethane	2019/12/07	94	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,1,2,2-Tetrachloroethane	2019/12/07	100	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,1,2-Trichloroethane	2019/12/07	99	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,1-Dichloroethane	2019/12/07	94	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,1-Dichloroethylene	2019/12/07	103	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,2-Dichlorobenzene	2019/12/07	93	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,2-Dichloroethane	2019/12/07	99	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,2-Dichloropropane	2019/12/07	90	60 - 140	88	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,3-Dichlorobenzene	2019/12/07	95	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	1,4-Dichlorobenzene	2019/12/07	102	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Acetone (2-Propanone)	2019/12/07	99	60 - 140	97	60 - 140	ND, RDL=0.50	ug/g	NC (1)	50
6480644	Benzene	2019/12/07	96	60 - 140	92	60 - 130	ND, RDL=0.020	ug/g	NC (1)	50
6480644	Bromodichloromethane	2019/12/07	92	60 - 140	89	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Bromoform	2019/12/07	94	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Bromomethane	2019/12/07	109	60 - 140	106	60 - 140	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Carbon Tetrachloride	2019/12/07	92	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Chlorobenzene	2019/12/07	92	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Chloroform	2019/12/07	90	60 - 140	88	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	cis-1,2-Dichloroethylene	2019/12/07	91	60 - 140	88	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6480644	cis-1,3-Dichloropropene	2019/12/07	79	60 - 140	75	60 - 130	ND, RDL=0.030	ug/g	NC (1)	50
6480644	Dibromochloromethane	2019/12/07	97	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Dichlorodifluoromethane (FREON 12)	2019/12/07	80	60 - 140	79	60 - 140	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Ethylbenzene	2019/12/07	90	60 - 140	88	60 - 130	ND, RDL=0.020	ug/g	NC (1)	50
6480644	Ethylene Dibromide	2019/12/07	98	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	F1 (C6-C10) - BTEX	2019/12/07					ND, RDL=10	ug/g	NC (1)	30
6480644	F1 (C6-C10)	2019/12/07	99	60 - 140	94	80 - 120	ND, RDL=10	ug/g	NC (1)	30
6480644	Hexane	2019/12/07	100	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Methyl Ethyl Ketone (2-Butanone)	2019/12/07	98	60 - 140	96	60 - 140	ND, RDL=0.50	ug/g	NC (1)	50
6480644	Methyl Isobutyl Ketone	2019/12/07	93	60 - 140	91	60 - 130	ND, RDL=0.50	ug/g	NC (1)	50
6480644	Methyl t-butyl ether (MTBE)	2019/12/07	86	60 - 140	84	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Methylene Chloride(Dichloromethane)	2019/12/07	93	60 - 140	91	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	o-Xylene	2019/12/07	95	60 - 140	92	60 - 130	ND, RDL=0.020	ug/g	NC (1)	50
6480644	p+m-Xylene	2019/12/07	98	60 - 140	94	60 - 130	ND, RDL=0.020	ug/g	NC (1)	50
6480644	Styrene	2019/12/07	94	60 - 140	91	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Tetrachloroethylene	2019/12/07	91	60 - 140	88	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Toluene	2019/12/07	92	60 - 140	90	60 - 130	ND, RDL=0.020	ug/g	NC (1)	50
6480644	Total Xylenes	2019/12/07					ND, RDL=0.020	ug/g	NC (1)	50
6480644	trans-1,2-Dichloroethylene	2019/12/07	97	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	trans-1,3-Dichloropropene	2019/12/07	82	60 - 140	80	60 - 130	ND, RDL=0.040	ug/g	NC (1)	50
6480644	Trichloroethylene	2019/12/07	98	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Trichlorofluoromethane (FREON 11)	2019/12/07	105	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC (1)	50
6480644	Vinyl Chloride	2019/12/07	91	60 - 140	88	60 - 130	ND, RDL=0.020	ug/g	NC (1)	50
6482783	Chromium (VI)	2019/12/10	83 (2)	70 - 130	90	80 - 120	ND, RDL=0.2	ug/g	NC (3)	35
6484103	WAD Cyanide (Free)	2019/12/09	94 (4)	75 - 125	96	80 - 120	ND, RDL=0.01	ug/g	22 (5)	35
6485279	Moisture	2019/12/07							2.8 (1)	20
6486135	Available (CaCl2) pH	2019/12/09			100	97 - 103			0.96 (1)	N/A
6486282	Hot Water Ext. Boron (B)	2019/12/09	88 (4)	75 - 125	90	75 - 125	ND, RDL=0.050	ug/g	1.1 (5)	40
6486303	Acid Extractable Antimony (Sb)	2019/12/10	104 (6)	75 - 125	103	80 - 120	ND, RDL=0.20	ug/g	NC (7)	30
6486303	Acid Extractable Arsenic (As)	2019/12/10	120 (6)	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	0.37 (7)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6486303	Acid Extractable Barium (Ba)	2019/12/10	NC (6)	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	4.6 (7)	30
6486303	Acid Extractable Beryllium (Be)	2019/12/10	118 (6)	75 - 125	101	80 - 120	ND, RDL=0.20	ug/g	5.3 (7)	30
6486303	Acid Extractable Boron (B)	2019/12/10	101 (6)	75 - 125	99	80 - 120	ND, RDL=5.0	ug/g	1.1 (7)	30
6486303	Acid Extractable Cadmium (Cd)	2019/12/10	116 (6)	75 - 125	102	80 - 120	ND, RDL=0.10	ug/g	8.3 (7)	30
6486303	Acid Extractable Chromium (Cr)	2019/12/10	NC (6)	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	3.7 (7)	30
6486303	Acid Extractable Cobalt (Co)	2019/12/10	114 (6)	75 - 125	99	80 - 120	ND, RDL=0.10	ug/g	5.8 (7)	30
6486303	Acid Extractable Copper (Cu)	2019/12/10	NC (6)	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	4.6 (7)	30
6486303	Acid Extractable Lead (Pb)	2019/12/10	NC (6)	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	46 (8,7)	30
6486303	Acid Extractable Mercury (Hg)	2019/12/10	101 (6)	75 - 125	86	80 - 120	ND, RDL=0.050	ug/g	21 (7)	30
6486303	Acid Extractable Molybdenum (Mo)	2019/12/10	115 (6)	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	10 (7)	30
6486303	Acid Extractable Nickel (Ni)	2019/12/10	NC (6)	75 - 125	94	80 - 120	ND, RDL=0.50	ug/g	2.8 (7)	30
6486303	Acid Extractable Selenium (Se)	2019/12/10	114 (6)	75 - 125	97	80 - 120	ND, RDL=0.50	ug/g	NC (7)	30
6486303	Acid Extractable Silver (Ag)	2019/12/10	115 (6)	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g	NC (7)	30
6486303	Acid Extractable Thallium (Tl)	2019/12/10	116 (6)	75 - 125	101	80 - 120	ND, RDL=0.050	ug/g	0.022 (7)	30
6486303	Acid Extractable Uranium (U)	2019/12/10	98 (6)	75 - 125	85	80 - 120	ND, RDL=0.050	ug/g	6.3 (7)	30
6486303	Acid Extractable Vanadium (V)	2019/12/10	NC (6)	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	2.3 (7)	30
6486303	Acid Extractable Zinc (Zn)	2019/12/10	NC (6)	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	7.9 (7)	30
6486564	F2 (C10-C16 Hydrocarbons)	2019/12/10	93 (2)	50 - 130	90	80 - 120	ND, RDL=10	ug/g	NC (3)	30
6486564	F3 (C16-C34 Hydrocarbons)	2019/12/10	96 (2)	50 - 130	93	80 - 120	ND, RDL=50	ug/g	NC (3)	30
6486564	F4 (C34-C50 Hydrocarbons)	2019/12/10	97 (2)	50 - 130	94	80 - 120	ND, RDL=50	ug/g	NC (3)	30
6486675	a-Chlordane	2019/12/10	81	50 - 130	109	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Aldrin	2019/12/10	69	50 - 130	88	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Aroclor 1242	2019/12/10					ND, RDL=0.015	ug/g	NC (1)	40
6486675	Aroclor 1248	2019/12/10					ND, RDL=0.015	ug/g	NC (1)	40
6486675	Aroclor 1254	2019/12/10					ND, RDL=0.015	ug/g	NC (1)	40
6486675	Aroclor 1260	2019/12/10					ND, RDL=0.015	ug/g	NC (1)	40
6486675	Dieldrin	2019/12/10	91	50 - 130	125	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Endosulfan I (alpha)	2019/12/10	83	50 - 130	112	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Endosulfan II (beta)	2019/12/10	84	50 - 130	73	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Endrin	2019/12/10	83	50 - 130	108	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6486675	g-Chlordane	2019/12/10	62	50 - 130	107	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Heptachlor epoxide	2019/12/10	76	50 - 130	101	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Heptachlor	2019/12/10	64	50 - 130	80	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Hexachlorobenzene	2019/12/10	70	50 - 130	101	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Hexachlorobutadiene	2019/12/10	68	50 - 130	101	50 - 130	ND, RDL=0.0020	ug/g		
6486675	Hexachloroethane	2019/12/10	45 (9)	50 - 130	110	50 - 130	ND, RDL=0.0020	ug/g		
6486675	Lindane	2019/12/10	56	50 - 130	97	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	Methoxychlor	2019/12/10	115	50 - 130	124	50 - 130	ND, RDL=0.0050	ug/g	NC (1)	40
6486675	o,p-DDD	2019/12/10	86	50 - 130	115	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	o,p-DDE	2019/12/10	72	50 - 130	103	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	o,p-DDT	2019/12/10	70	50 - 130	110	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	p,p-DDD	2019/12/10	95	50 - 130	113	50 - 130	ND, RDL=0.0020	ug/g	NC (1)	40
6486675	p,p-DDE	2019/12/10	NC	50 - 130	111	50 - 130	ND, RDL=0.0020	ug/g	13 (1)	40
6486675	p,p-DDT	2019/12/10	NC	50 - 130	127	50 - 130	ND, RDL=0.0020	ug/g	18 (1)	40
6487349	Moisture	2019/12/09							3.6 (1)	20
6487842	Conductivity	2019/12/10			102	90 - 110	ND, RDL=0.002	mS/cm	2.1 (7)	10
6487970	1-Methylnaphthalene	2019/12/10	115	50 - 130	115	50 - 130	ND, RDL=0.0050	ug/g	NC (1)	40
6487970	2-Methylnaphthalene	2019/12/10	107	50 - 130	108	50 - 130	ND, RDL=0.0050	ug/g	NC (1)	40
6487970	Acenaphthene	2019/12/10	115	50 - 130	110	50 - 130	ND, RDL=0.0050	ug/g	NC (1)	40
6487970	Acenaphthylene	2019/12/10	105	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	37 (1)	40
6487970	Anthracene	2019/12/10	115	50 - 130	105	50 - 130	ND, RDL=0.0050	ug/g	36 (1)	40
6487970	Benzo(a)anthracene	2019/12/10	132 (8)	50 - 130	115	50 - 130	ND, RDL=0.0050	ug/g	31 (1)	40
6487970	Benzo(a)pyrene	2019/12/10	125	50 - 130	113	50 - 130	ND, RDL=0.0050	ug/g	24 (1)	40
6487970	Benzo(b/j)fluoranthene	2019/12/10	109	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	23 (1)	40
6487970	Benzo(g,h,i)perylene	2019/12/10	130	50 - 130	106	50 - 130	ND, RDL=0.0050	ug/g	23 (1)	40
6487970	Benzo(k)fluoranthene	2019/12/10	104	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	26 (1)	40
6487970	Chrysene	2019/12/10	127	50 - 130	113	50 - 130	ND, RDL=0.0050	ug/g	25 (1)	40
6487970	Dibenzo(a,h)anthracene	2019/12/10	133 (8)	50 - 130	112	50 - 130	ND, RDL=0.0050	ug/g	NC (1)	40
6487970	Fluoranthene	2019/12/10	131 (10)	50 - 130	108	50 - 130	ND, RDL=0.0050	ug/g	29 (1)	40
6487970	Fluorene	2019/12/10	120	50 - 130	117	50 - 130	ND, RDL=0.0050	ug/g	NC (1)	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6487970	Indeno(1,2,3-cd)pyrene	2019/12/10	140 (8)	50 - 130	116	50 - 130	ND, RDL=0.0050	ug/g	41 (11,1)	40
6487970	Naphthalene	2019/12/10	96	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	NC (1)	40
6487970	Phenanthrene	2019/12/10	120	50 - 130	110	50 - 130	ND, RDL=0.0050	ug/g	36 (1)	40
6487970	Pyrene	2019/12/10	122	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	22 (1)	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6490488	F4G-sg (Grav. Heavy Hydrocarbons)	2019/12/11	NC (12)	65 - 135	102	65 - 135	ND, RDL=100	ug/g	10 (1)	50

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [LLK905-01]

(3) Duplicate Parent ID [LLK905-01]

(4) Matrix Spike Parent ID [LLK904-01]

(5) Duplicate Parent ID [LLK904-01]

(6) Matrix Spike Parent ID [LLK901-01]

(7) Duplicate Parent ID [LLK901-01]

(8) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(9) Due to matrix interfences, the recovery for the flagged target analyte was below the control limit as stipulated by Ontario Regulation 153, however, this recovery is still within Bureau Veritas Laboratories' performance based limits. Results reported for this specific analyte with spike recoveries within this range are still valid but may have an associated low bias. The interference was confirmed by rework.

(10) The recovery was above the upper control limit. This may represent a high bias in some results for flagged analytes. For results that were not detected (ND), this potential bias has no impact.

(11) Duplicate results exceeded RPD acceptance criteria due to the sample heterogeneity. The variability in the results for this analyte may be more pronounced.

(12) Matrix Spike Parent ID [LLK900-01]

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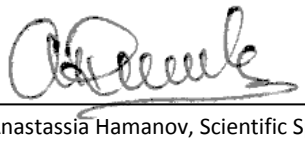
BV Labs Job #: B9X8304
Report Date: 2019/12/12

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: RV

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

29-Nov-19 16:20
Ema Gitej
B9X8304

Page 1 of 2

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Lab Only:
Company Name:	#3000 GHD Limited	Company Name:	GHD Limited	Quotation #:	B90001	Bottle Order #:
Attention:	Laura Ermeta (AP-735)	Attention:	Aditya Khandekar	P.O. #:	73518145	748247
Address:	455 Phillip St Waterloo ON N2L 3X2	Address:		Project:	11205379-20	COC #:
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	647-558-3000 Fax:	Project Name:		Project Manager:
Email:	APinvoices-735@ghd.com	Email:	Aditya.khandekar@ghd.com	Site #:		Ema Gitej
				Sampled By:		C#748247-01-01

FJE ENV-680

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- [ ] Table 1 [ ] Res/Park [ ] Medium/Fine
- [ ] Table 2 [ ] Ind/Comm [ ] Coarse
- [ ] Table 3 [ ] Agri/Other [ ] For RSC
- [ ] Table ___

Other Regulations
- [ ] CCME [ ] Sanitary Sewer Bylaw
- [ ] Reg 558. [ ] Storm Sewer Bylaw
- [ ] MISA Municipality ___
- [ ] PWQO
- [ ] Other ___

Special Instructions
All samples on Hold

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: [X]
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ [ ]
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg	O.Reg 153 OC Pesticides	O.Reg 153 PCBs					# of Bottles	Comments
1		11205379-MW1-SS1	Nov 26	9:50	S		X	X	X	X	X					4	ON HOLD
2		11205379-MW1-SS2	"	10:00	S		X	X	X	X	X					4	
3		11205379-MW1-SS3	"	10:05	S		X	X	X	X	X					4	
4		11205379-MW1-SS4	"	10:20	S		X	X	X	X	X					4	
5		11205379-MW1-SS5	"	10:35	S		X	X	X	X	X					4	
6		11205379-MW2-SS1	"	13:00	S		X	X	X	X	X					4	
7		11205379-MW2-SS2	"	13:10	S		X	X	X	X	X					4	
8		11205379-MW2-SS3	"	13:15	S		X	X	X	X	X					4	
9		11205379-MW2-SS4	"	13:35	S		X	X	X	X	X					4	
10		11205379-MW3-SS1	Nov 29	8:05	S		X	X	X	X	X					4	ON Ice

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Ryan Vanderlinden	19/11/29	16:20		2019/11/29	16:20	
				2019/12/02	08:32	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal Present	Yes	No
	1.1.1.4	Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

4/5/3

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 GHD Limited	Company Name:	Same as page 1	Quotation #:	B90001	BV Labs Job #:	Bottle Order #: 748247
Attention:	Laura Ermeta (AP-735)	Attention:		P.O. #:	73518145		
Address:	455 Phillip St Waterloo ON N2L 3X2	Address:		Project:	11205379-20	COC #: C#748247-04-01	Project Manager: Ema Gitej
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Project Name:			
Email:	APinvoices-735@ghd.com	Email:		Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558. ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	All Samples on hold

Include Criteria on Certificate of Analysis (Y/N)? ___

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg	O.Reg 153 OC Pesticides	O. Reg 153 PCBs	# of Bottles	Comments
1		11205374-MW35-SS2	Nov 29	8:25	S		X	X	X	X	X	4	ON HOLD
2		11205379-MW35-SS3	"	8:35	S		X	X	X	X	X	4	
3		11205379-BH7-SS1	"	10:50	S		X	X	X	X	X	4	
4		11205379-BH7-SS2	"	11:00	S		X	X	X	X	X	4	
5		Trip blank					X					2	
6													
7													
8													
9													
10													ON ICE

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☐
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Ryan Medd/Ryan Medd	19/11/29	16:30	Kevin Jang/Kevin Jang	2019/11/29	16:30	

Laboratory Use Only				
Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	1 / 1 / 4	Present	✓	
		Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

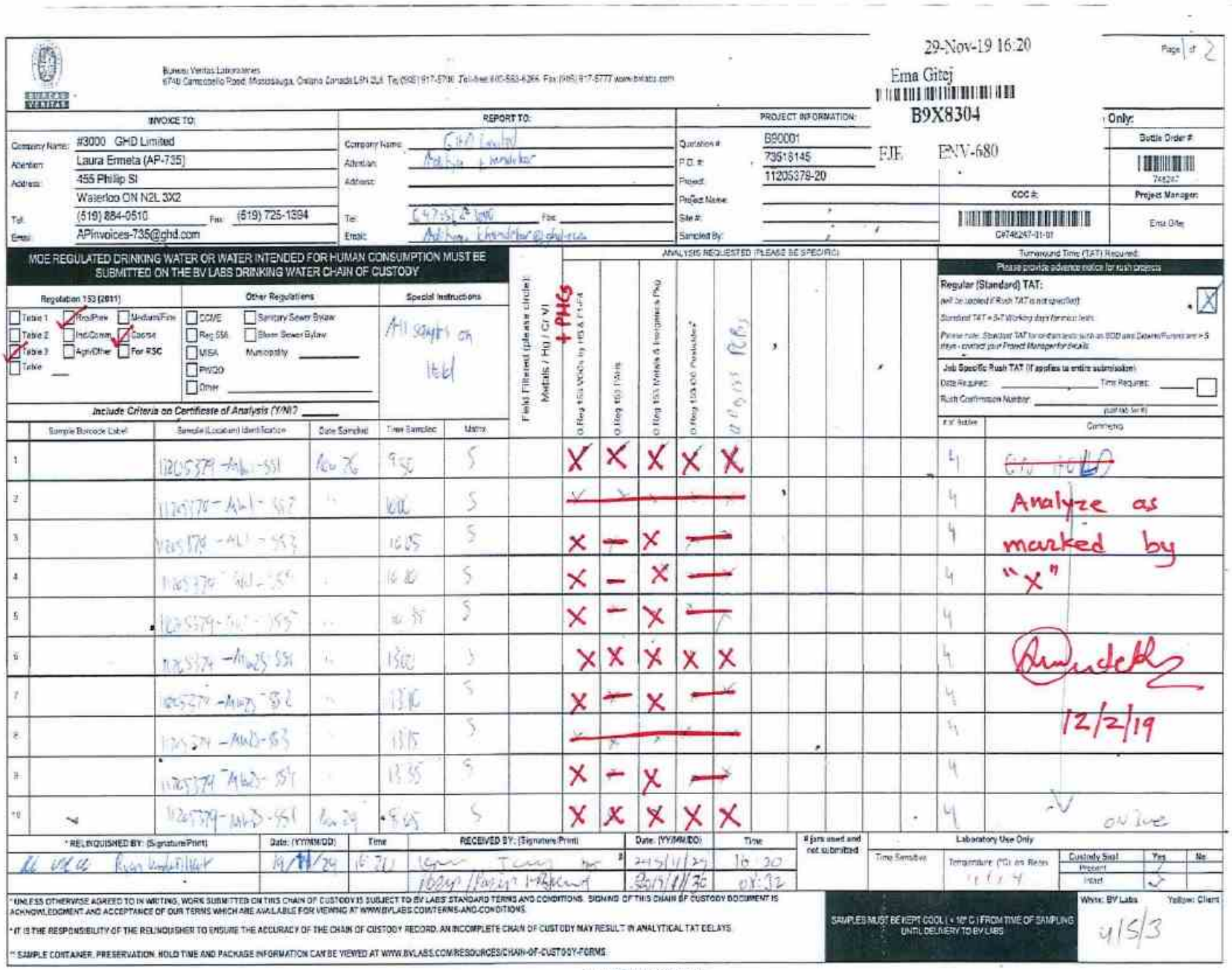
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.



29-Nov-19 16:20
Ema Gitej
B9X8304
Page 1 of 2

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L4N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvlabs.com

INVOICE TO: Company Name: #3000 GHD Limited; Attention: Laura Emeta (AP-735); Address: 455 Phillip St, Waterloo ON N2L 3X2; Tel: (519) 884-0510; Fax: (519) 725-1394; Email: APInvoices-735@ghd.com

REPORT TO: Company Name: GHD Limited; Attention: Matija + Jennifer; Address:; Tel: [illegible]; Fax:; Email: Matija.[illegible]@ghd.com

PROJECT INFORMATION: Quotation #: B90001; P.O. #: 79518145; Project: 11205379-20; Project Name:; Site #:; Sampled By:; EJE; ENV-680

COC #: C#748247-01-01

Only: Bottle Order #: 748247; Project Manager: Ema Gitej

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): Table 1 ☐ Res/Park ☐ Medium/Fine; Table 2 ☐ Ind/Comm ☐ Coarse; Table 3 ☐ Agri/Other ☐ For RSC; Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw; ☐ Reg 558 ☐ Storm Sewer Bylaw; ☐ MISA Municipality ___; ☐ PWQO; ☐ Other ___

Special Instructions: All samples on Hold

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects
Regular (Standard) TAT: [X]
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.
Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ (call lab for #)

ANALYSIS REQUESTED (PLEASE BE SPECIFIC): Field Filtered (please circle): Metals / Hg / Cr VI + PHCs; O.Reg 153 VOCs by HS & P+T; O.Reg 153 PAHs; O.Reg 153 Metals & Inorganics (Hg); O.Reg 153 CCME Parameters*; [illegible]

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	# of Bottles	Comments
1		11205379-MW1-SS1	Nov 26	9:50	S	4	
2		11205379-MW1-SS2	"	10:00	S	4	Analyze as
3		11205379-MW2-SS2		10:05	S	4	marked by
4		11205379-MW2-SS3	"	10:10	S	4	"X"
5		11205379-MW3-SS3	"	10:15	S	4	
6		11205379-MW3-SS4	"	13:00	S	4	
7		11205379-MW4-SS2	"	13:10	S	4	12/2/19
8		11205379-MW4-SS3	"	13:15	S	4	
9		11205379-MW5-SS1	"	13:55	S	4	
10		11205379-MW5-SS1	Nov 29	9:45	S	4	ON ICE

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time
[illegible]	19/11/29	16:30	[illegible]	2019/11/29	16:30
			[illegible]	2019/11/30	07:32

jars used and not submitted:

Laboratory Use Only: Time Sensitive; Temperature (°C) on Receipt: 1.1, 1.4; Custody Seal Present: Yes; Intact: Yes

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

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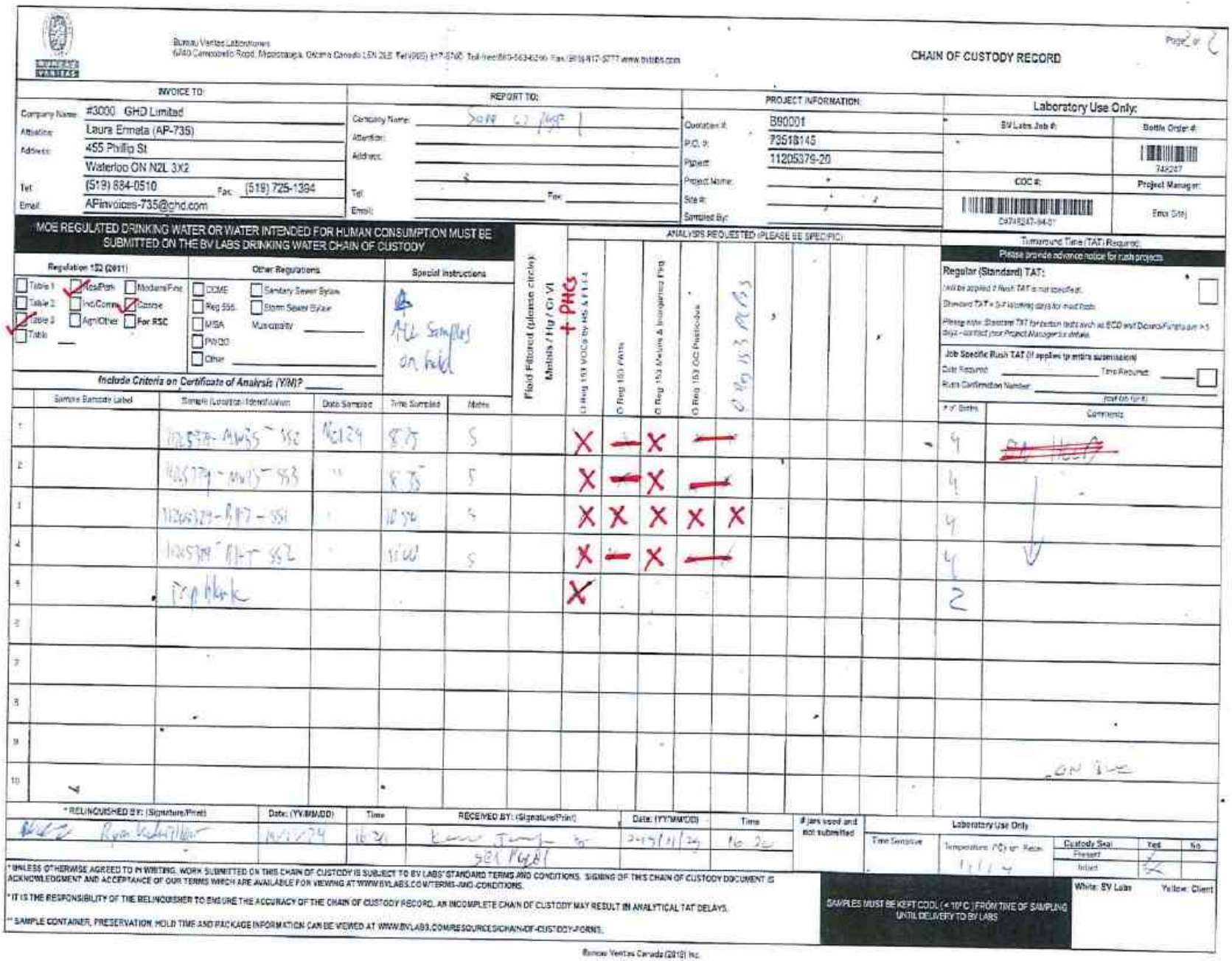
SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

4/5/3

Bureau Veritas Canada (2019) Inc.



Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Page 2 of 2

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 GHD Limited	Company Name:	SAME AS INVOICE	Quotation #:	B90001	BV Labs Job #:	Bottle Order #:
Attention:	Laura Ermeta (AP-735)	Attention:		P.O. #:	7351B145		749287
Address:	455 Phillip St Waterloo ON N2L 3X2	Address:		Project:	11205379-20	COC #:	Project Manager:
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Project Name:		D4749247-94-01	Erica Sitki
Email:	APInvoices-735@ghd.com	Email:		Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☑ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☑ Coarse ☑ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	All Samples on Hold

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☐
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___
(call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & P&T	O. Reg 153 PAHs	O. Reg 153 Metals & Inorganics Pkg	O. Reg 153 OC Pesticides	CL HD ISS PROIS	# of Bottles	Comments
1		11205379-MW25-551	NOV 29	8:15	S		X	-	X	-		4	~~BH HOLD~~
2		11205379-MW5-553	"	8:35	S		X	-	X	-		4	
3		11205379-BH7-551	"	10:30	S		X	X	X	X	X	4	
4		11205379-BH7-552	"	11:00	S		X	-	X	-		4	
5		Trip Blank					X					2	
6													
7													
8													
9													
10													ON HOLD

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
[signature] Ryan Vickerman	19/11/29	16:30	[signature]	2019/11/29	16:30		Time Sensitive	Temperature (°C) on Receipt	Custody Seal Present	Yes	No
			SGS PORT					1.1 / 1.4	Intact	☑	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

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** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

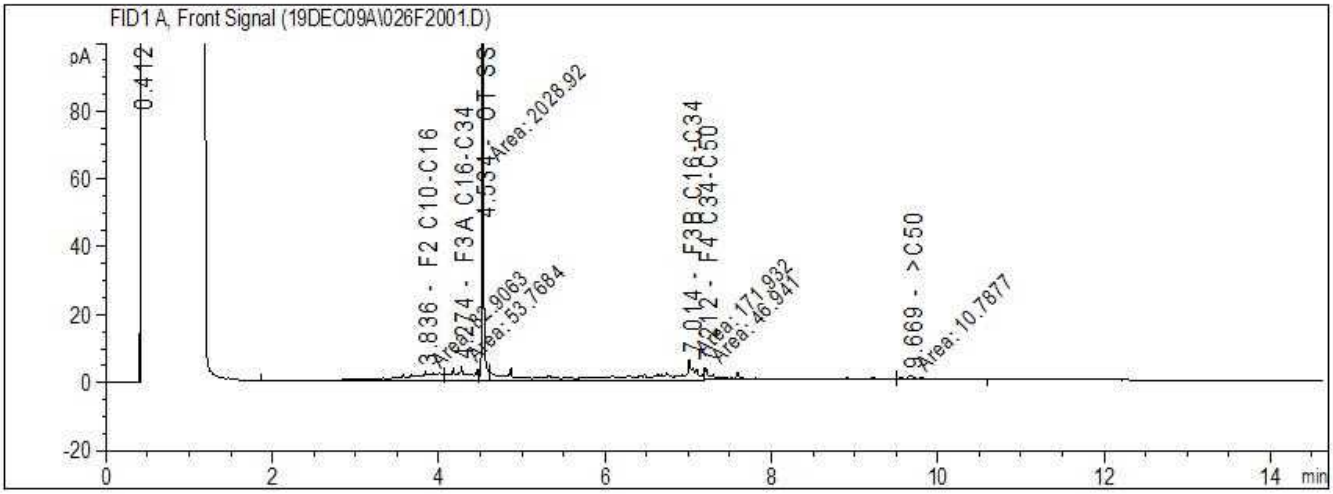
White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

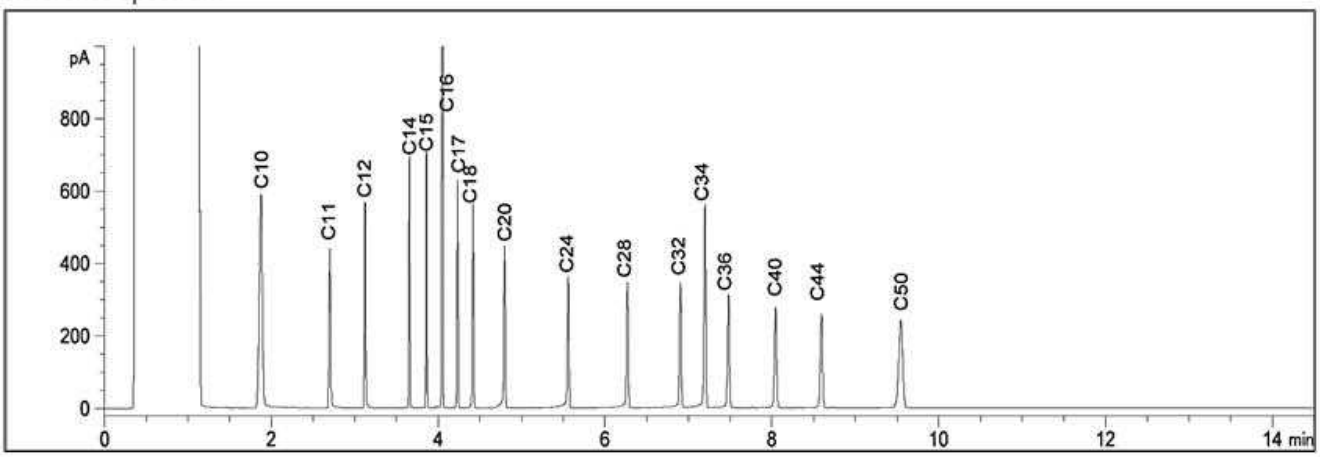
BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK895

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-MW1-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

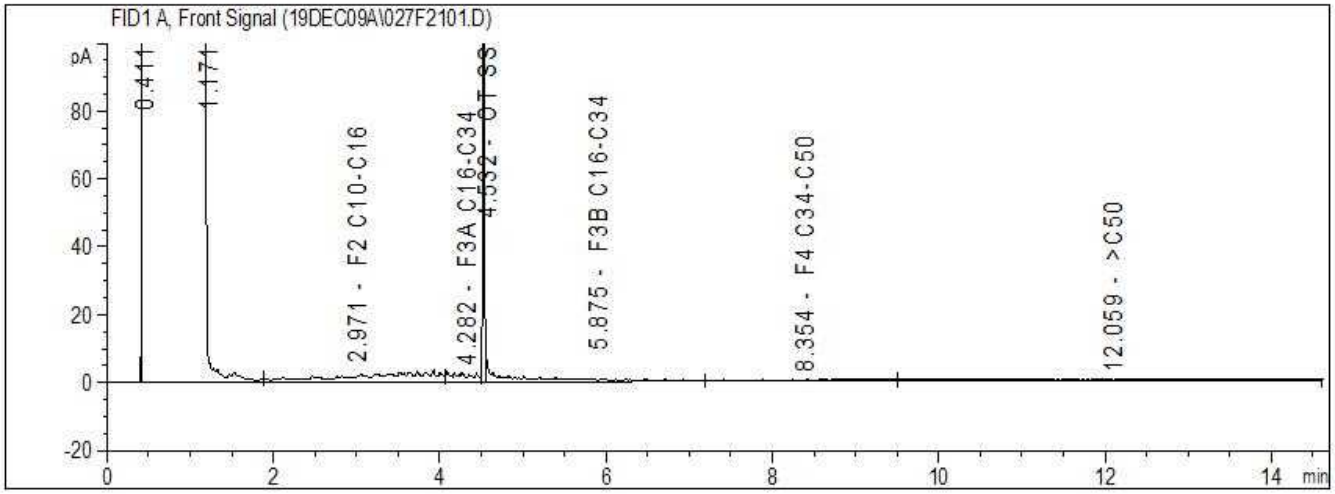
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

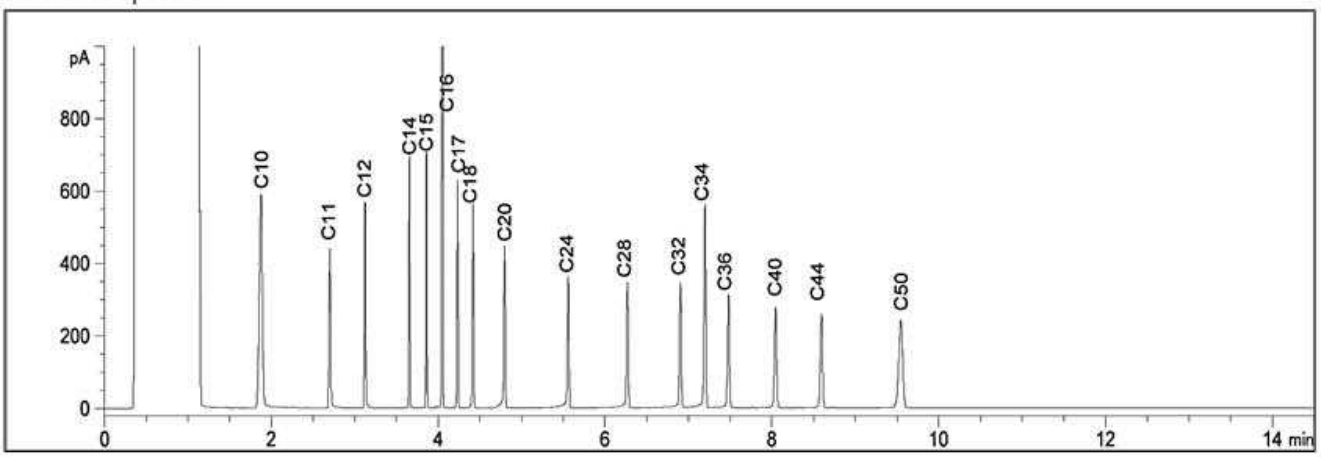
BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK897

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-MW1-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

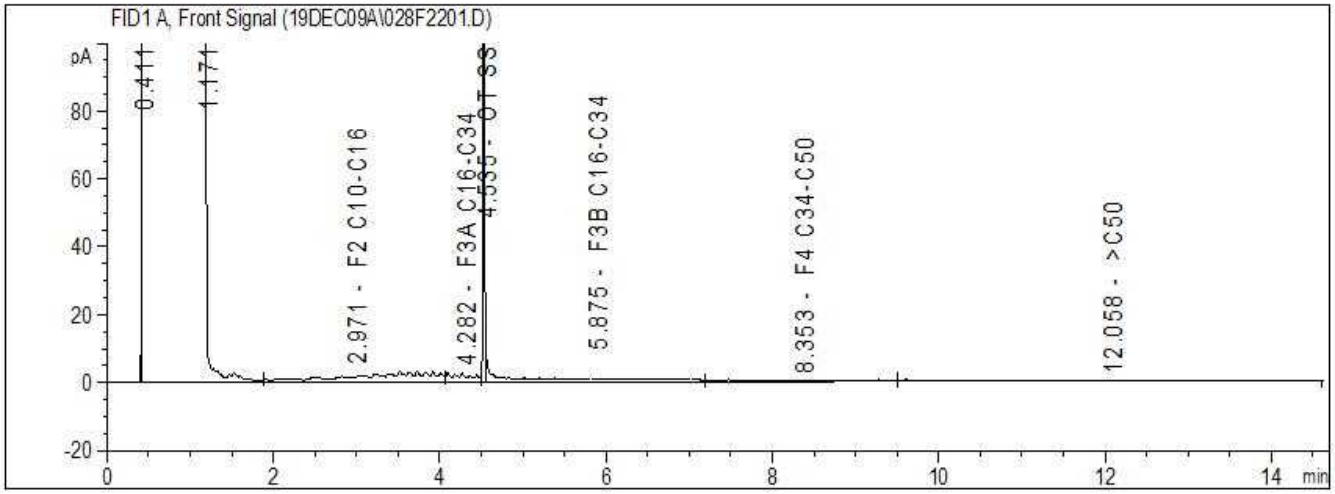
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

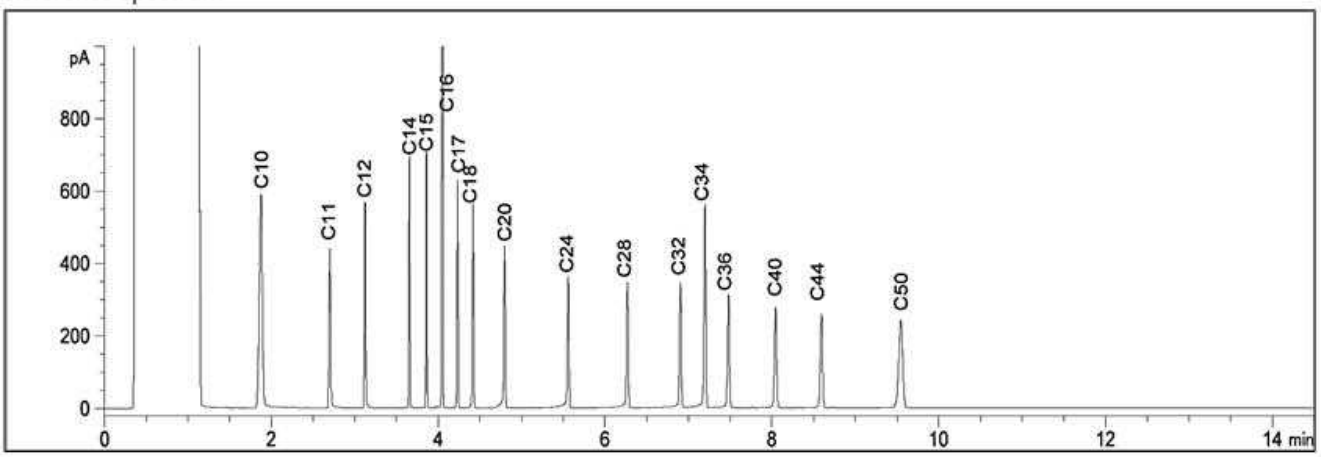
BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK898

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-MW1-SS4

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

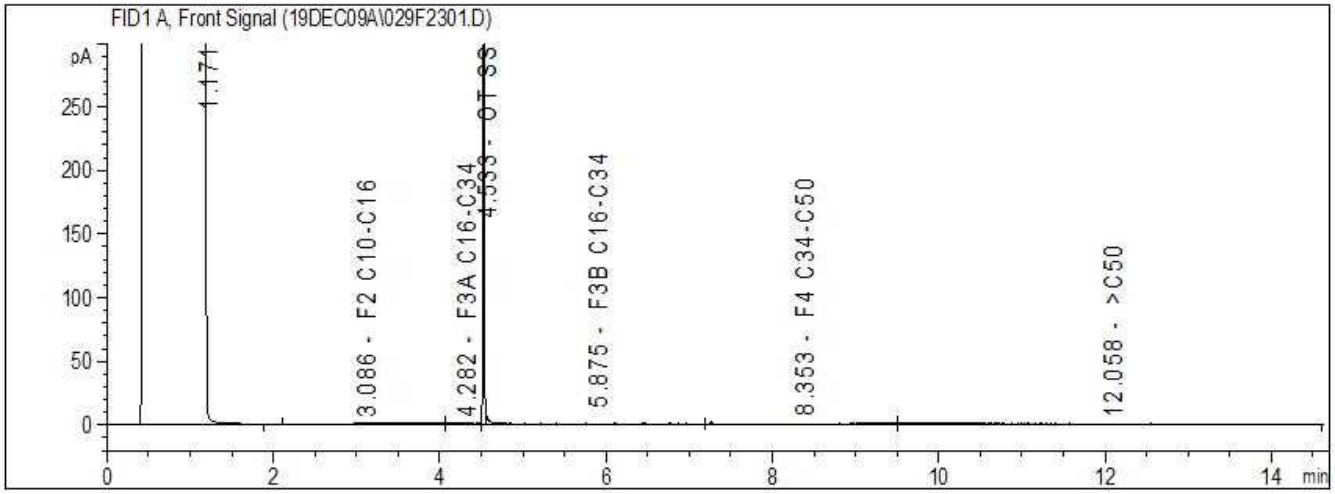
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

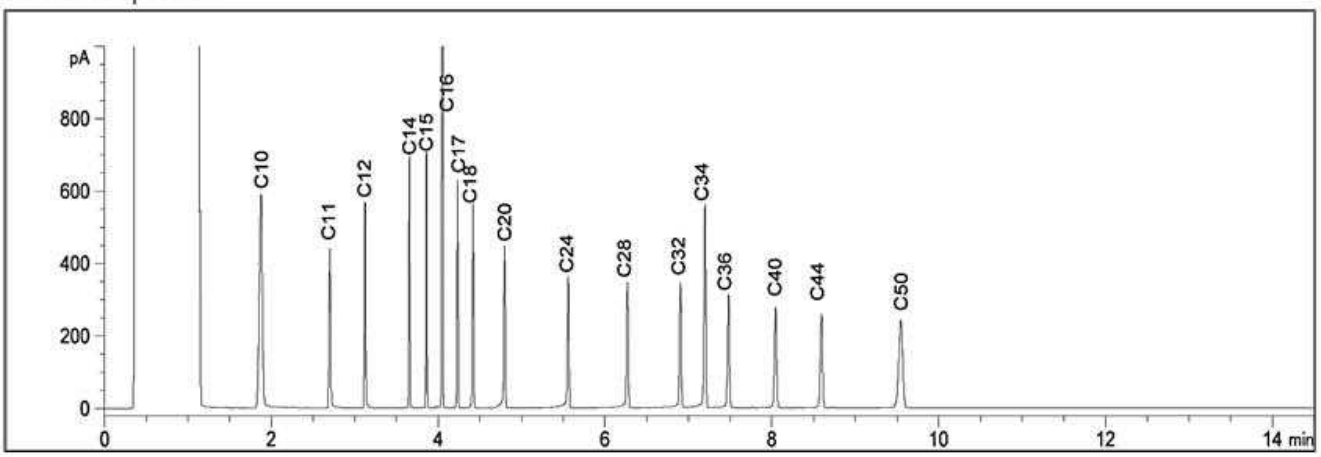
BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK899

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-MW1-SS5

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

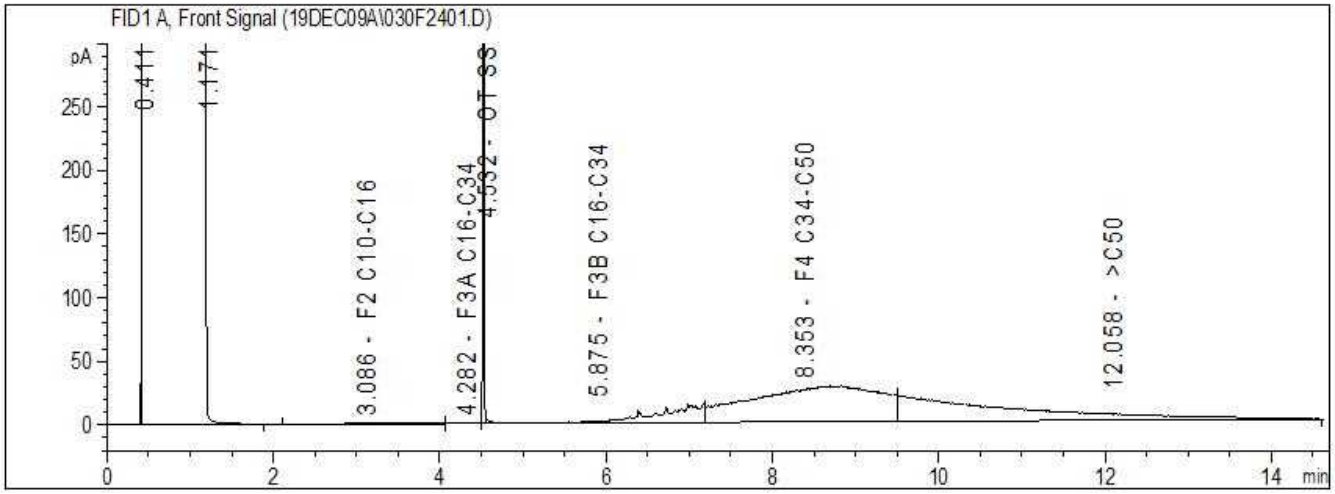
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

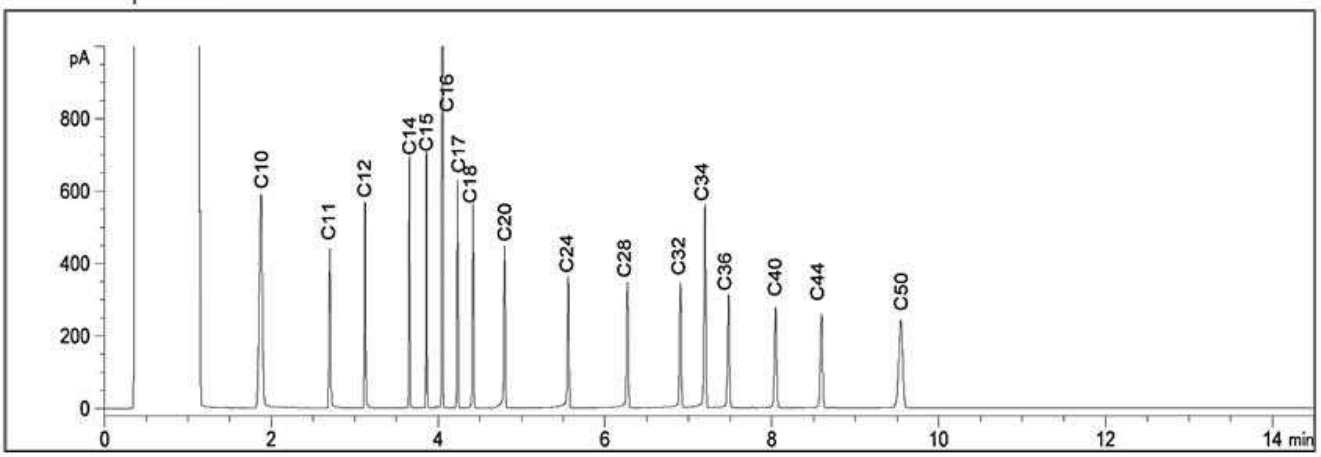
BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK900

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-MW2S-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

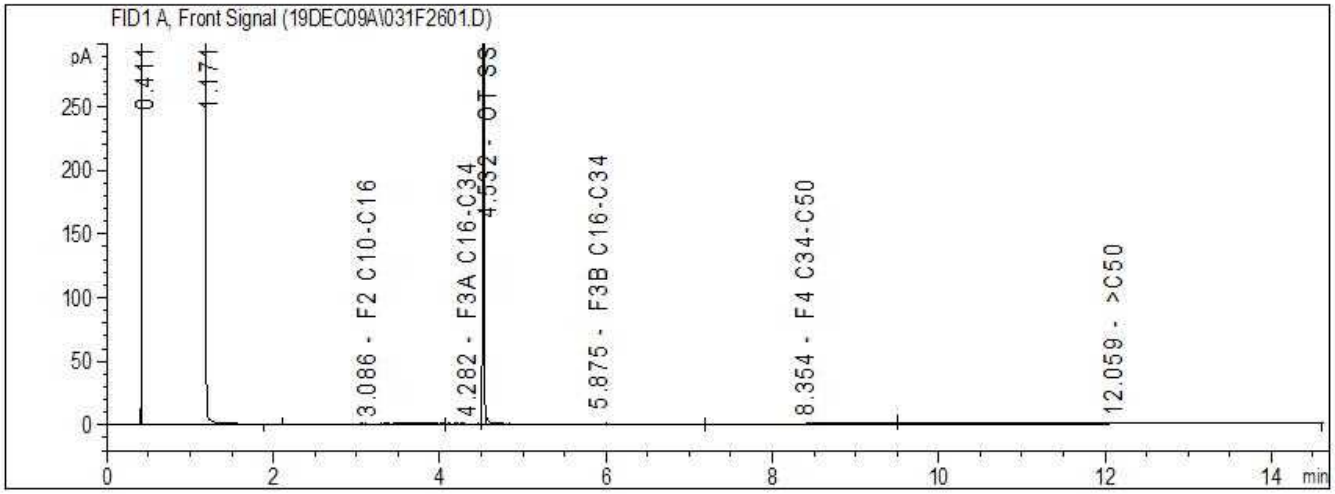
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

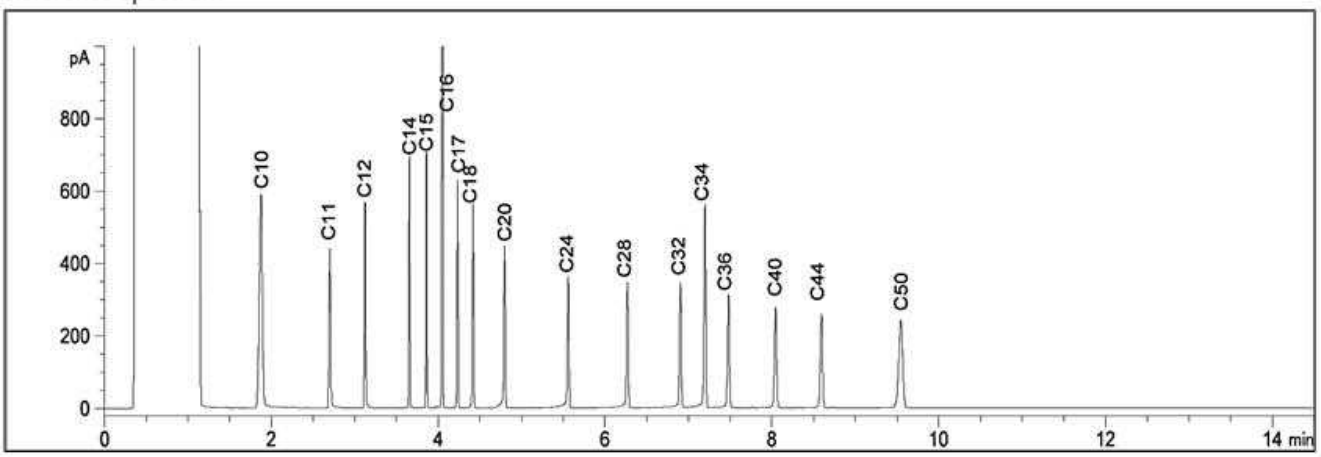
BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK901

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-MW2S-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum

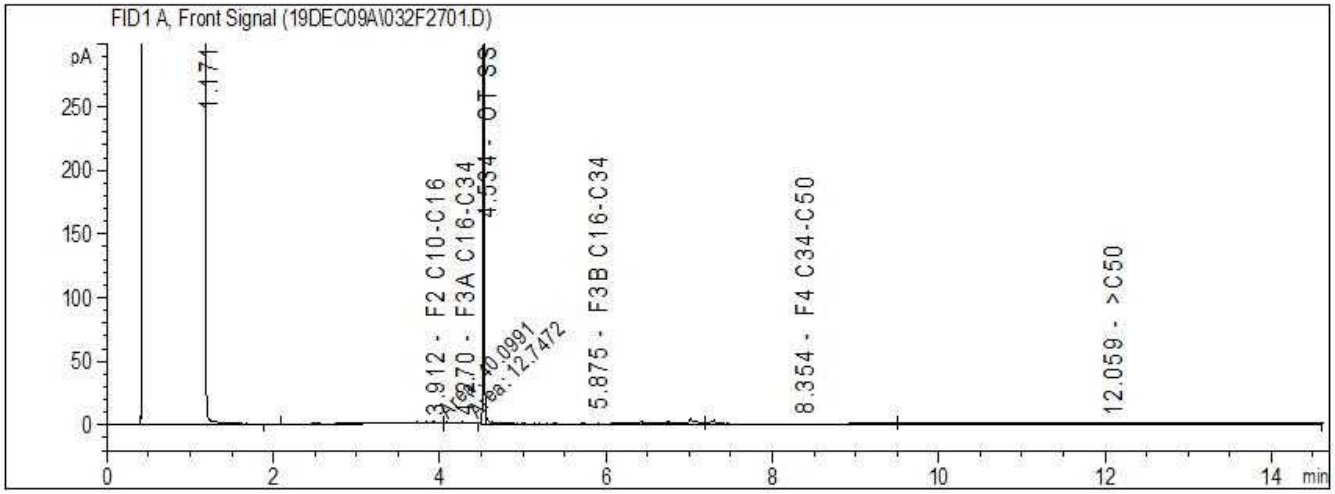


TYPICAL PRODUCT CARBON NUMBER RANGES

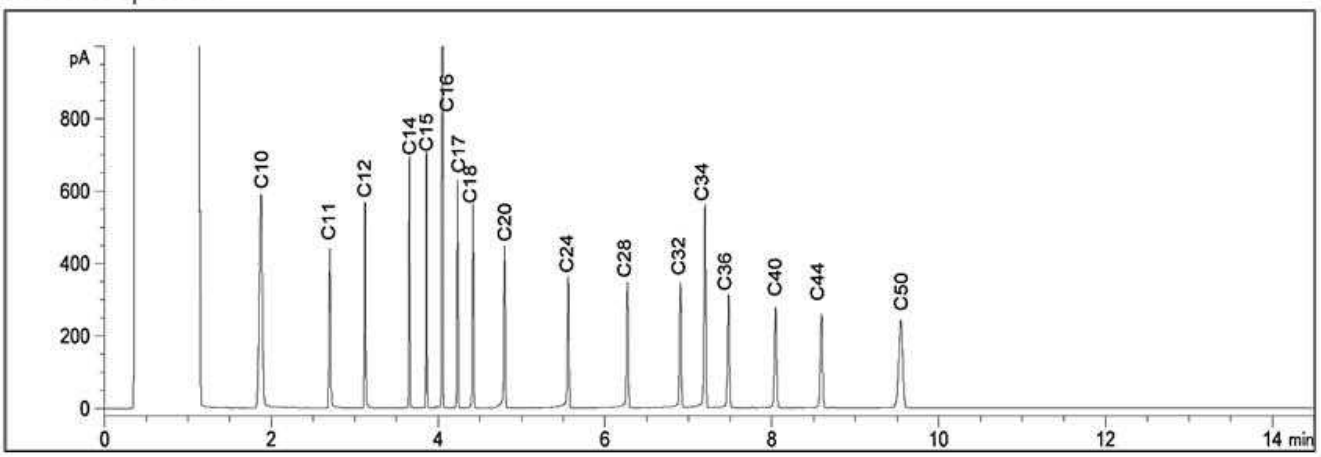
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

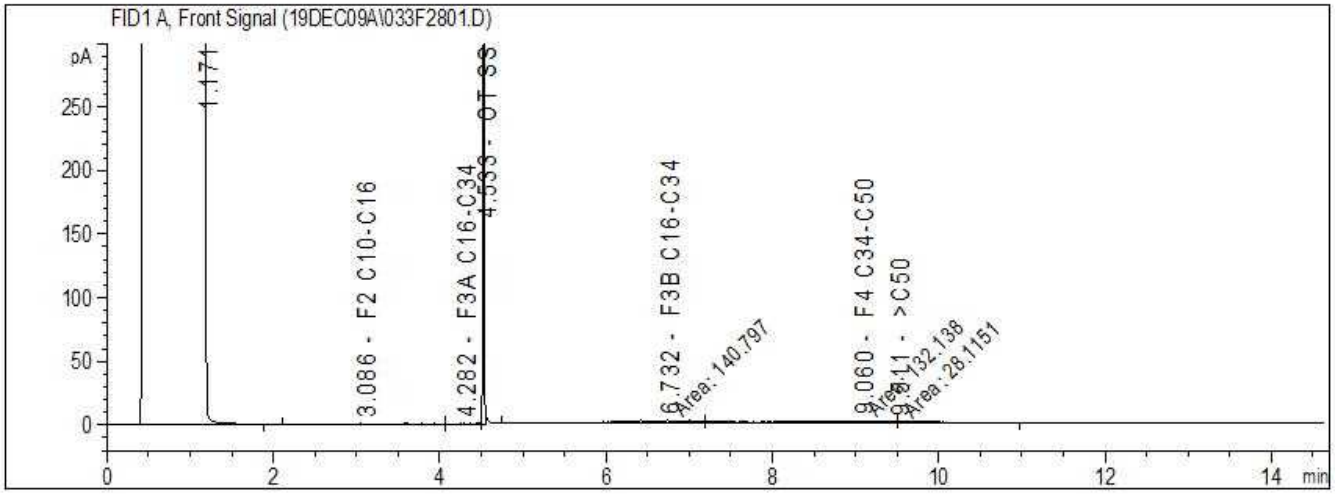
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK904

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-MW3S-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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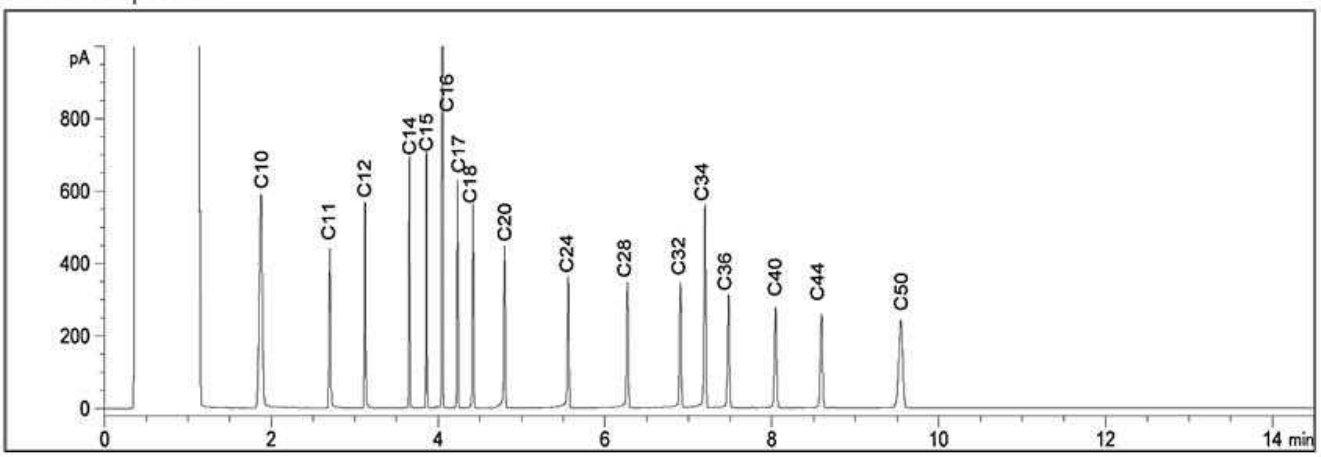
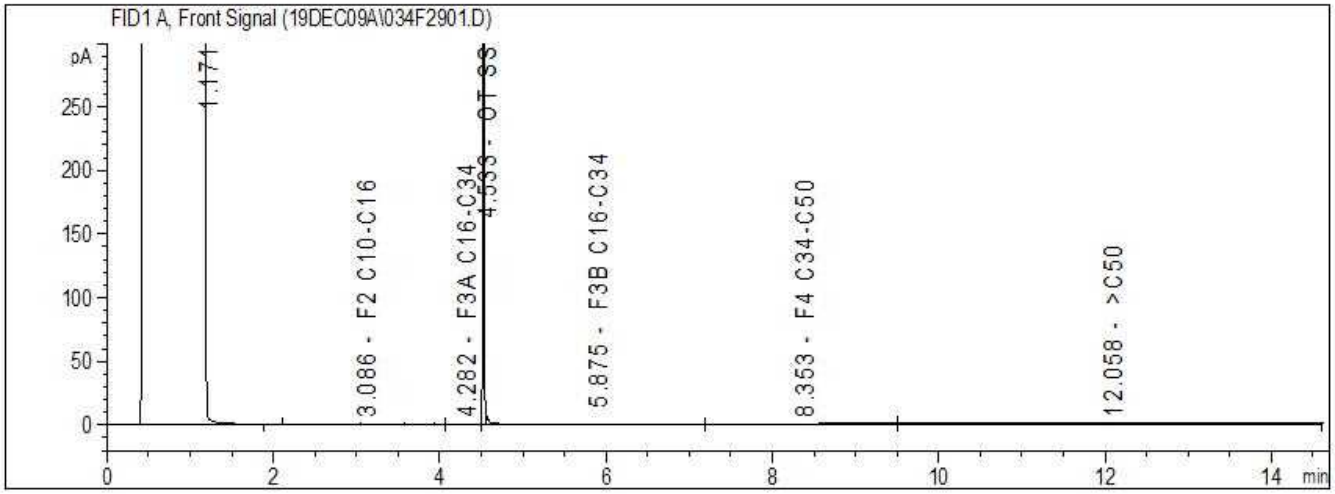


TYPICAL PRODUCT CARBON NUMBER RANGES

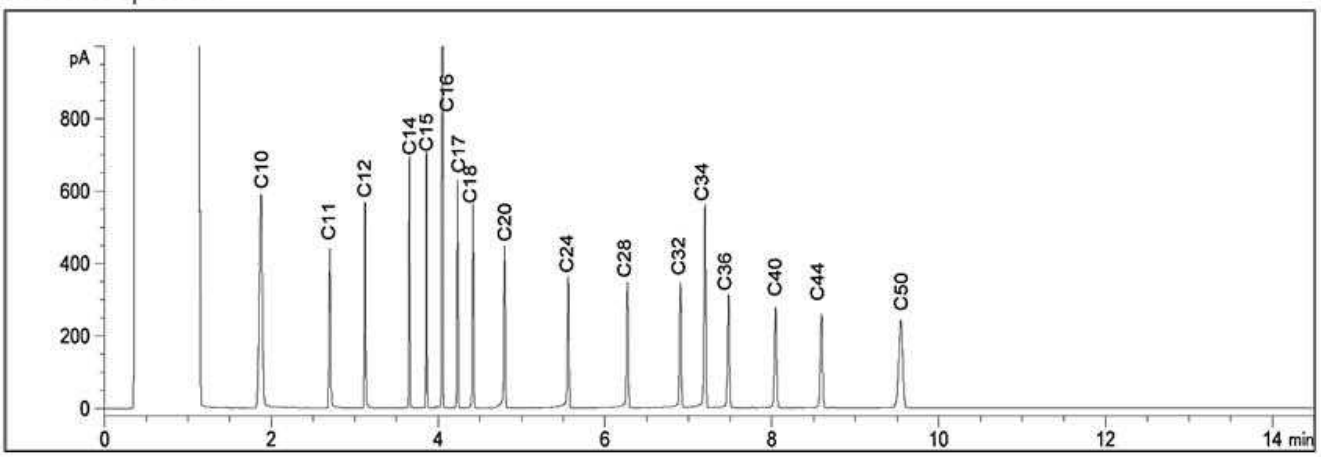
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum

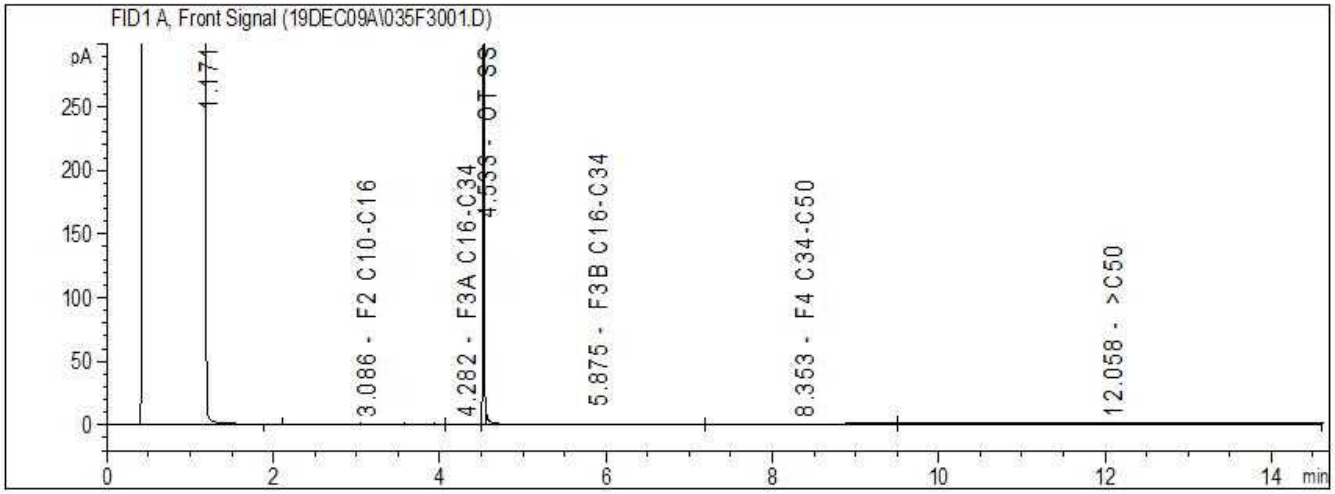


TYPICAL PRODUCT CARBON NUMBER RANGES

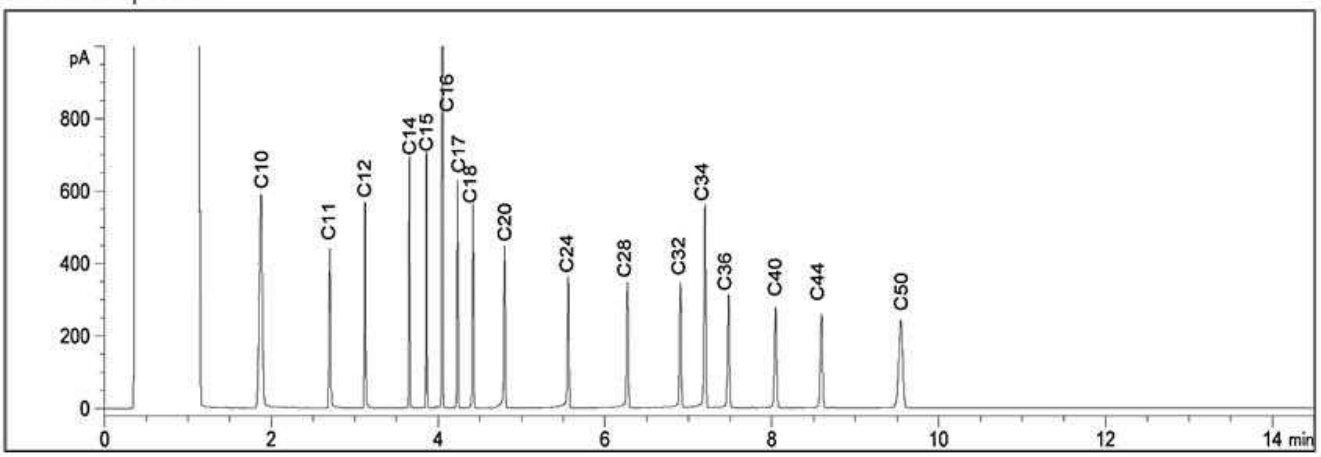
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

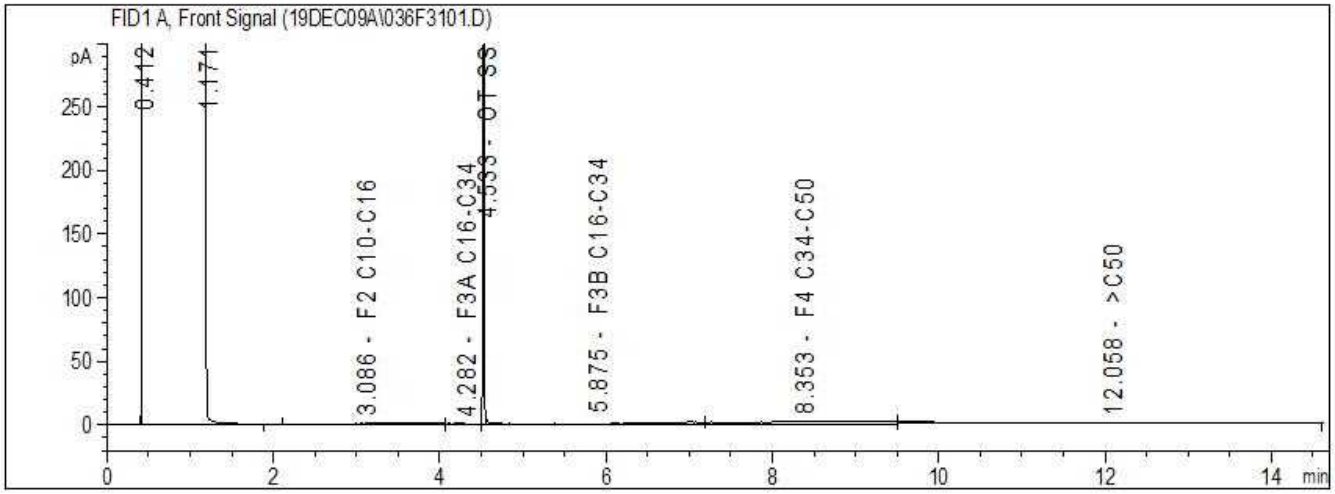
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

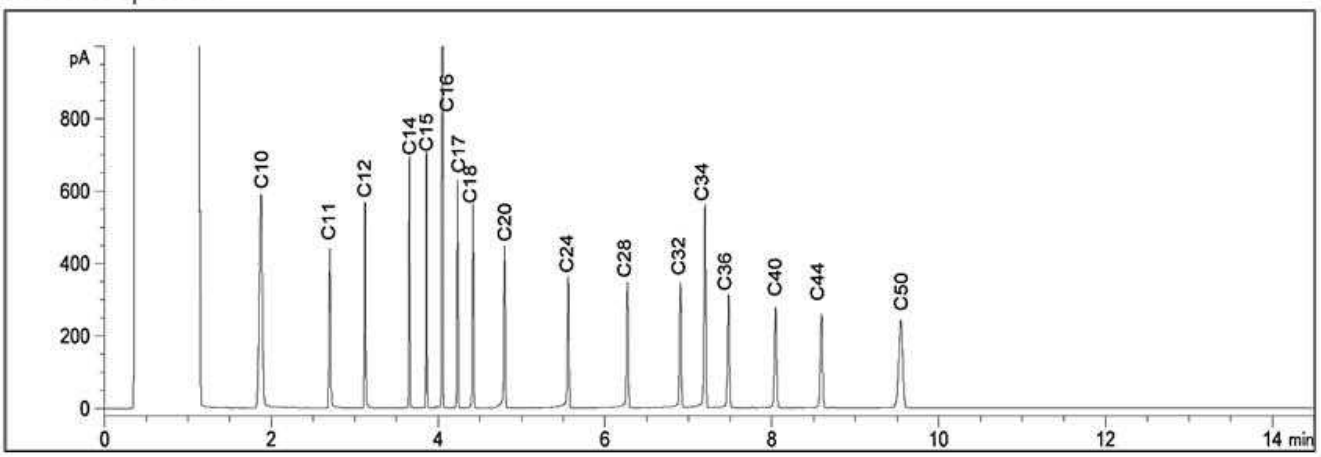
BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK906

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-MW3S-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

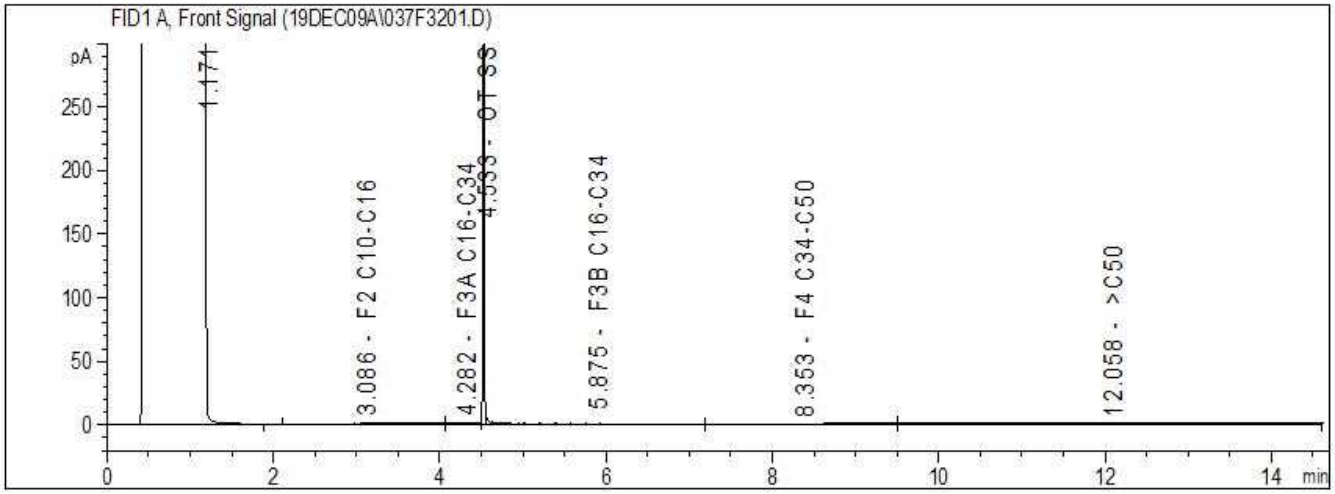
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

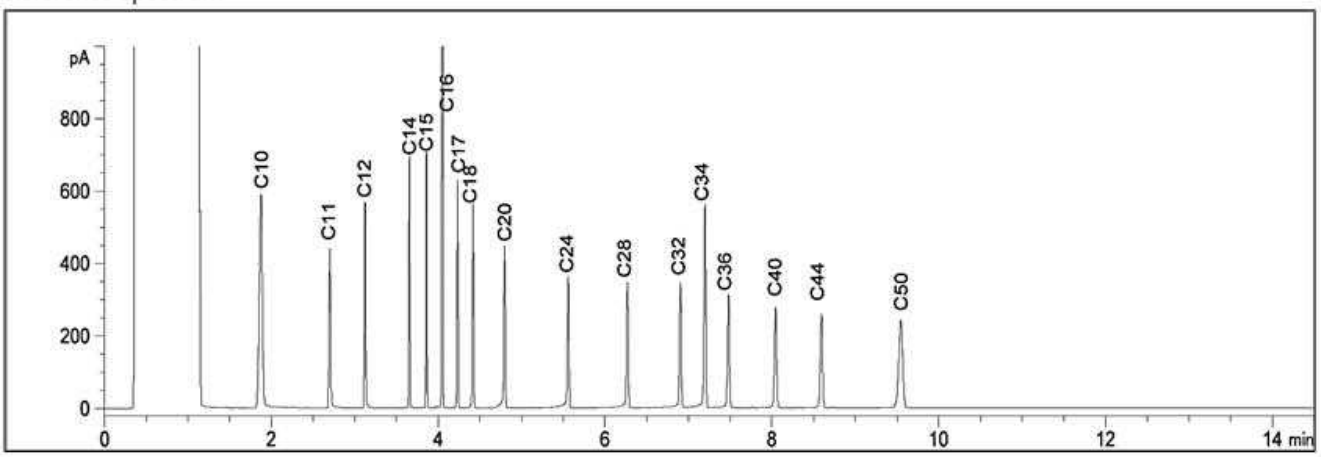
BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK907

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-BH7-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

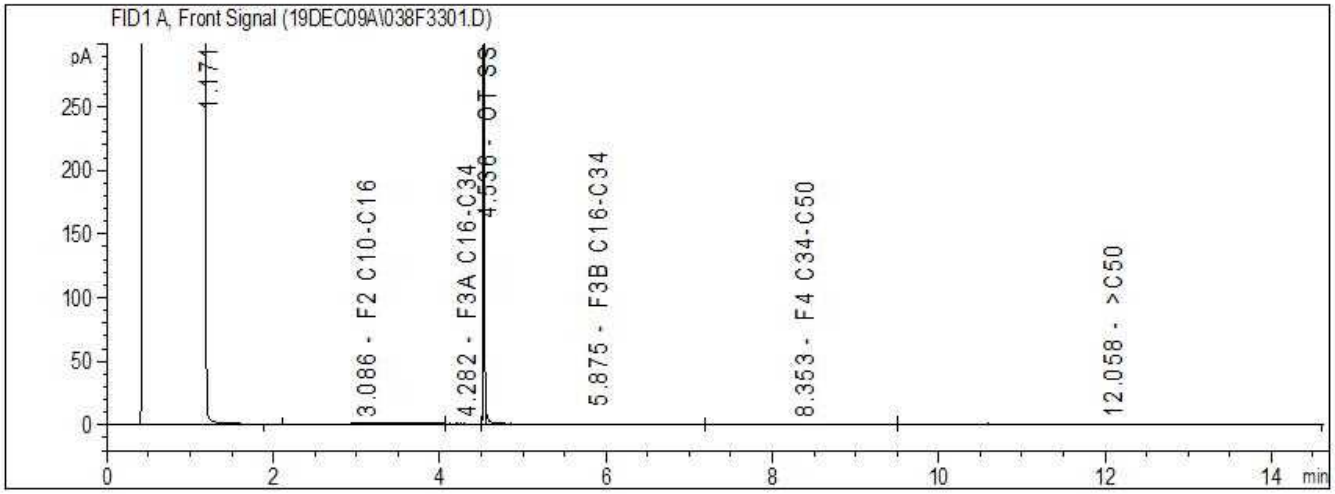
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

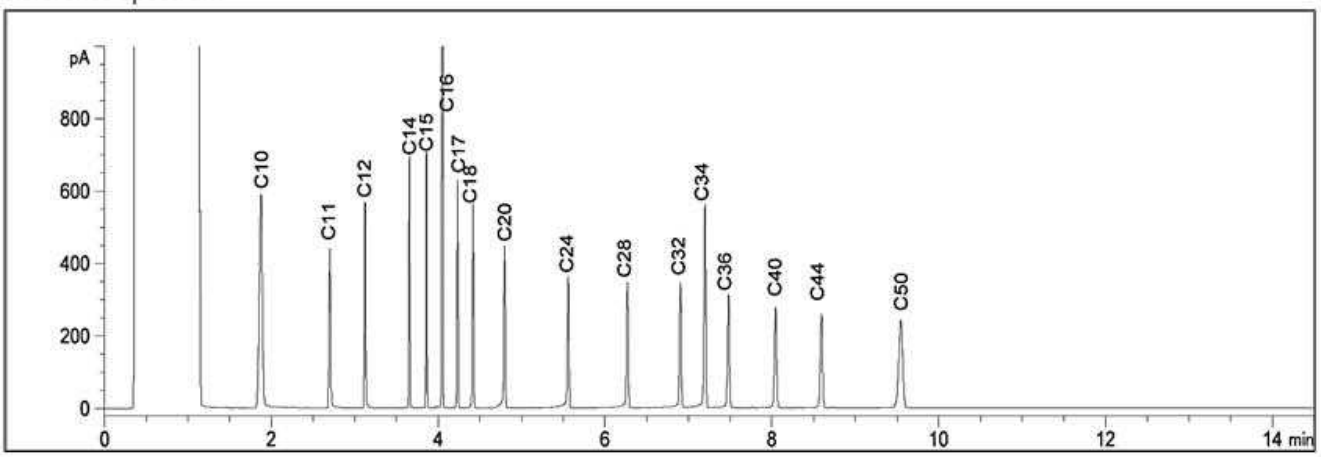
BV Labs Job #: B9X8304
Report Date: 2019/12/12
BV Labs Sample: LLK908

GHD Limited
Client Project #: 11205379-20
Client ID: 11205379-20-BH7-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 73518145
Your Project #: 11205379-20
Site Location: OTTAWA, ON
Your C.O.C. #: 748247-02-01

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2019/12/18
Report #: R6010928
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y4500
Received: 2019/12/05, 11:00

Sample Matrix: Soil
Samples Received: 28

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	11	N/A	2019/12/12	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	27	2019/12/10	2019/12/11	CAM SOP-00408	R153 Ana. Prot. 2011
Hot Water Extractable Boron	1	2019/12/11	2019/12/11	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	20	N/A	2019/12/11		EPA 8260C m
1,3-Dichloropropene Sum	8	N/A	2019/12/12		EPA 8260C m
Free (WAD) Cyanide	28	2019/12/10	2019/12/11	CAM SOP-00457	OMOE E3015 m
Conductivity	28	2019/12/11	2019/12/11	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	28	2019/12/10	2019/12/11	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	22	2019/12/10	2019/12/11	CAM SOP-00316	CCME CWS m
Petroleum Hydrocarbons F2-F4 in Soil (2)	6	2019/12/10	2019/12/12	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric)	7	2019/12/13	2019/12/13	CAM SOP-00316	CCME PHC-CWS m
F4G (CCME Hydrocarbons Gravimetric)	4	2019/12/16	2019/12/16	CAM SOP-00316	CCME PHC-CWS m
Strong Acid Leachable Metals by ICPMS	27	2019/12/10	2019/12/11	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	1	2019/12/11	2019/12/11	CAM SOP-00447	EPA 6020B m
Moisture	28	N/A	2019/12/10	CAM SOP-00445	Carter 2nd ed 51.2 m
OC Pesticides (Selected) & PCB (3)	11	2019/12/17	2019/12/18	CAM SOP-00307	SW846 8081, 8082
OC Pesticides Summed Parameters	8	N/A	2019/12/10	CAM SOP-00307	EPA 8081/8082 m
OC Pesticides Summed Parameters	3	N/A	2019/12/11	CAM SOP-00307	EPA 8081/8082 m
PAH Compounds in Soil by GC/MS (SIM)	11	2019/12/10	2019/12/11	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	20	2019/12/10	2019/12/10	CAM SOP-00413	EPA 9045 D m
pH CaCl2 EXTRACT	8	2019/12/11	2019/12/11	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	1	N/A	2019/12/11	CAM SOP-00102	EPA 6010C
Sodium Adsorption Ratio (SAR)	27	N/A	2019/12/12	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCs	5	N/A	2019/12/10	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds and F1 PHCs	23	N/A	2019/12/11	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using

Your P.O. #: 73518145
Your Project #: 11205379-20
Site Location: OTTAWA, ON
Your C.O.C. #: 748247-02-01

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2019/12/18
Report #: R6010928
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9Y4500
Received: 2019/12/05, 11:00

accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(3) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU949		LMU950		
Sampling Date		2019/12/02 09:05		2019/12/02 09:15		
COC Number		748247-02-01		748247-02-01		
	UNITS	11205379-MW4S-SS1	QC Batch	11205379-MW4S-SS2	RDL	QC Batch
Calculated Parameters						
Sodium Adsorption Ratio	N/A	11	6486527	8.5		6486527
Inorganics						
Conductivity	mS/cm	0.66	6490368	0.30	0.002	6490368
Available (CaCl2) pH	pH	7.40	6488097	6.99		6488198
WAD Cyanide (Free)	ug/g	0.02	6488107	ND	0.01	6488107
Chromium (VI)	ug/g	ND	6487839	ND	0.2	6487839
Metals						
Hot Water Ext. Boron (B)	ug/g	0.30	6489365	0.18	0.050	6489365
Acid Extractable Antimony (Sb)	ug/g	0.23	6488749	0.25	0.20	6488749
Acid Extractable Arsenic (As)	ug/g	3.6	6488749	7.8	1.0	6488749
Acid Extractable Barium (Ba)	ug/g	160	6488749	96	0.50	6488749
Acid Extractable Beryllium (Be)	ug/g	0.51	6488749	1.0	0.20	6488749
Acid Extractable Boron (B)	ug/g	6.4	6488749	7.7	5.0	6488749
Acid Extractable Cadmium (Cd)	ug/g	0.16	6488749	0.16	0.10	6488749
Acid Extractable Chromium (Cr)	ug/g	20	6488749	30	1.0	6488749
Acid Extractable Cobalt (Co)	ug/g	7.6	6488749	12	0.10	6488749
Acid Extractable Copper (Cu)	ug/g	18	6488749	32	0.50	6488749
Acid Extractable Lead (Pb)	ug/g	29	6488749	20	1.0	6488749
Acid Extractable Molybdenum (Mo)	ug/g	1.3	6488749	1.6	0.50	6488749
Acid Extractable Nickel (Ni)	ug/g	18	6488749	36	0.50	6488749
Acid Extractable Selenium (Se)	ug/g	ND	6488749	ND	0.50	6488749
Acid Extractable Silver (Ag)	ug/g	ND	6488749	ND	0.20	6488749
Acid Extractable Thallium (Tl)	ug/g	0.14	6488749	0.18	0.050	6488749
Acid Extractable Uranium (U)	ug/g	0.91	6488749	1.3	0.050	6488749
Acid Extractable Vanadium (V)	ug/g	29	6488749	37	5.0	6488749
Acid Extractable Zinc (Zn)	ug/g	59	6488749	80	5.0	6488749
Acid Extractable Mercury (Hg)	ug/g	ND	6488749	ND	0.050	6488749

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU950			LMU951		
Sampling Date		2019/12/02 09:15			2019/12/04 10:10		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-MW4S-SS2 Lab-Dup	RDL	QC Batch	11205379-MW5-SS1	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A				10		6486527
Inorganics							
Conductivity	mS/cm				0.99	0.002	6490368
Available (CaCl2) pH	pH				8.26		6488097
WAD Cyanide (Free)	ug/g				ND	0.01	6488107
Chromium (VI)	ug/g				ND	0.2	6487839
Metals							
Hot Water Ext. Boron (B)	ug/g	0.17	0.050	6489365	0.34	0.050	6489365
Acid Extractable Antimony (Sb)	ug/g				ND	0.20	6488749
Acid Extractable Arsenic (As)	ug/g				6.8	1.0	6488749
Acid Extractable Barium (Ba)	ug/g				15	0.50	6488749
Acid Extractable Beryllium (Be)	ug/g				ND	0.20	6488749
Acid Extractable Boron (B)	ug/g				6.5	5.0	6488749
Acid Extractable Cadmium (Cd)	ug/g				ND	0.10	6488749
Acid Extractable Chromium (Cr)	ug/g				7.5	1.0	6488749
Acid Extractable Cobalt (Co)	ug/g				6.2	0.10	6488749
Acid Extractable Copper (Cu)	ug/g				6.0	0.50	6488749
Acid Extractable Lead (Pb)	ug/g				20	1.0	6488749
Acid Extractable Molybdenum (Mo)	ug/g				6.7	0.50	6488749
Acid Extractable Nickel (Ni)	ug/g				14	0.50	6488749
Acid Extractable Selenium (Se)	ug/g				ND	0.50	6488749
Acid Extractable Silver (Ag)	ug/g				ND	0.20	6488749
Acid Extractable Thallium (Tl)	ug/g				0.21	0.050	6488749
Acid Extractable Uranium (U)	ug/g				0.51	0.050	6488749
Acid Extractable Vanadium (V)	ug/g				18	5.0	6488749
Acid Extractable Zinc (Zn)	ug/g				12	5.0	6488749
Acid Extractable Mercury (Hg)	ug/g				ND	0.050	6488749

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU952		LMU953		LMU954		
Sampling Date		2019/12/04 10:20		2019/12/04 10:30		2019/12/02 12:50		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-MW5-SS2	QC Batch	11205379-MW5-SS3	QC Batch	11205379-BH6-SS1	RDL	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	98	6486527	62	6486527	19		6486527
Inorganics								
Conductivity	mS/cm	3.1	6490368	1.5	6490368	1.3	0.002	6490368
Available (CaCl2) pH	pH	7.67	6488198	8.15	6488097	7.96		6490478
WAD Cyanide (Free)	ug/g	ND	6488107	ND	6488107	ND	0.01	6489807
Chromium (VI)	ug/g	ND	6487839	ND	6487839	ND	0.2	6489758
Metals								
Hot Water Ext. Boron (B)	ug/g	0.21	6489365	0.31	6489365	0.53	0.050	6489365
Acid Extractable Antimony (Sb)	ug/g	ND	6488749	0.32	6488749	ND	0.20	6488630
Acid Extractable Arsenic (As)	ug/g	3.7	6488749	7.7	6488749	2.4	1.0	6488630
Acid Extractable Barium (Ba)	ug/g	100	6488749	210	6488749	160	0.50	6488630
Acid Extractable Beryllium (Be)	ug/g	0.64	6488749	1.0	6488749	0.23	0.20	6488630
Acid Extractable Boron (B)	ug/g	5.7	6488749	10	6488749	9.3	5.0	6488630
Acid Extractable Cadmium (Cd)	ug/g	0.15	6488749	0.13	6488749	ND	0.10	6488630
Acid Extractable Chromium (Cr)	ug/g	23	6488749	30	6488749	9.4	1.0	6488630
Acid Extractable Cobalt (Co)	ug/g	11	6488749	19	6488749	4.2	0.10	6488630
Acid Extractable Copper (Cu)	ug/g	27	6488749	42	6488749	7.3	0.50	6488630
Acid Extractable Lead (Pb)	ug/g	11	6488749	17	6488749	7.9	1.0	6488630
Acid Extractable Molybdenum (Mo)	ug/g	1.5	6488749	1.2	6488749	1.6	0.50	6488630
Acid Extractable Nickel (Ni)	ug/g	28	6488749	43	6488749	10	0.50	6488630
Acid Extractable Selenium (Se)	ug/g	ND	6488749	ND	6488749	ND	0.50	6488630
Acid Extractable Silver (Ag)	ug/g	ND	6488749	ND	6488749	ND	0.20	6488630
Acid Extractable Thallium (Tl)	ug/g	0.20	6488749	0.19	6488749	0.12	0.050	6488630
Acid Extractable Uranium (U)	ug/g	0.73	6488749	0.91	6488749	0.36	0.050	6488630
Acid Extractable Vanadium (V)	ug/g	31	6488749	32	6488749	8.3	5.0	6488630
Acid Extractable Zinc (Zn)	ug/g	55	6488749	85	6488749	13	5.0	6488630
Acid Extractable Mercury (Hg)	ug/g	ND	6488749	ND	6488749	ND	0.050	6488630

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU955		LMU956		LMU957		
Sampling Date		2019/12/02 13:05		2019/12/02 11:35		2019/12/02 11:40		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-BH6-SS2	QC Batch	11205379-BH8-SS1	QC Batch	11205379-BH8-SS2	RDL	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	49	6486527	13	6486527	51		6486527
Inorganics								
Conductivity	mS/cm	1.8	6490365	0.87	6490365	2.6	0.002	6490365
Available (CaCl2) pH	pH	8.01	6490478	7.49	6488198	7.65		6488097
WAD Cyanide (Free)	ug/g	ND	6489807	0.02	6488107	ND	0.01	6488107
Chromium (VI)	ug/g	ND	6489758	ND	6487839	ND	0.2	6487839
Metals								
Hot Water Ext. Boron (B)	ug/g	0.17	6489138	0.21	6489138	0.13	0.050	6489138
Acid Extractable Antimony (Sb)	ug/g	0.21	6488630	ND	6488630	ND	0.20	6488630
Acid Extractable Arsenic (As)	ug/g	6.3	6488630	2.9	6488630	4.9	1.0	6488630
Acid Extractable Barium (Ba)	ug/g	180	6488630	71	6488630	86	0.50	6488630
Acid Extractable Beryllium (Be)	ug/g	0.87	6488630	0.35	6488630	0.72	0.20	6488630
Acid Extractable Boron (B)	ug/g	7.7	6488630	6.1	6488630	6.2	5.0	6488630
Acid Extractable Cadmium (Cd)	ug/g	0.22	6488630	0.15	6488630	0.16	0.10	6488630
Acid Extractable Chromium (Cr)	ug/g	29	6488630	17	6488630	26	1.0	6488630
Acid Extractable Cobalt (Co)	ug/g	16	6488630	6.9	6488630	13	0.10	6488630
Acid Extractable Copper (Cu)	ug/g	44	6488630	14	6488630	29	0.50	6488630
Acid Extractable Lead (Pb)	ug/g	12	6488630	15	6488630	12	1.0	6488630
Acid Extractable Molybdenum (Mo)	ug/g	1.5	6488630	1.7	6488630	1.2	0.50	6488630
Acid Extractable Nickel (Ni)	ug/g	37	6488630	14	6488630	32	0.50	6488630
Acid Extractable Selenium (Se)	ug/g	ND	6488630	ND	6488630	ND	0.50	6488630
Acid Extractable Silver (Ag)	ug/g	ND	6488630	ND	6488630	ND	0.20	6488630
Acid Extractable Thallium (Tl)	ug/g	0.14	6488630	0.13	6488630	0.17	0.050	6488630
Acid Extractable Uranium (U)	ug/g	0.72	6488630	1.3	6488630	0.80	0.050	6488630
Acid Extractable Vanadium (V)	ug/g	33	6488630	24	6488630	30	5.0	6488630
Acid Extractable Zinc (Zn)	ug/g	120	6488630	36	6488630	63	5.0	6488630
Acid Extractable Mercury (Hg)	ug/g	ND	6488630	ND	6488630	ND	0.050	6488630

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU957			LMU958		LMU959		
Sampling Date		2019/12/02 11:40			2019/12/03 14:45		2019/12/02 09:05		
COC Number		748247-02-01			748247-02-01		748247-02-01		
	UNITS	11205379-BH8-SS2 Lab-Dup	RDL	QC Batch	11205379-BH9-SS1	QC Batch	11205379-DUP1	RDL	QC Batch
Calculated Parameters									
Sodium Adsorption Ratio	N/A				19	6486527	13		6486527
Inorganics									
Conductivity	mS/cm				0.64	6490365	0.74	0.002	6490365
Available (CaCl2) pH	pH				8.14	6488097	7.37		6488097
WAD Cyanide (Free)	ug/g				ND	6488107	0.01	0.01	6488107
Chromium (VI)	ug/g				ND	6487839	ND	0.2	6487839
Metals									
Hot Water Ext. Boron (B)	ug/g	0.12	0.050	6489138	0.41	6489138	0.26	0.050	6489138
Acid Extractable Antimony (Sb)	ug/g				ND	6488749	ND	0.20	6488630
Acid Extractable Arsenic (As)	ug/g				1.9	6488749	3.8	1.0	6488630
Acid Extractable Barium (Ba)	ug/g				140	6488749	99	0.50	6488630
Acid Extractable Beryllium (Be)	ug/g				ND	6488749	0.50	0.20	6488630
Acid Extractable Boron (B)	ug/g				8.4	6488749	6.3	5.0	6488630
Acid Extractable Cadmium (Cd)	ug/g				ND	6488749	0.15	0.10	6488630
Acid Extractable Chromium (Cr)	ug/g				7.7	6488749	19	1.0	6488630
Acid Extractable Cobalt (Co)	ug/g				3.4	6488749	8.5	0.10	6488630
Acid Extractable Copper (Cu)	ug/g				4.9	6488749	17	0.50	6488630
Acid Extractable Lead (Pb)	ug/g				6.3	6488749	26	1.0	6488630
Acid Extractable Molybdenum (Mo)	ug/g				1.5	6488749	1.2	0.50	6488630
Acid Extractable Nickel (Ni)	ug/g				8.0	6488749	19	0.50	6488630
Acid Extractable Selenium (Se)	ug/g				ND	6488749	ND	0.50	6488630
Acid Extractable Silver (Ag)	ug/g				ND	6488749	ND	0.20	6488630
Acid Extractable Thallium (Tl)	ug/g				0.11	6488749	0.15	0.050	6488630
Acid Extractable Uranium (U)	ug/g				0.32	6488749	0.89	0.050	6488630
Acid Extractable Vanadium (V)	ug/g				6.1	6488749	29	5.0	6488630
Acid Extractable Zinc (Zn)	ug/g				7.3	6488749	58	5.0	6488630
Acid Extractable Mercury (Hg)	ug/g				ND	6488749	ND	0.050	6488630

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU961			LMU961		
Sampling Date		2019/12/03 15:10			2019/12/03 15:10		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-BH9-SS3	RDL	QC Batch	11205379-BH9-SS3 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	1.9		6486527			
Inorganics							
Conductivity	mS/cm	0.74	0.002	6490365	0.74	0.002	6490365
Available (CaCl2) pH	pH	7.08		6488097			
WAD Cyanide (Free)	ug/g	ND	0.01	6488107			
Chromium (VI)	ug/g	ND	0.2	6487839			
Metals							
Hot Water Ext. Boron (B)	ug/g	0.16	0.050	6489138			
Acid Extractable Antimony (Sb)	ug/g	ND	0.20	6488630			
Acid Extractable Arsenic (As)	ug/g	1.9	1.0	6488630			
Acid Extractable Barium (Ba)	ug/g	110	0.50	6488630			
Acid Extractable Beryllium (Be)	ug/g	0.79	0.20	6488630			
Acid Extractable Boron (B)	ug/g	ND	5.0	6488630			
Acid Extractable Cadmium (Cd)	ug/g	0.14	0.10	6488630			
Acid Extractable Chromium (Cr)	ug/g	37	1.0	6488630			
Acid Extractable Cobalt (Co)	ug/g	9.2	0.10	6488630			
Acid Extractable Copper (Cu)	ug/g	15	0.50	6488630			
Acid Extractable Lead (Pb)	ug/g	7.1	1.0	6488630			
Acid Extractable Molybdenum (Mo)	ug/g	0.58	0.50	6488630			
Acid Extractable Nickel (Ni)	ug/g	37	0.50	6488630			
Acid Extractable Selenium (Se)	ug/g	ND	0.50	6488630			
Acid Extractable Silver (Ag)	ug/g	ND	0.20	6488630			
Acid Extractable Thallium (Tl)	ug/g	0.17	0.050	6488630			
Acid Extractable Uranium (U)	ug/g	0.93	0.050	6488630			
Acid Extractable Vanadium (V)	ug/g	45	5.0	6488630			
Acid Extractable Zinc (Zn)	ug/g	110	5.0	6488630			
Acid Extractable Mercury (Hg)	ug/g	ND	0.050	6488630			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU962			LMU962		
Sampling Date		2019/12/03 15:20			2019/12/03 15:20		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-BH9-SS4	RDL	QC Batch	11205379-BH9-SS4 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	2.5		6486527			
Inorganics							
Conductivity	mS/cm	0.51	0.002	6490365			
Available (CaCl2) pH	pH	7.82		6488097			
WAD Cyanide (Free)	ug/g	ND	0.01	6488107			
Chromium (VI)	ug/g	ND	0.2	6487839			
Metals							
Hot Water Ext. Boron (B)	ug/g	0.27	0.050	6489138			
Acid Extractable Antimony (Sb)	ug/g	0.32	0.20	6488630	0.38	0.20	6488630
Acid Extractable Arsenic (As)	ug/g	8.3	1.0	6488630	8.3	1.0	6488630
Acid Extractable Barium (Ba)	ug/g	190	0.50	6488630	190	0.50	6488630
Acid Extractable Beryllium (Be)	ug/g	0.94	0.20	6488630	0.96	0.20	6488630
Acid Extractable Boron (B)	ug/g	9.7	5.0	6488630	9.7	5.0	6488630
Acid Extractable Cadmium (Cd)	ug/g	0.14	0.10	6488630	0.13	0.10	6488630
Acid Extractable Chromium (Cr)	ug/g	32	1.0	6488630	31	1.0	6488630
Acid Extractable Cobalt (Co)	ug/g	21	0.10	6488630	21	0.10	6488630
Acid Extractable Copper (Cu)	ug/g	41	0.50	6488630	44	0.50	6488630
Acid Extractable Lead (Pb)	ug/g	20	1.0	6488630	20	1.0	6488630
Acid Extractable Molybdenum (Mo)	ug/g	1.6	0.50	6488630	1.4	0.50	6488630
Acid Extractable Nickel (Ni)	ug/g	46	0.50	6488630	46	0.50	6488630
Acid Extractable Selenium (Se)	ug/g	ND	0.50	6488630	ND	0.50	6488630
Acid Extractable Silver (Ag)	ug/g	ND	0.20	6488630	ND	0.20	6488630
Acid Extractable Thallium (Tl)	ug/g	0.17	0.050	6488630	0.16	0.050	6488630
Acid Extractable Uranium (U)	ug/g	0.93	0.050	6488630	0.92	0.050	6488630
Acid Extractable Vanadium (V)	ug/g	35	5.0	6488630	33	5.0	6488630
Acid Extractable Zinc (Zn)	ug/g	94	5.0	6488630	91	5.0	6488630
Acid Extractable Mercury (Hg)	ug/g	ND	0.050	6488630	ND	0.050	6488630

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU963	LMU965	LMU966		
Sampling Date		2019/12/02 14:20	2019/12/02 14:40	2019/12/02 14:50		
COC Number		748247-02-01	748247-02-01	748247-02-01		
	UNITS	11205379-BH10-SS1	11205379-BH10-SS3	11205379-BH10-SS4	RDL	QC Batch
Calculated Parameters						
Sodium Adsorption Ratio	N/A	14	2.7	4.9		6486527
Inorganics						
Conductivity	mS/cm	1.1	2.2	2.2	0.002	6490365
Available (CaCl2) pH	pH	8.19	7.55	11.9		6488097
WAD Cyanide (Free)	ug/g	ND	ND	ND	0.01	6488107
Chromium (VI)	ug/g	ND	ND	ND	0.2	6487839
Metals						
Hot Water Ext. Boron (B)	ug/g	0.39	1.4	0.17	0.050	6489138
Acid Extractable Antimony (Sb)	ug/g	ND	ND	0.27	0.20	6488630
Acid Extractable Arsenic (As)	ug/g	2.6	2.6	5.5	1.0	6488630
Acid Extractable Barium (Ba)	ug/g	300	210	110	0.50	6488630
Acid Extractable Beryllium (Be)	ug/g	0.21	0.75	0.72	0.20	6488630
Acid Extractable Boron (B)	ug/g	7.5	8.2	12	5.0	6488630
Acid Extractable Cadmium (Cd)	ug/g	ND	0.16	ND	0.10	6488630
Acid Extractable Chromium (Cr)	ug/g	8.1	67	27	1.0	6488630
Acid Extractable Cobalt (Co)	ug/g	3.8	15	14	0.10	6488630
Acid Extractable Copper (Cu)	ug/g	5.7	37	31	0.50	6488630
Acid Extractable Lead (Pb)	ug/g	7.8	14	16	1.0	6488630
Acid Extractable Molybdenum (Mo)	ug/g	2.1	1.0	1.3	0.50	6488630
Acid Extractable Nickel (Ni)	ug/g	8.4	43	31	0.50	6488630
Acid Extractable Selenium (Se)	ug/g	ND	ND	ND	0.50	6488630
Acid Extractable Silver (Ag)	ug/g	ND	ND	ND	0.20	6488630
Acid Extractable Thallium (Tl)	ug/g	0.098	0.30	0.11	0.050	6488630
Acid Extractable Uranium (U)	ug/g	0.38	0.93	0.70	0.050	6488630
Acid Extractable Vanadium (V)	ug/g	7.1	70	30	5.0	6488630
Acid Extractable Zinc (Zn)	ug/g	11	110	55	5.0	6488630
Acid Extractable Mercury (Hg)	ug/g	ND	ND	ND	0.050	6488630

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU966			LMU967		
Sampling Date		2019/12/02 14:50			2019/12/04 12:25		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-BH10-SS4 Lab-Dup	RDL	QC Batch	11205379-BH11-SS1	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A				13		6486527
Inorganics							
Conductivity	mS/cm				0.98	0.002	6490365
Available (CaCl2) pH	pH				8.15		6490478
WAD Cyanide (Free)	ug/g	ND	0.01	6488107	ND	0.01	6489807
Chromium (VI)	ug/g				ND	0.2	6489758
Metals							
Hot Water Ext. Boron (B)	ug/g				0.18	0.050	6489138
Acid Extractable Antimony (Sb)	ug/g				ND	0.20	6488630
Acid Extractable Arsenic (As)	ug/g				3.3	1.0	6488630
Acid Extractable Barium (Ba)	ug/g				41	0.50	6488630
Acid Extractable Beryllium (Be)	ug/g				0.25	0.20	6488630
Acid Extractable Boron (B)	ug/g				6.1	5.0	6488630
Acid Extractable Cadmium (Cd)	ug/g				ND	0.10	6488630
Acid Extractable Chromium (Cr)	ug/g				12	1.0	6488630
Acid Extractable Cobalt (Co)	ug/g				6.1	0.10	6488630
Acid Extractable Copper (Cu)	ug/g				11	0.50	6488630
Acid Extractable Lead (Pb)	ug/g				10	1.0	6488630
Acid Extractable Molybdenum (Mo)	ug/g				2.3	0.50	6488630
Acid Extractable Nickel (Ni)	ug/g				12	0.50	6488630
Acid Extractable Selenium (Se)	ug/g				ND	0.50	6488630
Acid Extractable Silver (Ag)	ug/g				ND	0.20	6488630
Acid Extractable Thallium (Tl)	ug/g				0.22	0.050	6488630
Acid Extractable Uranium (U)	ug/g				0.58	0.050	6488630
Acid Extractable Vanadium (V)	ug/g				21	5.0	6488630
Acid Extractable Zinc (Zn)	ug/g				18	5.0	6488630
Acid Extractable Mercury (Hg)	ug/g				ND	0.050	6488630

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU968		LMU969		LMU971		
Sampling Date		2019/12/04 12:40		2019/12/04 08:40		2019/12/04 09:15		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-BH11-SS2	QC Batch	11205379-BH12-SS1	QC Batch	11205379-BH12-SS3	RDL	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	30	6486527	16	6486527	41		6486527
Inorganics								
Conductivity	mS/cm	2.4	6490365	0.88	6490365	2.1	0.002	6490765
Available (CaCl2) pH	pH	7.68	6488097	8.21	6490478	7.36		6490478
WAD Cyanide (Free)	ug/g	ND	6488107	ND	6489807	ND	0.01	6489807
Chromium (VI)	ug/g	ND	6487839	ND	6489758	ND	0.2	6489758
Metals								
Hot Water Ext. Boron (B)	ug/g	0.14	6489138	0.14	6489138	0.14	0.050	6490678
Acid Extractable Antimony (Sb)	ug/g	0.23	6488749	ND	6488630	0.23	0.20	6490680
Acid Extractable Arsenic (As)	ug/g	6.5	6488749	4.7	6488630	7.1	1.0	6490680
Acid Extractable Barium (Ba)	ug/g	88	6488749	21	6488630	140	0.50	6490680
Acid Extractable Beryllium (Be)	ug/g	0.91	6488749	0.23	6488630	0.80	0.20	6490680
Acid Extractable Boron (B)	ug/g	8.2	6488749	6.6	6488630	6.5	5.0	6490680
Acid Extractable Cadmium (Cd)	ug/g	0.15	6488749	ND	6488630	0.20	0.10	6490680
Acid Extractable Chromium (Cr)	ug/g	28	6488749	9.4	6488630	27	1.0	6490680
Acid Extractable Cobalt (Co)	ug/g	20	6488749	5.8	6488630	19	0.10	6490680
Acid Extractable Copper (Cu)	ug/g	35	6488749	9.4	6488630	49	0.50	6490680
Acid Extractable Lead (Pb)	ug/g	21	6488749	15	6488630	16	1.0	6490680
Acid Extractable Molybdenum (Mo)	ug/g	2.1	6488749	4.2	6488630	1.3	0.50	6490680
Acid Extractable Nickel (Ni)	ug/g	38	6488749	13	6488630	41	0.50	6490680
Acid Extractable Selenium (Se)	ug/g	ND	6488749	ND	6488630	ND	0.50	6490680
Acid Extractable Silver (Ag)	ug/g	ND	6488749	ND	6488630	ND	0.20	6490680
Acid Extractable Thallium (Tl)	ug/g	0.17	6488749	0.23	6488630	0.15	0.050	6490680
Acid Extractable Uranium (U)	ug/g	0.63	6488749	0.53	6488630	0.79	0.050	6490680
Acid Extractable Vanadium (V)	ug/g	33	6488749	19	6488630	31	5.0	6490680
Acid Extractable Zinc (Zn)	ug/g	81	6488749	16	6488630	110	5.0	6490680
Acid Extractable Mercury (Hg)	ug/g	ND	6488749	ND	6488630	ND	0.050	6490680

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU972		LMU973		LMU974		
Sampling Date		2019/12/04 09:30		2019/12/04 13:30		2019/12/04 13:40		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-BH12-SS4	QC Batch	11205379-BH13-SS1	QC Batch	11205379-BH13-SS2	RDL	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	26	6486749	42	6486749	57		6486749
Inorganics								
Conductivity	mS/cm	1.2	6490365	10	6490365	3.0	0.002	6490365
Available (CaCl2) pH	pH	7.86	6488097	8.38	6490478	8.11		6488198
WAD Cyanide (Free)	ug/g	ND	6488107	ND	6489807	ND	0.01	6488107
Chromium (VI)	ug/g	ND	6487839	ND	6489758	ND	0.2	6487839
Metals								
Hot Water Ext. Boron (B)	ug/g	0.33	6489138	0.17	6489138	0.11	0.050	6489138
Acid Extractable Antimony (Sb)	ug/g	0.36	6488630	ND	6488630	0.24	0.20	6488630
Acid Extractable Arsenic (As)	ug/g	8.2	6488630	5.5	6488630	6.4	1.0	6488630
Acid Extractable Barium (Ba)	ug/g	170	6488630	28	6488630	87	0.50	6488630
Acid Extractable Beryllium (Be)	ug/g	0.99	6488630	0.24	6488630	0.74	0.20	6488630
Acid Extractable Boron (B)	ug/g	11	6488630	6.6	6488630	6.4	5.0	6488630
Acid Extractable Cadmium (Cd)	ug/g	0.10	6488630	ND	6488630	0.15	0.10	6488630
Acid Extractable Chromium (Cr)	ug/g	32	6488630	12	6488630	24	1.0	6488630
Acid Extractable Cobalt (Co)	ug/g	19	6488630	6.7	6488630	14	0.10	6488630
Acid Extractable Copper (Cu)	ug/g	38	6488630	10	6488630	38	0.50	6488630
Acid Extractable Lead (Pb)	ug/g	25	6488630	16	6488630	14	1.0	6488630
Acid Extractable Molybdenum (Mo)	ug/g	1.6	6488630	4.2	6488630	1.9	0.50	6488630
Acid Extractable Nickel (Ni)	ug/g	43	6488630	14	6488630	34	0.50	6488630
Acid Extractable Selenium (Se)	ug/g	ND	6488630	ND	6488630	ND	0.50	6488630
Acid Extractable Silver (Ag)	ug/g	ND	6488630	ND	6488630	ND	0.20	6488630
Acid Extractable Thallium (Tl)	ug/g	0.18	6488630	0.22	6488630	0.19	0.050	6488630
Acid Extractable Uranium (U)	ug/g	0.93	6488630	0.54	6488630	0.77	0.050	6488630
Acid Extractable Vanadium (V)	ug/g	35	6488630	21	6488630	33	5.0	6488630
Acid Extractable Zinc (Zn)	ug/g	86	6488630	17	6488630	60	5.0	6488630
Acid Extractable Mercury (Hg)	ug/g	ND	6488630	ND	6488630	ND	0.050	6488630

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU975			LMU975		
Sampling Date		2019/12/04 13:50			2019/12/04 13:50		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-BH13-SS3	RDL	QC Batch	11205379-BH13-SS3 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	23		6486749			
Inorganics							
Conductivity	mS/cm	1.3	0.002	6490368			
Available (CaCl2) pH	pH	7.77		6488097			
WAD Cyanide (Free)	ug/g	ND	0.01	6488107			
Chromium (VI)	ug/g	ND	0.2	6487839	ND	0.2	6487839
Metals							
Hot Water Ext. Boron (B)	ug/g	0.38	0.050	6489365			
Acid Extractable Antimony (Sb)	ug/g	0.44	0.20	6488630			
Acid Extractable Arsenic (As)	ug/g	7.7	1.0	6488630			
Acid Extractable Barium (Ba)	ug/g	240	0.50	6488630			
Acid Extractable Beryllium (Be)	ug/g	1.0	0.20	6488630			
Acid Extractable Boron (B)	ug/g	9.7	5.0	6488630			
Acid Extractable Cadmium (Cd)	ug/g	0.32	0.10	6488630			
Acid Extractable Chromium (Cr)	ug/g	31	1.0	6488630			
Acid Extractable Cobalt (Co)	ug/g	22	0.10	6488630			
Acid Extractable Copper (Cu)	ug/g	44	0.50	6488630			
Acid Extractable Lead (Pb)	ug/g	30	1.0	6488630			
Acid Extractable Molybdenum (Mo)	ug/g	1.8	0.50	6488630			
Acid Extractable Nickel (Ni)	ug/g	49	0.50	6488630			
Acid Extractable Selenium (Se)	ug/g	ND	0.50	6488630			
Acid Extractable Silver (Ag)	ug/g	ND	0.20	6488630			
Acid Extractable Thallium (Tl)	ug/g	0.17	0.050	6488630			
Acid Extractable Uranium (U)	ug/g	0.87	0.050	6488630			
Acid Extractable Vanadium (V)	ug/g	35	5.0	6488630			
Acid Extractable Zinc (Zn)	ug/g	120	5.0	6488630			
Acid Extractable Mercury (Hg)	ug/g	ND	0.050	6488630			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU976		LMU977			LMU977	
Sampling Date		2019/12/04 14:20		2019/12/04 14:30			2019/12/04 14:30	
COC Number		748247-02-01		748247-02-01			748247-02-01	
	UNITS	11205379-BH14-SS1	QC Batch	11205379-BH14-SS2	RDL	QC Batch	11205379-BH14-SS2 Lab-Dup	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	1.6	6486749	62		6486749		
Inorganics								
Conductivity	mS/cm	2.3	6490365	4.0	0.002	6490365		
Available (CaCl2) pH	pH	8.19	6488097	7.98		6488198	7.79	6488198
WAD Cyanide (Free)	ug/g	ND	6488107	ND	0.01	6488107		
Chromium (VI)	ug/g	ND	6487839	ND	0.2	6487839		
Metals								
Hot Water Ext. Boron (B)	ug/g	0.17	6489138	0.091	0.050	6489138		
Acid Extractable Antimony (Sb)	ug/g	ND	6488630	ND	0.20	6488630		
Acid Extractable Arsenic (As)	ug/g	5.8	6488630	4.7	1.0	6488630		
Acid Extractable Barium (Ba)	ug/g	25	6488630	110	0.50	6488630		
Acid Extractable Beryllium (Be)	ug/g	0.24	6488630	0.76	0.20	6488630		
Acid Extractable Boron (B)	ug/g	6.4	6488630	8.3	5.0	6488630		
Acid Extractable Cadmium (Cd)	ug/g	ND	6488630	0.17	0.10	6488630		
Acid Extractable Chromium (Cr)	ug/g	9.4	6488630	27	1.0	6488630		
Acid Extractable Cobalt (Co)	ug/g	6.9	6488630	13	0.10	6488630		
Acid Extractable Copper (Cu)	ug/g	8.7	6488630	33	0.50	6488630		
Acid Extractable Lead (Pb)	ug/g	15	6488630	11	1.0	6488630		
Acid Extractable Molybdenum (Mo)	ug/g	5.6	6488630	1.5	0.50	6488630		
Acid Extractable Nickel (Ni)	ug/g	15	6488630	33	0.50	6488630		
Acid Extractable Selenium (Se)	ug/g	ND	6488630	ND	0.50	6488630		
Acid Extractable Silver (Ag)	ug/g	ND	6488630	ND	0.20	6488630		
Acid Extractable Thallium (Tl)	ug/g	0.26	6488630	0.23	0.050	6488630		
Acid Extractable Uranium (U)	ug/g	0.60	6488630	0.68	0.050	6488630		
Acid Extractable Vanadium (V)	ug/g	20	6488630	32	5.0	6488630		
Acid Extractable Zinc (Zn)	ug/g	14	6488630	74	5.0	6488630		
Acid Extractable Mercury (Hg)	ug/g	ND	6488630	ND	0.050	6488630		

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		LMU978	LMU979		
Sampling Date		2019/12/04 14:45	2019/12/04 13:30		
COC Number		748247-02-01	748247-02-01		
	UNITS	11205379-BH14-SS3	11205379-DUP2	RDL	QC Batch
Calculated Parameters					
Sodium Adsorption Ratio	N/A	35	34		6486749
Inorganics					
Conductivity	mS/cm	1.7	8.4	0.002	6490365
Available (CaCl2) pH	pH	7.87	8.34		6490478
WAD Cyanide (Free)	ug/g	ND	ND	0.01	6489807
Chromium (VI)	ug/g	ND	ND	0.2	6489758
Metals					
Hot Water Ext. Boron (B)	ug/g	0.19	0.19	0.050	6489138
Acid Extractable Antimony (Sb)	ug/g	0.38	ND	0.20	6488630
Acid Extractable Arsenic (As)	ug/g	8.4	5.1	1.0	6488630
Acid Extractable Barium (Ba)	ug/g	210	33	0.50	6488630
Acid Extractable Beryllium (Be)	ug/g	1.1	0.25	0.20	6488630
Acid Extractable Boron (B)	ug/g	11	7.1	5.0	6488630
Acid Extractable Cadmium (Cd)	ug/g	0.17	ND	0.10	6488630
Acid Extractable Chromium (Cr)	ug/g	33	11	1.0	6488630
Acid Extractable Cobalt (Co)	ug/g	23	6.8	0.10	6488630
Acid Extractable Copper (Cu)	ug/g	43	11	0.50	6488630
Acid Extractable Lead (Pb)	ug/g	26	15	1.0	6488630
Acid Extractable Molybdenum (Mo)	ug/g	1.9	3.9	0.50	6488630
Acid Extractable Nickel (Ni)	ug/g	50	14	0.50	6488630
Acid Extractable Selenium (Se)	ug/g	ND	ND	0.50	6488630
Acid Extractable Silver (Ag)	ug/g	ND	ND	0.20	6488630
Acid Extractable Thallium (Tl)	ug/g	0.20	0.21	0.050	6488630
Acid Extractable Uranium (U)	ug/g	0.72	0.57	0.050	6488630
Acid Extractable Vanadium (V)	ug/g	36	22	5.0	6488630
Acid Extractable Zinc (Zn)	ug/g	100	18	5.0	6488630
Acid Extractable Mercury (Hg)	ug/g	ND	ND	0.050	6488630

RDL = Reportable Detection Limit
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ND = Not detected

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BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LMU949	LMU952	LMU954		LMU956		
Sampling Date		2019/12/02 09:05	2019/12/04 10:20	2019/12/02 12:50		2019/12/02 11:35		
COC Number		748247-02-01	748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-MW4S-SS1	11205379-MW5-SS2	11205379-BH6-SS1	RDL	11205379-BH8-SS1	RDL	QC Batch
Calculated Parameters								
Chlordane (Total)	ug/g	ND	ND	ND	0.0020	ND	0.010	6486526
o,p-DDD + p,p-DDD	ug/g	ND	ND	ND	0.0020	ND	0.010	6486526
o,p-DDE + p,p-DDE	ug/g	ND	ND	ND	0.0020	ND	0.010	6486526
o,p-DDT + p,p-DDT	ug/g	ND	ND	ND	0.0020	ND	0.010	6486526
Total Endosulfan	ug/g	ND	ND	ND	0.0020	ND	0.010	6486526
Total PCB	ug/g	ND	ND	ND	0.015	ND	0.075	6486526
Pesticides & Herbicides								
Aldrin	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
a-Chlordane	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
g-Chlordane	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
o,p-DDD	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
p,p-DDD	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
o,p-DDE	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
p,p-DDE	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
o,p-DDT	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
p,p-DDT	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Dieldrin	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Lindane	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Endosulfan I (alpha)	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Endosulfan II (beta)	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Endrin	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Heptachlor	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Heptachlor epoxide	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Hexachlorobenzene	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Hexachlorobutadiene	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Hexachloroethane	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Methoxychlor	ug/g	ND	ND	ND	0.0050	ND	0.025	6501747
Aroclor 1242	ug/g	ND	ND	ND	0.015	ND	0.075	6501747
Aroclor 1248	ug/g	ND	ND	ND	0.015	ND	0.075	6501747
Aroclor 1254	ug/g	ND	ND	ND	0.015	ND	0.075	6501747
Aroclor 1260	ug/g	ND	ND	ND	0.015	ND	0.075	6501747

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LMU949	LMU952	LMU954		LMU956		
Sampling Date		2019/12/02 09:05	2019/12/04 10:20	2019/12/02 12:50		2019/12/02 11:35		
COC Number		748247-02-01	748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-MW4S-SS1	11205379-MW5-SS2	11205379-BH6-SS1	RDL	11205379-BH8-SS1	RDL	QC Batch
Surrogate Recovery (%)								
2,4,5,6-Tetrachloro-m-xylene	%	105	98	100		102		6501747
Decachlorobiphenyl	%	105	86	98		119		6501747

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LMU959	LMU961	LMU965		LMU967		
Sampling Date		2019/12/02 09:05	2019/12/03 15:10	2019/12/02 14:40		2019/12/04 12:25		
COC Number		748247-02-01	748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-DUP1	11205379-BH9-SS3	11205379-BH10-SS3	RDL	11205379-BH11-SS1	RDL	QC Batch
Calculated Parameters								
Chlordane (Total)	ug/g	ND	ND	ND	0.0020	ND	0.010	6486526
o,p-DDD + p,p-DDD	ug/g	ND	ND	ND	0.0020	ND	0.010	6486526
o,p-DDE + p,p-DDE	ug/g	ND	ND	0.0091	0.0020	ND	0.010	6486526
o,p-DDT + p,p-DDT	ug/g	ND	ND	0.0024	0.0020	ND	0.010	6486526
Total Endosulfan	ug/g	ND	ND	ND	0.0020	ND	0.010	6486526
Total PCB	ug/g	ND	ND	ND	0.015	ND	0.075	6486526
Pesticides & Herbicides								
Aldrin	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
a-Chlordane	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
g-Chlordane	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
o,p-DDD	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
p,p-DDD	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
o,p-DDE	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
p,p-DDE	ug/g	ND	ND	0.0091	0.0020	ND	0.010	6501747
o,p-DDT	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
p,p-DDT	ug/g	ND	ND	0.0024	0.0020	ND	0.010	6501747
Dieldrin	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Lindane	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Endosulfan I (alpha)	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Endosulfan II (beta)	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Endrin	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Heptachlor	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Heptachlor epoxide	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Hexachlorobenzene	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Hexachlorobutadiene	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Hexachloroethane	ug/g	ND	ND	ND	0.0020	ND	0.010	6501747
Methoxychlor	ug/g	ND	ND	ND	0.0050	ND	0.025	6501747
Aroclor 1242	ug/g	ND	ND	ND	0.015	ND	0.075	6501747
Aroclor 1248	ug/g	ND	ND	ND	0.015	ND	0.075	6501747
Aroclor 1254	ug/g	ND	ND	ND	0.015	ND	0.075	6501747
Aroclor 1260	ug/g	ND	ND	ND	0.015	ND	0.075	6501747

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LMU959	LMU961	LMU965		LMU967		
Sampling Date		2019/12/02 09:05	2019/12/03 15:10	2019/12/02 14:40		2019/12/04 12:25		
COC Number		748247-02-01	748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-DUP1	11205379-BH9-SS3	11205379-BH10-SS3	RDL	11205379-BH11-SS1	RDL	QC Batch
Surrogate Recovery (%)								
2,4,5,6-Tetrachloro-m-xylene	%	99	97	100		125		6501747
Decachlorobiphenyl	%	124	128	128		158 (1)		6501747

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Surrogate recovery was above the upper control limit due to matrix interference. This may represent a high bias in some results. For results that were not detected (ND), this potential bias has no impact.

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BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LMU969		LMU974		LMU976		
Sampling Date		2019/12/04 08:40		2019/12/04 13:40		2019/12/04 14:20		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-BH12-SS1	RDL	11205379-BH13-SS2	RDL	11205379-BH14-SS1	RDL	QC Batch
Calculated Parameters								
Chlordane (Total)	ug/g	ND	0.010	ND	0.0020	ND	0.010	6486526
o,p-DDD + p,p-DDD	ug/g	ND	0.010	ND	0.0020	ND	0.010	6486526
o,p-DDE + p,p-DDE	ug/g	ND	0.010	ND	0.0020	ND	0.010	6486526
o,p-DDT + p,p-DDT	ug/g	ND	0.010	ND	0.0020	ND	0.010	6486526
Total Endosulfan	ug/g	ND	0.010	ND	0.0020	ND	0.010	6486526
Total PCB	ug/g	ND	0.075	ND	0.015	ND	0.075	6486526
Pesticides & Herbicides								
Aldrin	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
a-Chlordane	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
g-Chlordane	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
o,p-DDD	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
p,p-DDD	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
o,p-DDE	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
p,p-DDE	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
o,p-DDT	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
p,p-DDT	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Dieldrin	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Lindane	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Endosulfan I (alpha)	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Endosulfan II (beta)	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Endrin	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Heptachlor	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Heptachlor epoxide	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Hexachlorobenzene	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Hexachlorobutadiene	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Hexachloroethane	ug/g	ND	0.010	ND	0.0020	ND	0.010	6501747
Methoxychlor	ug/g	ND	0.025	ND	0.0050	ND	0.025	6501747
Aroclor 1242	ug/g	ND	0.075	ND	0.015	ND	0.075	6501747
Aroclor 1248	ug/g	ND	0.075	ND	0.015	ND	0.075	6501747
Aroclor 1254	ug/g	ND	0.075	ND	0.015	ND	0.075	6501747
Aroclor 1260	ug/g	ND	0.075	ND	0.015	ND	0.075	6501747

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID		LMU969		LMU974		LMU976		
Sampling Date		2019/12/04 08:40		2019/12/04 13:40		2019/12/04 14:20		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-BH12-SS1	RDL	11205379-BH13-SS2	RDL	11205379-BH14-SS1	RDL	QC Batch
Surrogate Recovery (%)								
2,4,5,6-Tetrachloro-m-xylene	%	129		104		120		6501747
Decachlorobiphenyl	%	128		124		126		6501747

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 PAHS (SOIL)

BV Labs ID		LMU949	LMU952	LMU954		
Sampling Date		2019/12/02 09:05	2019/12/04 10:20	2019/12/02 12:50		
COC Number		748247-02-01	748247-02-01	748247-02-01		
	UNITS	11205379-MW4S-SS1	11205379-MW5-SS2	11205379-BH6-SS1	RDL	QC Batch
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/g	ND	ND	ND	0.0071	6486067
Polyaromatic Hydrocarbons						
Acenaphthene	ug/g	ND	ND	ND	0.0050	6489342
Acenaphthylene	ug/g	ND	ND	ND	0.0050	6489342
Anthracene	ug/g	ND	ND	ND	0.0050	6489342
Benzo(a)anthracene	ug/g	0.0070	ND	ND	0.0050	6489342
Benzo(a)pyrene	ug/g	0.0080	ND	ND	0.0050	6489342
Benzo(b/j)fluoranthene	ug/g	0.013	ND	0.0064	0.0050	6489342
Benzo(g,h,i)perylene	ug/g	0.0088	ND	ND	0.0050	6489342
Benzo(k)fluoranthene	ug/g	ND	ND	ND	0.0050	6489342
Chrysene	ug/g	0.0082	ND	0.0057	0.0050	6489342
Dibenzo(a,h)anthracene	ug/g	ND	ND	ND	0.0050	6489342
Fluoranthene	ug/g	0.016	ND	0.0060	0.0050	6489342
Fluorene	ug/g	ND	ND	ND	0.0050	6489342
Indeno(1,2,3-cd)pyrene	ug/g	0.0072	ND	ND	0.0050	6489342
1-Methylnaphthalene	ug/g	ND	ND	ND	0.0050	6489342
2-Methylnaphthalene	ug/g	ND	ND	ND	0.0050	6489342
Naphthalene	ug/g	ND	ND	ND	0.0050	6489342
Phenanthrene	ug/g	0.0078	ND	0.011	0.0050	6489342
Pyrene	ug/g	0.015	ND	0.0073	0.0050	6489342
Surrogate Recovery (%)						
D10-Anthracene	%	89	93	97		6489342
D14-Terphenyl (FS)	%	96	98	100		6489342
D8-Acenaphthylene	%	86	89	91		6489342

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 PAHS (SOIL)

BV Labs ID		LMU956	LMU959		LMU961	LMU965		
Sampling Date		2019/12/02 11:35	2019/12/02 09:05		2019/12/03 15:10	2019/12/02 14:40		
COC Number		748247-02-01	748247-02-01		748247-02-01	748247-02-01		
	UNITS	11205379-BH8-SS1	11205379-DUP1	RDL	11205379-BH9-SS3	11205379-BH10-SS3	RDL	QC Batch
Calculated Parameters								
Methylnaphthalene, 2-(1-)	ug/g	ND	ND	0.071	ND	ND	0.0071	6486744
Polyaromatic Hydrocarbons								
Acenaphthene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Acenaphthylene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Anthracene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Benzo(a)anthracene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Benzo(a)pyrene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Benzo(b/j)fluoranthene	ug/g	ND	ND	0.050	ND	0.0056	0.0050	6489342
Benzo(g,h,i)perylene	ug/g	ND	ND	0.050	ND	0.0066	0.0050	6489342
Benzo(k)fluoranthene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Chrysene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Dibenzo(a,h)anthracene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Fluoranthene	ug/g	ND	ND	0.050	ND	0.0058	0.0050	6489342
Fluorene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Indeno(1,2,3-cd)pyrene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
1-Methylnaphthalene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
2-Methylnaphthalene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Naphthalene	ug/g	ND	ND	0.050	ND	ND	0.0050	6489342
Phenanthrene	ug/g	ND	ND	0.050	ND	0.0056	0.0050	6489342
Pyrene	ug/g	ND	ND	0.050	ND	0.0060	0.0050	6489342
Surrogate Recovery (%)								
D10-Anthracene	%	112	108		95	94		6489342
D14-Terphenyl (FS)	%	102	102		99	98		6489342
D8-Acenaphthylene	%	101	101		89	89		6489342

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 PAHS (SOIL)

BV Labs ID		LMU967	LMU969		LMU974		
Sampling Date		2019/12/04 12:25	2019/12/04 08:40		2019/12/04 13:40		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-BH11-SS1	11205379-BH12-SS1	RDL	11205379-BH13-SS2	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/g	ND	ND	0.071	ND	0.0071	6486744
Polyaromatic Hydrocarbons							
Acenaphthene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Acenaphthylene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Anthracene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Benzo(a)anthracene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Benzo(a)pyrene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Benzo(b/j)fluoranthene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Benzo(g,h,i)perylene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Benzo(k)fluoranthene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Chrysene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Dibenzo(a,h)anthracene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Fluoranthene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Fluorene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Indeno(1,2,3-cd)pyrene	ug/g	ND	ND	0.050	ND	0.0050	6489342
1-Methylnaphthalene	ug/g	ND	ND	0.050	ND	0.0050	6489342
2-Methylnaphthalene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Naphthalene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Phenanthrene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Pyrene	ug/g	ND	ND	0.050	ND	0.0050	6489342
Surrogate Recovery (%)							
D10-Anthracene	%	120	115		94		6489342
D14-Terphenyl (FS)	%	112	105		96		6489342
D8-Acenaphthylene	%	115	108		89		6489342

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 PAHS (SOIL)

BV Labs ID		LMU976		
Sampling Date		2019/12/04 14:20		
COC Number		748247-02-01		
	UNITS	11205379-BH14-SS1	RDL	QC Batch
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	ND	0.071	6486744
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	ND	0.050	6489342
Acenaphthylene	ug/g	ND	0.050	6489342
Anthracene	ug/g	ND	0.050	6489342
Benzo(a)anthracene	ug/g	ND	0.050	6489342
Benzo(a)pyrene	ug/g	ND	0.050	6489342
Benzo(b/j)fluoranthene	ug/g	ND	0.050	6489342
Benzo(g,h,i)perylene	ug/g	ND	0.050	6489342
Benzo(k)fluoranthene	ug/g	ND	0.050	6489342
Chrysene	ug/g	ND	0.050	6489342
Dibenzo(a,h)anthracene	ug/g	ND	0.050	6489342
Fluoranthene	ug/g	ND	0.050	6489342
Fluorene	ug/g	ND	0.050	6489342
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.050	6489342
1-Methylnaphthalene	ug/g	ND	0.050	6489342
2-Methylnaphthalene	ug/g	ND	0.050	6489342
Naphthalene	ug/g	ND	0.050	6489342
Phenanthrene	ug/g	ND	0.050	6489342
Pyrene	ug/g	ND	0.050	6489342
Surrogate Recovery (%)				
D10-Anthracene	%	108		6489342
D14-Terphenyl (FS)	%	105		6489342
D8-Acenaphthylene	%	106		6489342

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU949		LMU950		
Sampling Date		2019/12/02 09:05		2019/12/02 09:15		
COC Number		748247-02-01		748247-02-01		
	UNITS	11205379-MW4S-SS1	QC Batch	11205379-MW4S-SS2	RDL	QC Batch
Inorganics						
Moisture	%	21	6488466	19	1.0	6488612
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/g	ND	6486068	ND	0.050	6486068
Volatile Organics						
Acetone (2-Propanone)	ug/g	ND	6487911	ND	0.50	6487911
Benzene	ug/g	ND	6487911	ND	0.020	6487911
Bromodichloromethane	ug/g	ND	6487911	ND	0.050	6487911
Bromoform	ug/g	ND	6487911	ND	0.050	6487911
Bromomethane	ug/g	ND	6487911	ND	0.050	6487911
Carbon Tetrachloride	ug/g	ND	6487911	ND	0.050	6487911
Chlorobenzene	ug/g	ND	6487911	ND	0.050	6487911
Chloroform	ug/g	ND	6487911	ND	0.050	6487911
Dibromochloromethane	ug/g	ND	6487911	ND	0.050	6487911
1,2-Dichlorobenzene	ug/g	ND	6487911	ND	0.050	6487911
1,3-Dichlorobenzene	ug/g	ND	6487911	ND	0.050	6487911
1,4-Dichlorobenzene	ug/g	ND	6487911	ND	0.050	6487911
Dichlorodifluoromethane (FREON 12)	ug/g	ND	6487911	ND	0.050	6487911
1,1-Dichloroethane	ug/g	ND	6487911	ND	0.050	6487911
1,2-Dichloroethane	ug/g	ND	6487911	ND	0.050	6487911
1,1-Dichloroethylene	ug/g	ND	6487911	ND	0.050	6487911
cis-1,2-Dichloroethylene	ug/g	ND	6487911	ND	0.050	6487911
trans-1,2-Dichloroethylene	ug/g	ND	6487911	ND	0.050	6487911
1,2-Dichloropropane	ug/g	ND	6487911	ND	0.050	6487911
cis-1,3-Dichloropropene	ug/g	ND	6487911	ND	0.030	6487911
trans-1,3-Dichloropropene	ug/g	ND	6487911	ND	0.040	6487911
Ethylbenzene	ug/g	ND	6487911	ND	0.020	6487911
Ethylene Dibromide	ug/g	ND	6487911	ND	0.050	6487911
Hexane	ug/g	ND	6487911	ND	0.050	6487911
Methylene Chloride(Dichloromethane)	ug/g	ND	6487911	ND	0.050	6487911
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	6487911	ND	0.50	6487911
Methyl Isobutyl Ketone	ug/g	ND	6487911	ND	0.50	6487911
Methyl t-butyl ether (MTBE)	ug/g	ND	6487911	ND	0.050	6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU949		LMU950		
Sampling Date		2019/12/02 09:05		2019/12/02 09:15		
COC Number		748247-02-01		748247-02-01		
	UNITS	11205379-MW4S-SS1	QC Batch	11205379-MW4S-SS2	RDL	QC Batch
Styrene	ug/g	ND	6487911	ND	0.050	6487911
1,1,1,2-Tetrachloroethane	ug/g	ND	6487911	ND	0.050	6487911
1,1,2,2-Tetrachloroethane	ug/g	ND	6487911	ND	0.050	6487911
Tetrachloroethylene	ug/g	ND	6487911	ND	0.050	6487911
Toluene	ug/g	ND	6487911	ND	0.020	6487911
1,1,1-Trichloroethane	ug/g	ND	6487911	ND	0.050	6487911
1,1,2-Trichloroethane	ug/g	ND	6487911	ND	0.050	6487911
Trichloroethylene	ug/g	ND	6487911	ND	0.050	6487911
Trichlorofluoromethane (FREON 11)	ug/g	ND	6487911	ND	0.050	6487911
Vinyl Chloride	ug/g	ND	6487911	ND	0.020	6487911
p+m-Xylene	ug/g	ND	6487911	ND	0.020	6487911
o-Xylene	ug/g	ND	6487911	ND	0.020	6487911
Total Xylenes	ug/g	ND	6487911	ND	0.020	6487911
F1 (C6-C10)	ug/g	ND	6487911	ND	10	6487911
F1 (C6-C10) - BTEX	ug/g	ND	6487911	ND	10	6487911
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	ND	6489351	ND	10	6489351
F3 (C16-C34 Hydrocarbons)	ug/g	ND	6489351	ND	50	6489351
F4 (C34-C50 Hydrocarbons)	ug/g	ND	6489351	ND	50	6489351
Reached Baseline at C50	ug/g	Yes	6489351	Yes		6489351
Surrogate Recovery (%)						
o-Terphenyl	%	94	6489351	96		6489351
4-Bromofluorobenzene	%	98	6487911	96		6487911
D10-o-Xylene	%	105	6487911	117		6487911
D4-1,2-Dichloroethane	%	106	6487911	104		6487911
D8-Toluene	%	94	6487911	95		6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU950			LMU951		
Sampling Date		2019/12/02 09:15			2019/12/04 10:10		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-MW4S-SS2 Lab-Dup	RDL	QC Batch	11205379-MW5-SS1	RDL	QC Batch
Inorganics							
Moisture	%				6.0	1.0	6488466
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g				ND	0.050	6486068
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	0.50	6487911	ND	0.50	6487911
Benzene	ug/g	ND	0.020	6487911	ND	0.020	6487911
Bromodichloromethane	ug/g	ND	0.050	6487911	ND	0.050	6487911
Bromoform	ug/g	ND	0.050	6487911	ND	0.050	6487911
Bromomethane	ug/g	ND	0.050	6487911	ND	0.050	6487911
Carbon Tetrachloride	ug/g	ND	0.050	6487911	ND	0.050	6487911
Chlorobenzene	ug/g	ND	0.050	6487911	ND	0.050	6487911
Chloroform	ug/g	ND	0.050	6487911	ND	0.050	6487911
Dibromochloromethane	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,2-Dichlorobenzene	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,3-Dichlorobenzene	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,4-Dichlorobenzene	ug/g	ND	0.050	6487911	ND	0.050	6487911
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,1-Dichloroethane	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,2-Dichloroethane	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,1-Dichloroethylene	ug/g	ND	0.050	6487911	ND	0.050	6487911
cis-1,2-Dichloroethylene	ug/g	ND	0.050	6487911	ND	0.050	6487911
trans-1,2-Dichloroethylene	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,2-Dichloropropane	ug/g	ND	0.050	6487911	ND	0.050	6487911
cis-1,3-Dichloropropene	ug/g	ND	0.030	6487911	ND	0.030	6487911
trans-1,3-Dichloropropene	ug/g	ND	0.040	6487911	ND	0.040	6487911
Ethylbenzene	ug/g	ND	0.020	6487911	ND	0.020	6487911
Ethylene Dibromide	ug/g	ND	0.050	6487911	ND	0.050	6487911
Hexane	ug/g	ND	0.050	6487911	ND	0.050	6487911
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	6487911	ND	0.050	6487911
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	6487911	ND	0.50	6487911
Methyl Isobutyl Ketone	ug/g	ND	0.50	6487911	ND	0.50	6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU950			LMU951		
Sampling Date		2019/12/02 09:15			2019/12/04 10:10		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-MW4S-SS2 Lab-Dup	RDL	QC Batch	11205379-MW5-SS1	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	6487911	ND	0.050	6487911
Styrene	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	6487911	ND	0.050	6487911
Tetrachloroethylene	ug/g	ND	0.050	6487911	ND	0.050	6487911
Toluene	ug/g	ND	0.020	6487911	0.025	0.020	6487911
1,1,1-Trichloroethane	ug/g	ND	0.050	6487911	ND	0.050	6487911
1,1,2-Trichloroethane	ug/g	ND	0.050	6487911	ND	0.050	6487911
Trichloroethylene	ug/g	ND	0.050	6487911	ND	0.050	6487911
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	6487911	ND	0.050	6487911
Vinyl Chloride	ug/g	ND	0.020	6487911	ND	0.020	6487911
p+m-Xylene	ug/g	ND	0.020	6487911	0.026	0.020	6487911
o-Xylene	ug/g	ND	0.020	6487911	ND	0.020	6487911
Total Xylenes	ug/g	ND	0.020	6487911	0.026	0.020	6487911
F1 (C6-C10)	ug/g	ND	10	6487911	ND	10	6487911
F1 (C6-C10) - BTEX	ug/g	ND	10	6487911	ND	10	6487911
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g				ND	10	6489351
F3 (C16-C34 Hydrocarbons)	ug/g				200	50	6489351
F4 (C34-C50 Hydrocarbons)	ug/g				1000	50	6489351
Reached Baseline at C50	ug/g				No		6489351
Surrogate Recovery (%)							
o-Terphenyl	%				98		6489351
4-Bromofluorobenzene	%	94		6487911	99		6487911
D10-o-Xylene	%	113		6487911	101		6487911
D4-1,2-Dichloroethane	%	103		6487911	106		6487911
D8-Toluene	%	97		6487911	95		6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU952	LMU953		LMU954		
Sampling Date		2019/12/04 10:20	2019/12/04 10:30		2019/12/02 12:50		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-MW5-SS2	11205379-MW5-SS3	QC Batch	11205379-BH6-SS1	RDL	QC Batch
Inorganics							
Moisture	%	13	6.3	6488612	4.4	1.0	6488612
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	6486068	ND	0.050	6486068
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	6487911	ND	0.50	6487911
Benzene	ug/g	ND	ND	6487911	ND	0.020	6487911
Bromodichloromethane	ug/g	ND	ND	6487911	ND	0.050	6487911
Bromoform	ug/g	ND	ND	6487911	ND	0.050	6487911
Bromomethane	ug/g	ND	ND	6487911	ND	0.050	6487911
Carbon Tetrachloride	ug/g	ND	ND	6487911	ND	0.050	6487911
Chlorobenzene	ug/g	ND	ND	6487911	ND	0.050	6487911
Chloroform	ug/g	ND	ND	6487911	ND	0.050	6487911
Dibromochloromethane	ug/g	ND	ND	6487911	ND	0.050	6487911
1,2-Dichlorobenzene	ug/g	ND	ND	6487911	ND	0.050	6487911
1,3-Dichlorobenzene	ug/g	ND	ND	6487911	ND	0.050	6487911
1,4-Dichlorobenzene	ug/g	ND	ND	6487911	ND	0.050	6487911
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	6487911	ND	0.050	6487911
1,1-Dichloroethane	ug/g	ND	ND	6487911	ND	0.050	6487911
1,2-Dichloroethane	ug/g	ND	ND	6487911	ND	0.050	6487911
1,1-Dichloroethylene	ug/g	ND	ND	6487911	ND	0.050	6487911
cis-1,2-Dichloroethylene	ug/g	ND	ND	6487911	ND	0.050	6487911
trans-1,2-Dichloroethylene	ug/g	ND	ND	6487911	ND	0.050	6487911
1,2-Dichloropropane	ug/g	ND	ND	6487911	ND	0.050	6487911
cis-1,3-Dichloropropene	ug/g	ND	ND	6487911	ND	0.030	6487911
trans-1,3-Dichloropropene	ug/g	ND	ND	6487911	ND	0.040	6487911
Ethylbenzene	ug/g	ND	ND	6487911	ND	0.020	6487911
Ethylene Dibromide	ug/g	ND	ND	6487911	ND	0.050	6487911
Hexane	ug/g	ND	0.41	6487911	0.091	0.050	6487911
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	6487911	ND	0.050	6487911
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	6487911	ND	0.50	6487911
Methyl Isobutyl Ketone	ug/g	ND	ND	6487911	ND	0.50	6487911
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	6487911	ND	0.050	6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU952	LMU953		LMU954		
Sampling Date		2019/12/04 10:20	2019/12/04 10:30		2019/12/02 12:50		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-MW5-SS2	11205379-MW5-SS3	QC Batch	11205379-BH6-SS1	RDL	QC Batch
Styrene	ug/g	ND	ND	6487911	ND	0.050	6487911
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	6487911	ND	0.050	6487911
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	6487911	ND	0.050	6487911
Tetrachloroethylene	ug/g	ND	ND	6487911	ND	0.050	6487911
Toluene	ug/g	ND	ND	6487911	0.027	0.020	6487911
1,1,1-Trichloroethane	ug/g	ND	ND	6487911	ND	0.050	6487911
1,1,2-Trichloroethane	ug/g	ND	ND	6487911	ND	0.050	6487911
Trichloroethylene	ug/g	ND	ND	6487911	ND	0.050	6487911
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	6487911	ND	0.050	6487911
Vinyl Chloride	ug/g	ND	ND	6487911	ND	0.020	6487911
p+m-Xylene	ug/g	ND	0.022	6487911	0.025	0.020	6487911
o-Xylene	ug/g	ND	ND	6487911	ND	0.020	6487911
Total Xylenes	ug/g	ND	0.022	6487911	0.025	0.020	6487911
F1 (C6-C10)	ug/g	ND	28	6487911	ND	10	6487911
F1 (C6-C10) - BTEX	ug/g	ND	28	6487911	ND	10	6487911
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	ND	55	6489351	ND	10	6489540
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	6489351	ND	50	6489540
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	6489351	ND	50	6489540
Reached Baseline at C50	ug/g	Yes	Yes	6489351	Yes		6489540
Surrogate Recovery (%)							
o-Terphenyl	%	97	94	6489351	93		6489540
4-Bromofluorobenzene	%	96	96	6487911	96		6487911
D10-o-Xylene	%	105	106	6487911	105		6487911
D4-1,2-Dichloroethane	%	108	102	6487911	106		6487911
D8-Toluene	%	95	97	6487911	97		6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU955		LMU956		LMU957		
Sampling Date		2019/12/02 13:05		2019/12/02 11:35		2019/12/02 11:40		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-BH6-SS2	QC Batch	11205379-BH8-SS1	QC Batch	11205379-BH8-SS2	RDL	QC Batch
Inorganics								
Moisture	%	10	6488752	12	6488612	14	1.0	6488466
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	ND	6486068	ND	6486068	ND	0.050	6486068
Volatile Organics								
Acetone (2-Propanone)	ug/g	ND	6487911	ND	6487911	ND	0.50	6487911
Benzene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
Bromodichloromethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Bromoform	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Bromomethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Carbon Tetrachloride	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Chlorobenzene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Chloroform	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Dibromochloromethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,2-Dichlorobenzene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,3-Dichlorobenzene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,4-Dichlorobenzene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Dichlorodifluoromethane (FREON 12)	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1-Dichloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,2-Dichloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1-Dichloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
cis-1,2-Dichloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
trans-1,2-Dichloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,2-Dichloropropane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
cis-1,3-Dichloropropene	ug/g	ND	6487911	ND	6487911	ND	0.030	6487911
trans-1,3-Dichloropropene	ug/g	ND	6487911	ND	6487911	ND	0.040	6487911
Ethylbenzene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
Ethylene Dibromide	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Hexane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Methylene Chloride(Dichloromethane)	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	6487911	ND	6487911	ND	0.50	6487911
Methyl Isobutyl Ketone	ug/g	ND	6487911	ND	6487911	ND	0.50	6487911
Methyl t-butyl ether (MTBE)	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU955		LMU956		LMU957		
Sampling Date		2019/12/02 13:05		2019/12/02 11:35		2019/12/02 11:40		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-BH6-SS2	QC Batch	11205379-BH8-SS1	QC Batch	11205379-BH8-SS2	RDL	QC Batch
Styrene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1,1,2-Tetrachloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1,2,2-Tetrachloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Tetrachloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Toluene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
1,1,1-Trichloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1,2-Trichloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Trichloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Trichlorofluoromethane (FREON 11)	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Vinyl Chloride	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
p+m-Xylene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
o-Xylene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
Total Xylenes	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
F1 (C6-C10)	ug/g	ND	6487911	ND	6487911	ND	10	6487911
F1 (C6-C10) - BTEX	ug/g	ND	6487911	ND	6487911	ND	10	6487911
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	6489540	ND	6489351	ND	10	6489351
F3 (C16-C34 Hydrocarbons)	ug/g	ND	6489540	70	6489351	ND	50	6489351
F4 (C34-C50 Hydrocarbons)	ug/g	ND	6489540	270	6489351	ND	50	6489351
Reached Baseline at C50	ug/g	Yes	6489540	No	6489351	Yes		6489351
Surrogate Recovery (%)								
o-Terphenyl	%	93	6489540	99	6489351	94		6489351
4-Bromofluorobenzene	%	94	6487911	96	6487911	95		6487911
D10-o-Xylene	%	99	6487911	99	6487911	106		6487911
D4-1,2-Dichloroethane	%	105	6487911	109	6487911	106		6487911
D8-Toluene	%	97	6487911	96	6487911	96		6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU958		LMU959	LMU961		
Sampling Date		2019/12/03 14:45		2019/12/02 09:05	2019/12/03 15:10		
COC Number		748247-02-01		748247-02-01	748247-02-01		
	UNITS	11205379-BH9-SS1	QC Batch	11205379-DUP1	11205379-BH9-SS3	RDL	QC Batch
Inorganics							
Moisture	%	3.4	6488612	23	16	1.0	6488466
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	ND	6486068	ND	ND	0.050	6486068
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	6487911	ND	ND	0.50	6487911
Benzene	ug/g	ND	6487911	ND	ND	0.020	6487911
Bromodichloromethane	ug/g	ND	6487911	ND	ND	0.050	6487911
Bromoform	ug/g	ND	6487911	ND	ND	0.050	6487911
Bromomethane	ug/g	ND	6487911	ND	ND	0.050	6487911
Carbon Tetrachloride	ug/g	ND	6487911	ND	ND	0.050	6487911
Chlorobenzene	ug/g	ND	6487911	ND	ND	0.050	6487911
Chloroform	ug/g	ND	6487911	ND	ND	0.050	6487911
Dibromochloromethane	ug/g	ND	6487911	ND	ND	0.050	6487911
1,2-Dichlorobenzene	ug/g	ND	6487911	ND	ND	0.050	6487911
1,3-Dichlorobenzene	ug/g	ND	6487911	ND	ND	0.050	6487911
1,4-Dichlorobenzene	ug/g	ND	6487911	ND	ND	0.050	6487911
Dichlorodifluoromethane (FREON 12)	ug/g	ND	6487911	ND	ND	0.050	6487911
1,1-Dichloroethane	ug/g	ND	6487911	ND	ND	0.050	6487911
1,2-Dichloroethane	ug/g	ND	6487911	ND	ND	0.050	6487911
1,1-Dichloroethylene	ug/g	ND	6487911	ND	ND	0.050	6487911
cis-1,2-Dichloroethylene	ug/g	ND	6487911	ND	ND	0.050	6487911
trans-1,2-Dichloroethylene	ug/g	ND	6487911	ND	ND	0.050	6487911
1,2-Dichloropropane	ug/g	ND	6487911	ND	ND	0.050	6487911
cis-1,3-Dichloropropene	ug/g	ND	6487911	ND	ND	0.030	6487911
trans-1,3-Dichloropropene	ug/g	ND	6487911	ND	ND	0.040	6487911
Ethylbenzene	ug/g	ND	6487911	ND	ND	0.020	6487911
Ethylene Dibromide	ug/g	ND	6487911	ND	ND	0.050	6487911
Hexane	ug/g	0.11	6487911	ND	ND	0.050	6487911
Methylene Chloride(Dichloromethane)	ug/g	ND	6487911	ND	ND	0.050	6487911
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	6487911	ND	ND	0.50	6487911
Methyl Isobutyl Ketone	ug/g	ND	6487911	ND	ND	0.50	6487911
Methyl t-butyl ether (MTBE)	ug/g	ND	6487911	ND	ND	0.050	6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU958		LMU959	LMU961		
Sampling Date		2019/12/03 14:45		2019/12/02 09:05	2019/12/03 15:10		
COC Number		748247-02-01		748247-02-01	748247-02-01		
	UNITS	11205379-BH9-SS1	QC Batch	11205379-DUP1	11205379-BH9-SS3	RDL	QC Batch
Styrene	ug/g	ND	6487911	ND	ND	0.050	6487911
1,1,1,2-Tetrachloroethane	ug/g	ND	6487911	ND	ND	0.050	6487911
1,1,2,2-Tetrachloroethane	ug/g	ND	6487911	ND	ND	0.050	6487911
Tetrachloroethylene	ug/g	ND	6487911	ND	ND	0.050	6487911
Toluene	ug/g	0.027	6487911	ND	ND	0.020	6487911
1,1,1-Trichloroethane	ug/g	ND	6487911	ND	ND	0.050	6487911
1,1,2-Trichloroethane	ug/g	ND	6487911	ND	ND	0.050	6487911
Trichloroethylene	ug/g	ND	6487911	ND	ND	0.050	6487911
Trichlorofluoromethane (FREON 11)	ug/g	ND	6487911	ND	ND	0.050	6487911
Vinyl Chloride	ug/g	ND	6487911	ND	ND	0.020	6487911
p+m-Xylene	ug/g	0.033	6487911	ND	ND	0.020	6487911
o-Xylene	ug/g	ND	6487911	ND	ND	0.020	6487911
Total Xylenes	ug/g	0.033	6487911	ND	ND	0.020	6487911
F1 (C6-C10)	ug/g	ND	6487911	ND	ND	10	6487911
F1 (C6-C10) - BTEX	ug/g	ND	6487911	ND	ND	10	6487911
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	ND	6489351	ND	ND	10	6489351
F3 (C16-C34 Hydrocarbons)	ug/g	ND	6489351	55	ND	50	6489351
F4 (C34-C50 Hydrocarbons)	ug/g	ND	6489351	ND	ND	50	6489351
Reached Baseline at C50	ug/g	Yes	6489351	Yes	Yes		6489351
Surrogate Recovery (%)							
o-Terphenyl	%	97	6489351	97	96		6489351
4-Bromofluorobenzene	%	93	6487911	94	96		6487911
D10-o-Xylene	%	100	6487911	106	106		6487911
D4-1,2-Dichloroethane	%	105	6487911	106	106		6487911
D8-Toluene	%	97	6487911	97	96		6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU962			LMU962		
Sampling Date		2019/12/03 15:20			2019/12/03 15:20		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-BH9-SS4	RDL	QC Batch	11205379-BH9-SS4 Lab-Dup	RDL	QC Batch
Inorganics							
Moisture	%	4.4	1.0	6488466			
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.050	6486745			
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	0.50	6487911			
Benzene	ug/g	ND	0.020	6487911			
Bromodichloromethane	ug/g	ND	0.050	6487911			
Bromoform	ug/g	ND	0.050	6487911			
Bromomethane	ug/g	ND	0.050	6487911			
Carbon Tetrachloride	ug/g	ND	0.050	6487911			
Chlorobenzene	ug/g	ND	0.050	6487911			
Chloroform	ug/g	ND	0.050	6487911			
Dibromochloromethane	ug/g	ND	0.050	6487911			
1,2-Dichlorobenzene	ug/g	ND	0.050	6487911			
1,3-Dichlorobenzene	ug/g	ND	0.050	6487911			
1,4-Dichlorobenzene	ug/g	ND	0.050	6487911			
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	6487911			
1,1-Dichloroethane	ug/g	ND	0.050	6487911			
1,2-Dichloroethane	ug/g	ND	0.050	6487911			
1,1-Dichloroethylene	ug/g	ND	0.050	6487911			
cis-1,2-Dichloroethylene	ug/g	ND	0.050	6487911			
trans-1,2-Dichloroethylene	ug/g	ND	0.050	6487911			
1,2-Dichloropropane	ug/g	ND	0.050	6487911			
cis-1,3-Dichloropropene	ug/g	ND	0.030	6487911			
trans-1,3-Dichloropropene	ug/g	ND	0.040	6487911			
Ethylbenzene	ug/g	ND	0.020	6487911			
Ethylene Dibromide	ug/g	ND	0.050	6487911			
Hexane	ug/g	0.43	0.050	6487911			
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	6487911			
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	6487911			
Methyl Isobutyl Ketone	ug/g	ND	0.50	6487911			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU962			LMU962		
Sampling Date		2019/12/03 15:20			2019/12/03 15:20		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-BH9-SS4	RDL	QC Batch	11205379-BH9-SS4 Lab-Dup	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	6487911			
Styrene	ug/g	ND	0.050	6487911			
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	6487911			
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	6487911			
Tetrachloroethylene	ug/g	ND	0.050	6487911			
Toluene	ug/g	ND	0.020	6487911			
1,1,1-Trichloroethane	ug/g	ND	0.050	6487911			
1,1,2-Trichloroethane	ug/g	ND	0.050	6487911			
Trichloroethylene	ug/g	ND	0.050	6487911			
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	6487911			
Vinyl Chloride	ug/g	ND	0.020	6487911			
p+m-Xylene	ug/g	ND	0.020	6487911			
o-Xylene	ug/g	ND	0.020	6487911			
Total Xylenes	ug/g	ND	0.020	6487911			
F1 (C6-C10)	ug/g	52	10	6487911			
F1 (C6-C10) - BTEX	ug/g	52	10	6487911			
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	83	10	6489351	74	10	6489351
F3 (C16-C34 Hydrocarbons)	ug/g	55	50	6489351	53	50	6489351
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	6489351	ND	50	6489351
Reached Baseline at C50	ug/g	Yes		6489351	Yes		6489351
Surrogate Recovery (%)							
o-Terphenyl	%	101		6489351	101		6489351
4-Bromofluorobenzene	%	95		6487911			
D10-o-Xylene	%	108		6487911			
D4-1,2-Dichloroethane	%	102		6487911			
D8-Toluene	%	97		6487911			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU963			LMU965	LMU966		
Sampling Date		2019/12/02 14:20			2019/12/02 14:40	2019/12/02 14:50		
COC Number		748247-02-01			748247-02-01	748247-02-01		
	UNITS	11205379-BH10-SS1	RDL	QC Batch	11205379-BH10-SS3	11205379-BH10-SS4	RDL	QC Batch
Inorganics								
Moisture	%	4.2	1.0	6488612	15	5.5	1.0	6488466
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.050	6486745	ND	ND	0.050	6486745
Volatile Organics								
Acetone (2-Propanone)	ug/g	ND (1)	0.60	6487911	ND	ND	0.50	6487911
Benzene	ug/g	ND	0.020	6487911	ND	ND	0.020	6487911
Bromodichloromethane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Bromoform	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Bromomethane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Carbon Tetrachloride	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Chlorobenzene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Chloroform	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Dibromochloromethane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,2-Dichlorobenzene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,3-Dichlorobenzene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,4-Dichlorobenzene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,1-Dichloroethane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,2-Dichloroethane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,1-Dichloroethylene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
cis-1,2-Dichloroethylene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
trans-1,2-Dichloroethylene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,2-Dichloropropane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
cis-1,3-Dichloropropene	ug/g	ND	0.030	6487911	ND	ND	0.030	6487911
trans-1,3-Dichloropropene	ug/g	ND	0.040	6487911	ND	ND	0.040	6487911
Ethylbenzene	ug/g	ND	0.020	6487911	ND	ND	0.020	6487911
Ethylene Dibromide	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Hexane	ug/g	0.24	0.050	6487911	ND	0.086	0.050	6487911
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	6487911	ND	ND	0.50	6487911
Methyl Isobutyl Ketone	ug/g	ND	0.50	6487911	ND	ND	0.50	6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected
(1) The detection limit was raised due to matrix interference.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU963			LMU965	LMU966		
Sampling Date		2019/12/02 14:20			2019/12/02 14:40	2019/12/02 14:50		
COC Number		748247-02-01			748247-02-01	748247-02-01		
	UNITS	11205379-BH10-SS1	RDL	QC Batch	11205379-BH10-SS3	11205379-BH10-SS4	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Styrene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Tetrachloroethylene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Toluene	ug/g	0.065	0.020	6487911	ND	ND	0.020	6487911
1,1,1-Trichloroethane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
1,1,2-Trichloroethane	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Trichloroethylene	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	6487911	ND	ND	0.050	6487911
Vinyl Chloride	ug/g	ND	0.020	6487911	ND	ND	0.020	6487911
p+m-Xylene	ug/g	0.059	0.020	6487911	ND	0.023	0.020	6487911
o-Xylene	ug/g	ND	0.020	6487911	ND	ND	0.020	6487911
Total Xylenes	ug/g	0.059	0.020	6487911	ND	0.023	0.020	6487911
F1 (C6-C10)	ug/g	ND	10	6487911	ND	ND	10	6487911
F1 (C6-C10) - BTEX	ug/g	ND	10	6487911	ND	ND	10	6487911
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	6489351	ND	49	10	6489351
F3 (C16-C34 Hydrocarbons)	ug/g	ND	50	6489351	170	210	50	6489351
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	6489351	660	750	50	6489351
Reached Baseline at C50	ug/g	Yes		6489351	No	No		6489351
Surrogate Recovery (%)								
o-Terphenyl	%	94		6489351	100	96		6489351
4-Bromofluorobenzene	%	96		6487911	94	93		6487911
D10-o-Xylene	%	101		6487911	98	93		6487911
D4-1,2-Dichloroethane	%	106		6487911	106	106		6487911
D8-Toluene	%	96		6487911	96	95		6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU967		LMU968		LMU969		
Sampling Date		2019/12/04 12:25		2019/12/04 12:40		2019/12/04 08:40		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-BH11-SS1	QC Batch	11205379-BH11-SS2	QC Batch	11205379-BH12-SS1	RDL	QC Batch
Inorganics								
Moisture	%	6.6	6488752	7.9	6488466	5.7	1.0	6488752
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	ND	6486745	ND	6486745	ND	0.050	6486745
Volatile Organics								
Acetone (2-Propanone)	ug/g	ND	6487911	ND	6487911	ND	0.50	6487911
Benzene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
Bromodichloromethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Bromoform	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Bromomethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Carbon Tetrachloride	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Chlorobenzene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Chloroform	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Dibromochloromethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,2-Dichlorobenzene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,3-Dichlorobenzene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,4-Dichlorobenzene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Dichlorodifluoromethane (FREON 12)	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1-Dichloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,2-Dichloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1-Dichloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
cis-1,2-Dichloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
trans-1,2-Dichloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,2-Dichloropropane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
cis-1,3-Dichloropropene	ug/g	ND	6487911	ND	6487911	ND	0.030	6487911
trans-1,3-Dichloropropene	ug/g	ND	6487911	ND	6487911	ND	0.040	6487911
Ethylbenzene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
Ethylene Dibromide	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Hexane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Methylene Chloride(Dichloromethane)	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	6487911	ND	6487911	ND	0.50	6487911
Methyl Isobutyl Ketone	ug/g	ND	6487911	ND	6487911	ND	0.50	6487911
Methyl t-butyl ether (MTBE)	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU967		LMU968		LMU969		
Sampling Date		2019/12/04 12:25		2019/12/04 12:40		2019/12/04 08:40		
COC Number		748247-02-01		748247-02-01		748247-02-01		
	UNITS	11205379-BH11-SS1	QC Batch	11205379-BH11-SS2	QC Batch	11205379-BH12-SS1	RDL	QC Batch
Styrene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1,1,2-Tetrachloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1,2,2-Tetrachloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Tetrachloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Toluene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
1,1,1-Trichloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
1,1,2-Trichloroethane	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Trichloroethylene	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Trichlorofluoromethane (FREON 11)	ug/g	ND	6487911	ND	6487911	ND	0.050	6487911
Vinyl Chloride	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
p+m-Xylene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
o-Xylene	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
Total Xylenes	ug/g	ND	6487911	ND	6487911	ND	0.020	6487911
F1 (C6-C10)	ug/g	ND	6487911	ND	6487911	ND	10	6487911
F1 (C6-C10) - BTEX	ug/g	ND	6487911	ND	6487911	ND	10	6487911
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	6489540	32	6489351	ND	10	6489540
F3 (C16-C34 Hydrocarbons)	ug/g	91	6489540	ND	6489351	140	50	6489540
F4 (C34-C50 Hydrocarbons)	ug/g	420	6489540	100	6489351	520	50	6489540
Reached Baseline at C50	ug/g	No	6489540	No	6489351	No		6489540
Surrogate Recovery (%)								
o-Terphenyl	%	90	6489540	99	6489351	91		6489540
4-Bromofluorobenzene	%	97	6487911	94	6487911	95		6487911
D10-o-Xylene	%	100	6487911	102	6487911	89		6487911
D4-1,2-Dichloroethane	%	109	6487911	105	6487911	109		6487911
D8-Toluene	%	95	6487911	95	6487911	92		6487911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU971		LMU972		
Sampling Date		2019/12/04 09:15		2019/12/04 09:30		
COC Number		748247-02-01		748247-02-01		
	UNITS	11205379-BH12-SS3	QC Batch	11205379-BH12-SS4	RDL	QC Batch
Inorganics						
Moisture	%	11	6488752	5.8	1.0	6488612
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/g	ND	6486745	ND	0.050	6486745
Volatile Organics						
Acetone (2-Propanone)	ug/g	ND	6487911	ND	0.50	6489046
Benzene	ug/g	ND	6487911	ND	0.020	6489046
Bromodichloromethane	ug/g	ND	6487911	ND	0.050	6489046
Bromoform	ug/g	ND	6487911	ND	0.050	6489046
Bromomethane	ug/g	ND	6487911	ND	0.050	6489046
Carbon Tetrachloride	ug/g	ND	6487911	ND	0.050	6489046
Chlorobenzene	ug/g	ND	6487911	ND	0.050	6489046
Chloroform	ug/g	ND	6487911	ND	0.050	6489046
Dibromochloromethane	ug/g	ND	6487911	ND	0.050	6489046
1,2-Dichlorobenzene	ug/g	ND	6487911	ND	0.050	6489046
1,3-Dichlorobenzene	ug/g	ND	6487911	ND	0.050	6489046
1,4-Dichlorobenzene	ug/g	ND	6487911	ND	0.050	6489046
Dichlorodifluoromethane (FREON 12)	ug/g	ND	6487911	ND	0.050	6489046
1,1-Dichloroethane	ug/g	ND	6487911	ND	0.050	6489046
1,2-Dichloroethane	ug/g	ND	6487911	ND	0.050	6489046
1,1-Dichloroethylene	ug/g	ND	6487911	ND	0.050	6489046
cis-1,2-Dichloroethylene	ug/g	ND	6487911	ND	0.050	6489046
trans-1,2-Dichloroethylene	ug/g	ND	6487911	ND	0.050	6489046
1,2-Dichloropropane	ug/g	ND	6487911	ND	0.050	6489046
cis-1,3-Dichloropropene	ug/g	ND	6487911	ND	0.030	6489046
trans-1,3-Dichloropropene	ug/g	ND	6487911	ND	0.040	6489046
Ethylbenzene	ug/g	ND	6487911	ND	0.020	6489046
Ethylene Dibromide	ug/g	ND	6487911	ND	0.050	6489046
Hexane	ug/g	ND	6487911	0.91	0.050	6489046
Methylene Chloride(Dichloromethane)	ug/g	ND	6487911	ND	0.050	6489046
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	6487911	ND	0.50	6489046
Methyl Isobutyl Ketone	ug/g	ND	6487911	ND	0.50	6489046
Methyl t-butyl ether (MTBE)	ug/g	ND	6487911	ND	0.050	6489046

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU971		LMU972		
Sampling Date		2019/12/04 09:15		2019/12/04 09:30		
COC Number		748247-02-01		748247-02-01		
	UNITS	11205379-BH12-SS3	QC Batch	11205379-BH12-SS4	RDL	QC Batch
Styrene	ug/g	ND	6487911	ND	0.050	6489046
1,1,1,2-Tetrachloroethane	ug/g	ND	6487911	ND	0.050	6489046
1,1,2,2-Tetrachloroethane	ug/g	ND	6487911	ND	0.050	6489046
Tetrachloroethylene	ug/g	ND	6487911	ND	0.050	6489046
Toluene	ug/g	ND	6487911	ND	0.020	6489046
1,1,1-Trichloroethane	ug/g	ND	6487911	ND	0.050	6489046
1,1,2-Trichloroethane	ug/g	ND	6487911	ND	0.050	6489046
Trichloroethylene	ug/g	ND	6487911	ND	0.050	6489046
Trichlorofluoromethane (FREON 11)	ug/g	ND	6487911	ND	0.050	6489046
Vinyl Chloride	ug/g	ND	6487911	ND	0.020	6489046
p+m-Xylene	ug/g	ND	6487911	0.087	0.020	6489046
o-Xylene	ug/g	ND	6487911	ND	0.020	6489046
Total Xylenes	ug/g	ND	6487911	0.087	0.020	6489046
F1 (C6-C10)	ug/g	ND	6487911	64	10	6489046
F1 (C6-C10) - BTEX	ug/g	ND	6487911	63	10	6489046
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	ND	6489540	67	10	6489540
F3 (C16-C34 Hydrocarbons)	ug/g	ND	6489540	ND	50	6489540
F4 (C34-C50 Hydrocarbons)	ug/g	ND	6489540	ND	50	6489540
Reached Baseline at C50	ug/g	Yes	6489540	Yes		6489540
Surrogate Recovery (%)						
o-Terphenyl	%	92	6489540	95		6489540
4-Bromofluorobenzene	%	97	6487911	112		6489046
D10-o-Xylene	%	104	6487911	115		6489046
D4-1,2-Dichloroethane	%	106	6487911	99		6489046
D8-Toluene	%	93	6487911	94		6489046

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU972			LMU973		
Sampling Date		2019/12/04 09:30			2019/12/04 13:30		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-BH12-SS4 Lab-Dup	RDL	QC Batch	11205379-BH13-SS1	RDL	QC Batch
Inorganics							
Moisture	%				7.4	1.0	6488752
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g				ND	0.050	6486745
Volatile Organics							
Acetone (2-Propanone)	ug/g				ND	0.50	6489046
Benzene	ug/g				ND	0.020	6489046
Bromodichloromethane	ug/g				ND	0.050	6489046
Bromoform	ug/g				ND	0.050	6489046
Bromomethane	ug/g				ND	0.050	6489046
Carbon Tetrachloride	ug/g				ND	0.050	6489046
Chlorobenzene	ug/g				ND	0.050	6489046
Chloroform	ug/g				ND	0.050	6489046
Dibromochloromethane	ug/g				ND	0.050	6489046
1,2-Dichlorobenzene	ug/g				ND	0.050	6489046
1,3-Dichlorobenzene	ug/g				ND	0.050	6489046
1,4-Dichlorobenzene	ug/g				ND	0.050	6489046
Dichlorodifluoromethane (FREON 12)	ug/g				ND	0.050	6489046
1,1-Dichloroethane	ug/g				ND	0.050	6489046
1,2-Dichloroethane	ug/g				ND	0.050	6489046
1,1-Dichloroethylene	ug/g				ND	0.050	6489046
cis-1,2-Dichloroethylene	ug/g				ND	0.050	6489046
trans-1,2-Dichloroethylene	ug/g				ND	0.050	6489046
1,2-Dichloropropane	ug/g				ND	0.050	6489046
cis-1,3-Dichloropropene	ug/g				ND	0.030	6489046
trans-1,3-Dichloropropene	ug/g				ND	0.040	6489046
Ethylbenzene	ug/g				ND	0.020	6489046
Ethylene Dibromide	ug/g				ND	0.050	6489046
Hexane	ug/g				ND	0.050	6489046
Methylene Chloride(Dichloromethane)	ug/g				ND	0.050	6489046
Methyl Ethyl Ketone (2-Butanone)	ug/g				ND	0.50	6489046
Methyl Isobutyl Ketone	ug/g				ND	0.50	6489046

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU972			LMU973		
Sampling Date		2019/12/04 09:30			2019/12/04 13:30		
COC Number		748247-02-01			748247-02-01		
	UNITS	11205379-BH12-SS4 Lab-Dup	RDL	QC Batch	11205379-BH13-SS1	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/g				ND	0.050	6489046
Styrene	ug/g				ND	0.050	6489046
1,1,1,2-Tetrachloroethane	ug/g				ND	0.050	6489046
1,1,2,2-Tetrachloroethane	ug/g				ND	0.050	6489046
Tetrachloroethylene	ug/g				ND	0.050	6489046
Toluene	ug/g				ND	0.020	6489046
1,1,1-Trichloroethane	ug/g				ND	0.050	6489046
1,1,2-Trichloroethane	ug/g				ND	0.050	6489046
Trichloroethylene	ug/g				ND	0.050	6489046
Trichlorofluoromethane (FREON 11)	ug/g				ND	0.050	6489046
Vinyl Chloride	ug/g				ND	0.020	6489046
p+m-Xylene	ug/g				ND	0.020	6489046
o-Xylene	ug/g				ND	0.020	6489046
Total Xylenes	ug/g				ND	0.020	6489046
F1 (C6-C10)	ug/g				ND	10	6489046
F1 (C6-C10) - BTEX	ug/g				ND	10	6489046
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	64	10	6489540	ND	10	6489540
F3 (C16-C34 Hydrocarbons)	ug/g	ND	50	6489540	420	50	6489540
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	6489540	1000	50	6489540
Reached Baseline at C50	ug/g	Yes		6489540	No		6489540
Surrogate Recovery (%)							
o-Terphenyl	%	95		6489540	96		6489540
4-Bromofluorobenzene	%				108		6489046
D10-o-Xylene	%				111		6489046
D4-1,2-Dichloroethane	%				104		6489046
D8-Toluene	%				93		6489046

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU974	LMU975		LMU976		
Sampling Date		2019/12/04 13:40	2019/12/04 13:50		2019/12/04 14:20		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-BH13-SS2	11205379-BH13-SS3	QC Batch	11205379-BH14-SS1	RDL	QC Batch
Inorganics							
Moisture	%	16	5.0	6488466	7.0	1.0	6488612
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	6486745	ND	0.050	6486745
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	6489046	ND	0.50	6489046
Benzene	ug/g	ND	ND	6489046	ND	0.020	6489046
Bromodichloromethane	ug/g	ND	ND	6489046	ND	0.050	6489046
Bromoform	ug/g	ND	ND	6489046	ND	0.050	6489046
Bromomethane	ug/g	ND	ND	6489046	ND	0.050	6489046
Carbon Tetrachloride	ug/g	ND	ND	6489046	ND	0.050	6489046
Chlorobenzene	ug/g	ND	ND	6489046	ND	0.050	6489046
Chloroform	ug/g	ND	ND	6489046	ND	0.050	6489046
Dibromochloromethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,2-Dichlorobenzene	ug/g	ND	ND	6489046	ND	0.050	6489046
1,3-Dichlorobenzene	ug/g	ND	ND	6489046	ND	0.050	6489046
1,4-Dichlorobenzene	ug/g	ND	ND	6489046	ND	0.050	6489046
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1-Dichloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,2-Dichloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1-Dichloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
cis-1,2-Dichloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
trans-1,2-Dichloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
1,2-Dichloropropane	ug/g	ND	ND	6489046	ND	0.050	6489046
cis-1,3-Dichloropropene	ug/g	ND	ND	6489046	ND	0.030	6489046
trans-1,3-Dichloropropene	ug/g	ND	ND	6489046	ND	0.040	6489046
Ethylbenzene	ug/g	ND	ND	6489046	ND	0.020	6489046
Ethylene Dibromide	ug/g	ND	ND	6489046	ND	0.050	6489046
Hexane	ug/g	0.059	0.96	6489046	0.55	0.050	6489046
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	6489046	ND	0.050	6489046
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	6489046	ND	0.50	6489046
Methyl Isobutyl Ketone	ug/g	ND	ND	6489046	ND	0.50	6489046
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	6489046	ND	0.050	6489046

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU974	LMU975		LMU976		
Sampling Date		2019/12/04 13:40	2019/12/04 13:50		2019/12/04 14:20		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-BH13-SS2	11205379-BH13-SS3	QC Batch	11205379-BH14-SS1	RDL	QC Batch
Styrene	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
Tetrachloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
Toluene	ug/g	0.025	ND	6489046	ND	0.020	6489046
1,1,1-Trichloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1,2-Trichloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
Trichloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	6489046	ND	0.050	6489046
Vinyl Chloride	ug/g	ND	ND	6489046	ND	0.020	6489046
p+m-Xylene	ug/g	0.023	0.10	6489046	0.089	0.020	6489046
o-Xylene	ug/g	ND	0.024	6489046	0.021	0.020	6489046
Total Xylenes	ug/g	0.023	0.13	6489046	0.11	0.020	6489046
F1 (C6-C10)	ug/g	ND	57	6489046	21	10	6489046
F1 (C6-C10) - BTEX	ug/g	ND	57	6489046	21	10	6489046
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	ND	72	6489351	ND	10	6489351
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	6489351	140	50	6489351
F4 (C34-C50 Hydrocarbons)	ug/g	74	ND	6489351	630	50	6489351
Reached Baseline at C50	ug/g	No	Yes	6489351	No		6489351
Surrogate Recovery (%)							
o-Terphenyl	%	97	99	6489351	96		6489351
4-Bromofluorobenzene	%	109	112	6489046	110		6489046
D10-o-Xylene	%	124	119	6489046	114		6489046
D4-1,2-Dichloroethane	%	103	98	6489046	99		6489046
D8-Toluene	%	93	95	6489046	95		6489046

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU977	LMU978		LMU979		
Sampling Date		2019/12/04 14:30	2019/12/04 14:45		2019/12/04 13:30		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-BH14-SS2	11205379-BH14-SS3	QC Batch	11205379-DUP2	RDL	QC Batch
Inorganics							
Moisture	%	11	7.4	6488612	8.8	1.0	6488752
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	6486745	ND	0.050	6486745
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	6489046	ND	0.50	6489046
Benzene	ug/g	ND	ND	6489046	ND	0.020	6489046
Bromodichloromethane	ug/g	ND	ND	6489046	ND	0.050	6489046
Bromoform	ug/g	ND	ND	6489046	ND	0.050	6489046
Bromomethane	ug/g	ND	ND	6489046	ND	0.050	6489046
Carbon Tetrachloride	ug/g	ND	ND	6489046	ND	0.050	6489046
Chlorobenzene	ug/g	ND	ND	6489046	ND	0.050	6489046
Chloroform	ug/g	ND	ND	6489046	ND	0.050	6489046
Dibromochloromethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,2-Dichlorobenzene	ug/g	ND	ND	6489046	ND	0.050	6489046
1,3-Dichlorobenzene	ug/g	ND	ND	6489046	ND	0.050	6489046
1,4-Dichlorobenzene	ug/g	ND	ND	6489046	ND	0.050	6489046
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1-Dichloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,2-Dichloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1-Dichloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
cis-1,2-Dichloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
trans-1,2-Dichloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
1,2-Dichloropropane	ug/g	ND	ND	6489046	ND	0.050	6489046
cis-1,3-Dichloropropene	ug/g	ND	ND	6489046	ND	0.030	6489046
trans-1,3-Dichloropropene	ug/g	ND	ND	6489046	ND	0.040	6489046
Ethylbenzene	ug/g	ND	ND	6489046	ND	0.020	6489046
Ethylene Dibromide	ug/g	ND	ND	6489046	ND	0.050	6489046
Hexane	ug/g	ND	0.24	6489046	ND	0.050	6489046
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	6489046	ND	0.050	6489046
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	6489046	ND	0.50	6489046
Methyl Isobutyl Ketone	ug/g	ND	ND	6489046	ND	0.50	6489046
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	6489046	ND	0.050	6489046

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		LMU977	LMU978		LMU979		
Sampling Date		2019/12/04 14:30	2019/12/04 14:45		2019/12/04 13:30		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-BH14-SS2	11205379-BH14-SS3	QC Batch	11205379-DUP2	RDL	QC Batch
Styrene	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
Tetrachloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
Toluene	ug/g	ND	ND	6489046	ND	0.020	6489046
1,1,1-Trichloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
1,1,2-Trichloroethane	ug/g	ND	ND	6489046	ND	0.050	6489046
Trichloroethylene	ug/g	ND	ND	6489046	ND	0.050	6489046
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	6489046	ND	0.050	6489046
Vinyl Chloride	ug/g	ND	ND	6489046	ND	0.020	6489046
p+m-Xylene	ug/g	ND	ND	6489046	ND	0.020	6489046
o-Xylene	ug/g	ND	ND	6489046	ND	0.020	6489046
Total Xylenes	ug/g	ND	ND	6489046	ND	0.020	6489046
F1 (C6-C10)	ug/g	ND	38	6489046	ND	10	6489046
F1 (C6-C10) - BTEX	ug/g	ND	38	6489046	ND	10	6489046
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	ND	59	6489351	ND	10	6489540
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	6489351	310	50	6489540
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	6489351	790	50	6489540
Reached Baseline at C50	ug/g	Yes	Yes	6489351	No		6489540
Surrogate Recovery (%)							
o-Terphenyl	%	99	90	6489351	92		6489540
4-Bromofluorobenzene	%	111	112	6489046	107		6489046
D10-o-Xylene	%	115	119	6489046	115		6489046
D4-1,2-Dichloroethane	%	104	101	6489046	105		6489046
D8-Toluene	%	92	94	6489046	93		6489046

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		LMU951	LMU951		LMU956		
Sampling Date		2019/12/04 10:10	2019/12/04 10:10		2019/12/02 11:35		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-MW5-SS1	11205379-MW5-SS1 Lab-Dup	RDL	11205379-BH8-SS1	RDL	QC Batch
F2-F4 Hydrocarbons							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	8700	6700	1000	1200	100	6495603

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		LMU965	LMU966		LMU967		
Sampling Date		2019/12/02 14:40	2019/12/02 14:50		2019/12/04 12:25		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-BH10-SS3	11205379-BH10-SS4	QC Batch	11205379-BH11-SS1	RDL	QC Batch
F2-F4 Hydrocarbons							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	1600	2200	6495603	3100	100	6498837

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		LMU968		LMU969	LMU973		
Sampling Date		2019/12/04 12:40		2019/12/04 08:40	2019/12/04 13:30		
COC Number		748247-02-01		748247-02-01	748247-02-01		
	UNITS	11205379-BH11-SS2	QC Batch	11205379-BH12-SS1	11205379-BH13-SS1	RDL	QC Batch
F2-F4 Hydrocarbons							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	500	6495603	3900	4100	100	6498837

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		LMU974	LMU976		LMU979		
Sampling Date		2019/12/04 13:40	2019/12/04 14:20		2019/12/04 13:30		
COC Number		748247-02-01	748247-02-01		748247-02-01		
	UNITS	11205379-BH13-SS2	11205379-BH14-SS1	QC Batch	11205379-DUP2	RDL	QC Batch
F2-F4 Hydrocarbons							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	290	4300	6495603	3800	100	6498837

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU949
Sample ID: 11205379-MW4S-SS1
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486067	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489365	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490368	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488749	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/10	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/10	Anna Gabrielyan

BV Labs ID: LMU950
Sample ID: 11205379-MW4S-SS2
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489365	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490368	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488749	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488198	2019/12/10	2019/12/10	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/10	Anna Gabrielyan

BV Labs ID: LMU950 Dup
Sample ID: 11205379-MW4S-SS2
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489365	2019/12/10	2019/12/11	Archana Patel
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/10	Anna Gabrielyan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU951
Sample ID: 11205379-MW5-SS1
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489365	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490368	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/12	Barbara Wowk
F4G (CCME Hydrocarbons Gravimetric)	BAL	6495603	2019/12/13	2019/12/13	Debra Deslandes
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488749	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/10	Anna Gabrielyan

BV Labs ID: LMU951 Dup
Sample ID: 11205379-MW5-SS1
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
F4G (CCME Hydrocarbons Gravimetric)	BAL	6495603	2019/12/13	2019/12/13	Debra Deslandes

BV Labs ID: LMU952
Sample ID: 11205379-MW5-SS2
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486067	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489365	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490368	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488749	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/10	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6488198	2019/12/10	2019/12/10	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/10	Anna Gabrielyan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU953
Sample ID: 11205379-MW5-SS3
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489365	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490368	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488749	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/10	Anna Gabrielyan

BV Labs ID: LMU954
Sample ID: 11205379-BH6-SS1
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486067	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489365	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6489807	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490368	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6489758	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489540	2019/12/10	2019/12/11	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/11	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6490478	2019/12/11	2019/12/11	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU955
Sample ID: 11205379-BH6-SS2
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6489807	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6489758	2019/12/10	2019/12/11	Rupinder Sihota

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU955
Sample ID: 11205379-BH6-SS2
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489540	2019/12/10	2019/12/11	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488752	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6490478	2019/12/11	2019/12/11	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU956
Sample ID: 11205379-BH8-SS1
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486744	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
F4G (CCME Hydrocarbons Gravimetric)	BAL	6495603	2019/12/13	2019/12/13	Debra Deslandes
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/10	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6488198	2019/12/10	2019/12/10	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU957
Sample ID: 11205379-BH8-SS2
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU957
Sample ID: 11205379-BH8-SS2
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU957 Dup
Sample ID: 11205379-BH8-SS2
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel

BV Labs ID: LMU958
Sample ID: 11205379-BH9-SS1
Matrix: Soil

Collected: 2019/12/03
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488749	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU959
Sample ID: 11205379-DUP1
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486744	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/10	Ewa Pranjic

TEST SUMMARY

BV Labs ID: LMU959
Sample ID: 11205379-DUP1
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU961
Sample ID: 11205379-BH9-SS3
Matrix: Soil

Collected: 2019/12/03
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486744	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486068	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/12	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/10	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU961 Dup
Sample ID: 11205379-BH9-SS3
Matrix: Soil

Collected: 2019/12/03
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva

BV Labs ID: LMU962
Sample ID: 11205379-BH9-SS4
Matrix: Soil

Collected: 2019/12/03
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU962
Sample ID: 11205379-BH9-SS4
Matrix: Soil

Collected: 2019/12/03
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU962 Dup
Sample ID: 11205379-BH9-SS4
Matrix: Soil

Collected: 2019/12/03
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu

BV Labs ID: LMU963
Sample ID: 11205379-BH10-SS1
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU965
Sample ID: 11205379-BH10-SS3
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486744	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU965
Sample ID: 11205379-BH10-SS3
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
F4G (CCME Hydrocarbons Gravimetric)	BAL	6495603	2019/12/13	2019/12/13	Debra Deslandes
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/10	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU966
Sample ID: 11205379-BH10-SS4
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
F4G (CCME Hydrocarbons Gravimetric)	BAL	6495603	2019/12/13	2019/12/13	Debra Deslandes
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU966 Dup
Sample ID: 11205379-BH10-SS4
Matrix: Soil

Collected: 2019/12/02
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding

BV Labs ID: LMU967
Sample ID: 11205379-BH11-SS1
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486744	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU967
Sample ID: 11205379-BH11-SS1
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6489807	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6489758	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489540	2019/12/10	2019/12/12	Prabhjot Gulati
F4G (CCME Hydrocarbons Gravimetric)	BAL	6498837	2019/12/16	2019/12/16	Narinderjeet Kaur
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488752	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/11	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6490478	2019/12/11	2019/12/11	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU968
Sample ID: 11205379-BH11-SS2
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
F4G (CCME Hydrocarbons Gravimetric)	BAL	6495603	2019/12/13	2019/12/13	Debra Deslandes
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488749	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU969
Sample ID: 11205379-BH12-SS1
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486744	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6489807	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU969
Sample ID: 11205379-BH12-SS1
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	6489758	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489540	2019/12/10	2019/12/12	Prabhjot Gulati
F4G (CCME Hydrocarbons Gravimetric)	BAL	6498837	2019/12/16	2019/12/16	Narinderjeet Kaur
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488752	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/11	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6490478	2019/12/11	2019/12/11	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU971
Sample ID: 11205379-BH12-SS3
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6490678	2019/12/11	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/11	Automated Statchk
Free (WAD) Cyanide	TECH	6489807	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490765	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6489758	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489540	2019/12/10	2019/12/11	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6490680	2019/12/11	2019/12/11	Daniel Teclu
Moisture	BAL	6488752	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6490478	2019/12/11	2019/12/11	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486527	N/A	2019/12/11	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6487911	N/A	2019/12/11	Anna Gabrielyan

BV Labs ID: LMU972
Sample ID: 11205379-BH12-SS4
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/12	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489540	2019/12/10	2019/12/11	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU972
Sample ID: 11205379-BH12-SS4
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sodium Adsorption Ratio (SAR)	CALC/MET	6486749	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6489046	N/A	2019/12/11	Denis Reid

BV Labs ID: LMU972 Dup
Sample ID: 11205379-BH12-SS4
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489540	2019/12/10	2019/12/11	Prabhjot Gulati

BV Labs ID: LMU973
Sample ID: 11205379-BH13-SS1
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/12	Automated Statchk
Free (WAD) Cyanide	TECH	6489807	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6489758	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489540	2019/12/10	2019/12/11	Prabhjot Gulati
F4G (CCME Hydrocarbons Gravimetric)	BAL	6498837	2019/12/16	2019/12/16	Narinderjeet Kaur
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488752	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6490478	2019/12/11	2019/12/11	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486749	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6489046	N/A	2019/12/11	Denis Reid

BV Labs ID: LMU974
Sample ID: 11205379-BH13-SS2
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486744	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/12	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
F4G (CCME Hydrocarbons Gravimetric)	BAL	6495603	2019/12/13	2019/12/13	Debra Deslandes
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU974
Sample ID: 11205379-BH13-SS2
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/10	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6488198	2019/12/10	2019/12/10	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6486749	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6489046	N/A	2019/12/11	Denis Reid

BV Labs ID: LMU975
Sample ID: 11205379-BH13-SS3
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489365	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/12	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490368	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488466	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486749	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6489046	N/A	2019/12/11	Denis Reid

BV Labs ID: LMU975 Dup
Sample ID: 11205379-BH13-SS3
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota

BV Labs ID: LMU976
Sample ID: 11205379-BH14-SS1
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6486744	N/A	2019/12/12	Automated Statchk
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/12	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/11	Barbara Wowk

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU976
Sample ID: 11205379-BH14-SS1
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
F4G (CCME Hydrocarbons Gravimetric)	BAL	6495603	2019/12/13	2019/12/13	Debra Deslandes
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
OC Pesticides (Selected) & PCB	GC/ECD	6501747	2019/12/17	2019/12/18	Li Peng
OC Pesticides Summed Parameters	CALC	6486526	N/A	2019/12/10	Ewa Pranjic
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	6489342	2019/12/10	2019/12/11	Mitesh Raj
pH CaCl2 EXTRACT	AT	6488097	2019/12/10	2019/12/10	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486749	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6489046	N/A	2019/12/11	Denis Reid

BV Labs ID: LMU977
Sample ID: 11205379-BH14-SS2
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/12	Automated Statchk
Free (WAD) Cyanide	TECH	6488107	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6487839	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/12	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6488198	2019/12/10	2019/12/10	Kazzandra Adeva
Sodium Adsorption Ratio (SAR)	CALC/MET	6486749	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6489046	N/A	2019/12/11	Denis Reid

BV Labs ID: LMU977 Dup
Sample ID: 11205379-BH14-SS2
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	6488198	2019/12/10	2019/12/10	Kazzandra Adeva

BV Labs ID: LMU978
Sample ID: 11205379-BH14-SS3
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/12	Automated Statchk
Free (WAD) Cyanide	TECH	6489807	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

TEST SUMMARY

BV Labs ID: LMU978
Sample ID: 11205379-BH14-SS3
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	6489758	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489351	2019/12/10	2019/12/12	Barbara Wowk
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488612	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6490478	2019/12/11	2019/12/11	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486749	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6489046	N/A	2019/12/11	Denis Reid

BV Labs ID: LMU979
Sample ID: 11205379-DUP2
Matrix: Soil

Collected: 2019/12/04
Shipped:
Received: 2019/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	6489138	2019/12/10	2019/12/11	Archana Patel
1,3-Dichloropropene Sum	CALC	6486745	N/A	2019/12/12	Automated Statchk
Free (WAD) Cyanide	TECH	6489807	2019/12/10	2019/12/11	Louise Harding
Conductivity	AT	6490365	2019/12/11	2019/12/11	Kazzandra Adeva
Hexavalent Chromium in Soil by IC	IC/SPEC	6489758	2019/12/10	2019/12/11	Rupinder Sihota
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6489540	2019/12/10	2019/12/11	Prabhjot Gulati
F4G (CCME Hydrocarbons Gravimetric)	BAL	6498837	2019/12/16	2019/12/16	Narinderjeet Kaur
Strong Acid Leachable Metals by ICPMS	ICP/MS	6488630	2019/12/10	2019/12/11	Daniel Teclu
Moisture	BAL	6488752	N/A	2019/12/10	Prgya Panchal
pH CaCl2 EXTRACT	AT	6490478	2019/12/11	2019/12/11	Surinder Rai
Sodium Adsorption Ratio (SAR)	CALC/MET	6486749	N/A	2019/12/12	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6489046	N/A	2019/12/11	Denis Reid

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.0°C
Package 2	1.0°C

OC Pesticide Analysis: Due to the sample matrix, some samples required dilution. Detection limits were adjusted accordingly.

Sample LMU951 [11205379-MW5-SS1] : F4G Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted.

Sample LMU956 [11205379-BH8-SS1] : PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample LMU959 [11205379-DUP1] : PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample LMU967 [11205379-BH11-SS1] : PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample LMU969 [11205379-BH12-SS1] : PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample LMU976 [11205379-BH14-SS1] : PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

QUALITY ASSURANCE REPORT

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6487911	4-Bromofluorobenzene	2019/12/10	101 (4)	60 - 140	97	60 - 140	93	%		
6487911	D10-o-Xylene	2019/12/10	124 (4)	60 - 130	105	60 - 130	102	%		
6487911	D4-1,2-Dichloroethane	2019/12/10	103 (4)	60 - 140	103	60 - 140	105	%		
6487911	D8-Toluene	2019/12/10	98 (4)	60 - 140	101	60 - 140	97	%		
6489046	4-Bromofluorobenzene	2019/12/11	112	60 - 140	114	60 - 140	107	%		
6489046	D10-o-Xylene	2019/12/11	115	60 - 130	112	60 - 130	104	%		
6489046	D4-1,2-Dichloroethane	2019/12/11	101	60 - 140	102	60 - 140	102	%		
6489046	D8-Toluene	2019/12/11	101	60 - 140	100	60 - 140	93	%		
6489342	D10-Anthracene	2019/12/11	95	50 - 130	98	50 - 130	96	%		
6489342	D14-Terphenyl (FS)	2019/12/11	98	50 - 130	100	50 - 130	98	%		
6489342	D8-Acenaphthylene	2019/12/11	89	50 - 130	93	50 - 130	90	%		
6489351	o-Terphenyl	2019/12/11	92 (14)	60 - 130	95	60 - 130	96	%		
6489540	o-Terphenyl	2019/12/11	96 (18)	60 - 130	99	60 - 130	101	%		
6501747	2,4,5,6-Tetrachloro-m-xylene	2019/12/18	83	50 - 130	94	50 - 130	95	%		
6501747	Decachlorobiphenyl	2019/12/18	113	50 - 130	102	50 - 130	107	%		
6487839	Chromium (VI)	2019/12/11	39 (1,2)	70 - 130	87	80 - 120	ND, RDL=0.2	ug/g	NC (3)	35
6487911	1,1,1,2-Tetrachloroethane	2019/12/10	107 (4)	60 - 140	101	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,1,1-Trichloroethane	2019/12/10	102 (4)	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,1,2,2-Tetrachloroethane	2019/12/10	103 (4)	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,1,2-Trichloroethane	2019/12/10	107 (4)	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,1-Dichloroethane	2019/12/10	104 (4)	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,1-Dichloroethylene	2019/12/10	111 (4)	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,2-Dichlorobenzene	2019/12/10	93 (4)	60 - 140	89	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,2-Dichloroethane	2019/12/10	108 (4)	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,2-Dichloropropane	2019/12/10	98 (4)	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,3-Dichlorobenzene	2019/12/10	93 (4)	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	1,4-Dichlorobenzene	2019/12/10	98 (4)	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Acetone (2-Propanone)	2019/12/10	101 (4)	60 - 140	89	60 - 140	ND, RDL=0.50	ug/g	NC (5)	50
6487911	Benzene	2019/12/10	104 (4)	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g	NC (5)	50
6487911	Bromodichloromethane	2019/12/10	102 (4)	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6487911	Bromoform	2019/12/10	106 (4)	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Bromomethane	2019/12/10	120 (4)	60 - 140	106	60 - 140	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Carbon Tetrachloride	2019/12/10	98 (4)	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Chlorobenzene	2019/12/10	95 (4)	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Chloroform	2019/12/10	99 (4)	60 - 140	91	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	cis-1,2-Dichloroethylene	2019/12/10	97 (4)	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	cis-1,3-Dichloropropene	2019/12/10	107 (4)	60 - 140	92	60 - 130	ND, RDL=0.030	ug/g	NC (5)	50
6487911	Dibromochloromethane	2019/12/10	108 (4)	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Dichlorodifluoromethane (FREON 12)	2019/12/10	68 (4)	60 - 140	67	60 - 140	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Ethylbenzene	2019/12/10	84 (4)	60 - 140	80	60 - 130	ND, RDL=0.020	ug/g	NC (5)	50
6487911	Ethylene Dibromide	2019/12/10	106 (4)	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	F1 (C6-C10) - BTEX	2019/12/10					ND, RDL=10	ug/g	NC (5)	30
6487911	F1 (C6-C10)	2019/12/10	100 (4)	60 - 140	85	80 - 120	ND, RDL=10	ug/g	NC (5)	30
6487911	Hexane	2019/12/10	104 (4)	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Methyl Ethyl Ketone (2-Butanone)	2019/12/10	111 (4)	60 - 140	99	60 - 140	ND, RDL=0.50	ug/g	NC (5)	50
6487911	Methyl Isobutyl Ketone	2019/12/10	106 (4)	60 - 140	95	60 - 130	ND, RDL=0.50	ug/g	NC (5)	50
6487911	Methyl t-butyl ether (MTBE)	2019/12/10	93 (4)	60 - 140	85	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Methylene Chloride(Dichloromethane)	2019/12/10	98 (4)	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	o-Xylene	2019/12/10	94 (4)	60 - 140	89	60 - 130	ND, RDL=0.020	ug/g	NC (5)	50
6487911	p+m-Xylene	2019/12/10	90 (4)	60 - 140	86	60 - 130	ND, RDL=0.020	ug/g	NC (5)	50
6487911	Styrene	2019/12/10	96 (4)	60 - 140	91	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Tetrachloroethylene	2019/12/10	97 (4)	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Toluene	2019/12/10	103 (4)	60 - 140	97	60 - 130	ND, RDL=0.020	ug/g	NC (5)	50
6487911	Total Xylenes	2019/12/10					ND, RDL=0.020	ug/g	NC (5)	50
6487911	trans-1,2-Dichloroethylene	2019/12/10	105 (4)	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	trans-1,3-Dichloropropene	2019/12/10	122 (4)	60 - 140	103	60 - 130	ND, RDL=0.040	ug/g	NC (5)	50
6487911	Trichloroethylene	2019/12/10	104 (4)	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Trichlorofluoromethane (FREON 11)	2019/12/10	108 (4)	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC (5)	50
6487911	Vinyl Chloride	2019/12/10	129 (4)	60 - 140	121	60 - 130	ND, RDL=0.020	ug/g	NC (5)	50
6488097	Available (CaCl2) pH	2019/12/10			100	97 - 103			0.33 (6)	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6488107	WAD Cyanide (Free)	2019/12/11	86 (7)	75 - 125	93	80 - 120	ND, RDL=0.01	ug/g	NC (8)	35
6488198	Available (CaCl2) pH	2019/12/10			100	97 - 103			2.4 (9)	N/A
6488466	Moisture	2019/12/10							0.72 (6)	20
6488612	Moisture	2019/12/10							2.3 (6)	20
6488630	Acid Extractable Antimony (Sb)	2019/12/11	88 (10)	75 - 125	101	80 - 120	ND, RDL=0.20	ug/g	17 (11)	30
6488630	Acid Extractable Arsenic (As)	2019/12/11	102 (10)	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	0.81 (11)	30
6488630	Acid Extractable Barium (Ba)	2019/12/11	NC (10)	75 - 125	95	80 - 120	ND, RDL=0.50	ug/g	0.26 (11)	30
6488630	Acid Extractable Beryllium (Be)	2019/12/11	100 (10)	75 - 125	98	80 - 120	ND, RDL=0.20	ug/g	2.4 (11)	30
6488630	Acid Extractable Boron (B)	2019/12/11	98 (10)	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	0.58 (11)	30
6488630	Acid Extractable Cadmium (Cd)	2019/12/11	102 (10)	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	0.91 (11)	30
6488630	Acid Extractable Chromium (Cr)	2019/12/11	NC (10)	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	2.2 (11)	30
6488630	Acid Extractable Cobalt (Co)	2019/12/11	101 (10)	75 - 125	98	80 - 120	ND, RDL=0.10	ug/g	0.098 (11)	30
6488630	Acid Extractable Copper (Cu)	2019/12/11	NC (10)	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	6.3 (11)	30
6488630	Acid Extractable Lead (Pb)	2019/12/11	100 (10)	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	1.6 (11)	30
6488630	Acid Extractable Mercury (Hg)	2019/12/11	90 (10)	75 - 125	90	80 - 120	ND, RDL=0.050	ug/g	NC (11)	30
6488630	Acid Extractable Molybdenum (Mo)	2019/12/11	100 (10)	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	8.1 (11)	30
6488630	Acid Extractable Nickel (Ni)	2019/12/11	NC (10)	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	1.0 (11)	30
6488630	Acid Extractable Selenium (Se)	2019/12/11	102 (10)	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	NC (11)	30
6488630	Acid Extractable Silver (Ag)	2019/12/11	102 (10)	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g	NC (11)	30
6488630	Acid Extractable Thallium (Tl)	2019/12/11	95 (10)	75 - 125	99	80 - 120	ND, RDL=0.050	ug/g	6.1 (11)	30
6488630	Acid Extractable Uranium (U)	2019/12/11	99 (10)	75 - 125	97	80 - 120	ND, RDL=0.050	ug/g	0.84 (11)	30
6488630	Acid Extractable Vanadium (V)	2019/12/11	NC (10)	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	5.7 (11)	30
6488630	Acid Extractable Zinc (Zn)	2019/12/11	NC (10)	75 - 125	101	80 - 120	ND, RDL=5.0	ug/g	4.1 (11)	30
6488749	Acid Extractable Antimony (Sb)	2019/12/11	93	75 - 125	103	80 - 120	ND, RDL=0.20	ug/g	17 (6)	30
6488749	Acid Extractable Arsenic (As)	2019/12/11	103	75 - 125	109	80 - 120	ND, RDL=1.0	ug/g	0.059 (6)	30
6488749	Acid Extractable Barium (Ba)	2019/12/11	NC	75 - 125	105	80 - 120	ND, RDL=0.50	ug/g	4.4 (6)	30
6488749	Acid Extractable Beryllium (Be)	2019/12/11	100	75 - 125	102	80 - 120	ND, RDL=0.20	ug/g	2.1 (6)	30
6488749	Acid Extractable Boron (B)	2019/12/11	91	75 - 125	102	80 - 120	ND, RDL=5.0	ug/g	3.8 (6)	30
6488749	Acid Extractable Cadmium (Cd)	2019/12/11	99	75 - 125	105	80 - 120	ND, RDL=0.10	ug/g	17 (6)	30
6488749	Acid Extractable Chromium (Cr)	2019/12/11	99	75 - 125	104	80 - 120	ND, RDL=1.0	ug/g	4.9 (6)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6488749	Acid Extractable Cobalt (Co)	2019/12/11	101	75 - 125	103	80 - 120	ND, RDL=0.10	ug/g	4.6 (6)	30
6488749	Acid Extractable Copper (Cu)	2019/12/11	NC	75 - 125	105	80 - 120	ND, RDL=0.50	ug/g	27 (6)	30
6488749	Acid Extractable Lead (Pb)	2019/12/11	98	75 - 125	104	80 - 120	ND, RDL=1.0	ug/g	1.4 (6)	30
6488749	Acid Extractable Mercury (Hg)	2019/12/11	88	75 - 125	97	80 - 120	ND, RDL=0.050	ug/g	NC (6)	30
6488749	Acid Extractable Molybdenum (Mo)	2019/12/11	99	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	NC (6)	30
6488749	Acid Extractable Nickel (Ni)	2019/12/11	NC	75 - 125	105	80 - 120	ND, RDL=0.50	ug/g	4.0 (6)	30
6488749	Acid Extractable Selenium (Se)	2019/12/11	102	75 - 125	108	80 - 120	ND, RDL=0.50	ug/g	NC (6)	30
6488749	Acid Extractable Silver (Ag)	2019/12/11	101	75 - 125	102	80 - 120	ND, RDL=0.20	ug/g	NC (6)	30
6488749	Acid Extractable Thallium (Tl)	2019/12/11	98	75 - 125	101	80 - 120	ND, RDL=0.050	ug/g	16 (6)	30
6488749	Acid Extractable Uranium (U)	2019/12/11	98	75 - 125	102	80 - 120	ND, RDL=0.050	ug/g	7.5 (6)	30
6488749	Acid Extractable Vanadium (V)	2019/12/11	NC	75 - 125	106	80 - 120	ND, RDL=5.0	ug/g	1.3 (6)	30
6488749	Acid Extractable Zinc (Zn)	2019/12/11	NC	75 - 125	112	80 - 120	ND, RDL=5.0	ug/g	1.6 (6)	30
6488752	Moisture	2019/12/10							2.1 (6)	20
6489046	1,1,1,2-Tetrachloroethane	2019/12/11	106	60 - 140	107	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,1,1-Trichloroethane	2019/12/11	102	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,1,2,2-Tetrachloroethane	2019/12/11	93	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,1,2-Trichloroethane	2019/12/11	94	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,1-Dichloroethane	2019/12/11	97	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,1-Dichloroethylene	2019/12/11	108	60 - 140	107	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,2-Dichlorobenzene	2019/12/11	92	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,2-Dichloroethane	2019/12/11	100	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,2-Dichloropropane	2019/12/11	89	60 - 140	89	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,3-Dichlorobenzene	2019/12/11	92	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	1,4-Dichlorobenzene	2019/12/11	99	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Acetone (2-Propanone)	2019/12/11	109	60 - 140	125	60 - 140	ND, RDL=0.50	ug/g	NC (6)	50
6489046	Benzene	2019/12/11	97	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g	NC (6)	50
6489046	Bromodichloromethane	2019/12/11	93	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Bromoform	2019/12/11	109	60 - 140	112	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Bromomethane	2019/12/11	135	60 - 140	126	60 - 140	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Carbon Tetrachloride	2019/12/11	104	60 - 140	106	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6489046	Chlorobenzene	2019/12/11	90	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Chloroform	2019/12/11	94	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	cis-1,2-Dichloroethylene	2019/12/11	95	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	cis-1,3-Dichloropropene	2019/12/11	93	60 - 140	87	60 - 130	ND, RDL=0.030	ug/g	NC (6)	50
6489046	Dibromochloromethane	2019/12/11	103	60 - 140	103	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Dichlorodifluoromethane (FREON 12)	2019/12/11	110	60 - 140	108	60 - 140	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Ethylbenzene	2019/12/11	85	60 - 140	86	60 - 130	ND, RDL=0.020	ug/g	NC (6)	50
6489046	Ethylene Dibromide	2019/12/11	99	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	F1 (C6-C10) - BTEX	2019/12/11					ND, RDL=10	ug/g	NC (6)	30
6489046	F1 (C6-C10)	2019/12/11	91	60 - 140	90	80 - 120	ND, RDL=10	ug/g	NC (6)	30
6489046	Hexane	2019/12/11	101	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Methyl Ethyl Ketone (2-Butanone)	2019/12/11	100	60 - 140	113	60 - 140	ND, RDL=0.50	ug/g	NC (6)	50
6489046	Methyl Isobutyl Ketone	2019/12/11	91	60 - 140	98	60 - 130	ND, RDL=0.50	ug/g	NC (6)	50
6489046	Methyl t-butyl ether (MTBE)	2019/12/11	89	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Methylene Chloride(Dichloromethane)	2019/12/11	105	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	o-Xylene	2019/12/11	90	60 - 140	91	60 - 130	ND, RDL=0.020	ug/g	NC (6)	50
6489046	p+m-Xylene	2019/12/11	94	60 - 140	95	60 - 130	ND, RDL=0.020	ug/g	NC (6)	50
6489046	Styrene	2019/12/11	93	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Tetrachloroethylene	2019/12/11	98	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Toluene	2019/12/11	88	60 - 140	88	60 - 130	ND, RDL=0.020	ug/g	0.96 (6)	50
6489046	Total Xylenes	2019/12/11					ND, RDL=0.020	ug/g	NC (6)	50
6489046	trans-1,2-Dichloroethylene	2019/12/11	107	60 - 140	106	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	trans-1,3-Dichloropropene	2019/12/11	99	60 - 140	88	60 - 130	ND, RDL=0.040	ug/g	NC (6)	50
6489046	Trichloroethylene	2019/12/11	105	60 - 140	106	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Trichlorofluoromethane (FREON 11)	2019/12/11	119	60 - 140	119	60 - 130	ND, RDL=0.050	ug/g	NC (6)	50
6489046	Vinyl Chloride	2019/12/11	111	60 - 140	106	60 - 130	ND, RDL=0.020	ug/g	NC (6)	50
6489138	Hot Water Ext. Boron (B)	2019/12/11	96 (12)	75 - 125	101	75 - 125	ND, RDL=0.050	ug/g	14 (13)	40
6489342	1-Methylnaphthalene	2019/12/11	100	50 - 130	112	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	2-Methylnaphthalene	2019/12/11	91	50 - 130	103	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Acenaphthene	2019/12/11	100	50 - 130	103	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6489342	Acenaphthylene	2019/12/11	92	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Anthracene	2019/12/11	97	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Benzo(a)anthracene	2019/12/11	109	50 - 130	112	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Benzo(a)pyrene	2019/12/11	107	50 - 130	110	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Benzo(b/j)fluoranthene	2019/12/11	104	50 - 130	107	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Benzo(g,h,i)perylene	2019/12/11	95	50 - 130	100	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Benzo(k)fluoranthene	2019/12/11	110	50 - 130	113	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Chrysene	2019/12/11	104	50 - 130	107	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Dibenzo(a,h)anthracene	2019/12/11	107	50 - 130	110	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Fluoranthene	2019/12/11	106	50 - 130	109	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Fluorene	2019/12/11	97	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Indeno(1,2,3-cd)pyrene	2019/12/11	98	50 - 130	102	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Naphthalene	2019/12/11	81	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Phenanthrene	2019/12/11	102	50 - 130	105	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489342	Pyrene	2019/12/11	105	50 - 130	108	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6489351	F2 (C10-C16 Hydrocarbons)	2019/12/11	NC (14)	50 - 130	91	80 - 120	ND, RDL=10	ug/g	11 (15)	30
6489351	F3 (C16-C34 Hydrocarbons)	2019/12/11	82 (14)	50 - 130	94	80 - 120	ND, RDL=50	ug/g	3.7 (15)	30
6489351	F4 (C34-C50 Hydrocarbons)	2019/12/11	94 (14)	50 - 130	98	80 - 120	ND, RDL=50	ug/g	NC (15)	30
6489365	Hot Water Ext. Boron (B)	2019/12/11	97 (16)	75 - 125	97	75 - 125	ND, RDL=0.050	ug/g	3.3 (17)	40
6489540	F2 (C10-C16 Hydrocarbons)	2019/12/11	90 (18)	50 - 130	96	80 - 120	ND, RDL=10	ug/g	4.9 (19)	30
6489540	F3 (C16-C34 Hydrocarbons)	2019/12/11	87 (18)	50 - 130	99	80 - 120	ND, RDL=50	ug/g	NC (19)	30
6489540	F4 (C34-C50 Hydrocarbons)	2019/12/11	95 (18)	50 - 130	99	80 - 120	ND, RDL=50	ug/g	NC (19)	30
6489758	Chromium (VI)	2019/12/11	8.7 (1)	70 - 130	83	80 - 120	ND, RDL=0.2	ug/g	NC (6)	35
6489807	WAD Cyanide (Free)	2019/12/11	95	75 - 125	93	80 - 120	ND, RDL=0.01	ug/g	10 (6)	35
6490365	Conductivity	2019/12/11			100	90 - 110	ND, RDL=0.002	mS/cm	0.27 (20)	10
6490368	Conductivity	2019/12/11			101	90 - 110	ND, RDL=0.002	mS/cm	6.0 (6)	10
6490478	Available (CaCl2) pH	2019/12/11			100	97 - 103			1.0 (6)	N/A
6490678	Hot Water Ext. Boron (B)	2019/12/11	95	75 - 125	101	75 - 125	ND, RDL=0.050	ug/g	5.9 (6)	40
6490680	Acid Extractable Antimony (Sb)	2019/12/11	82	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	4.0 (6)	30
6490680	Acid Extractable Arsenic (As)	2019/12/11	102	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	5.8 (6)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6490680	Acid Extractable Barium (Ba)	2019/12/11	NC	75 - 125	93	80 - 120	ND, RDL=0.50	ug/g	1.6 (6)	30
6490680	Acid Extractable Beryllium (Be)	2019/12/11	99	75 - 125	96	80 - 120	ND, RDL=0.20	ug/g	2.3 (6)	30
6490680	Acid Extractable Boron (B)	2019/12/11	98	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	0.79 (6)	30
6490680	Acid Extractable Cadmium (Cd)	2019/12/11	102	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	7.3 (6)	30
6490680	Acid Extractable Chromium (Cr)	2019/12/11	NC	75 - 125	97	80 - 120	ND, RDL=1.0	ug/g	0.28 (6)	30
6490680	Acid Extractable Cobalt (Co)	2019/12/11	96	75 - 125	97	80 - 120	ND, RDL=0.10	ug/g	0.33 (6)	30
6490680	Acid Extractable Copper (Cu)	2019/12/11	NC	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	1.5 (6)	30
6490680	Acid Extractable Lead (Pb)	2019/12/11	94	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	1.6 (6)	30
6490680	Acid Extractable Mercury (Hg)	2019/12/11	89	75 - 125	91	80 - 120	ND, RDL=0.050	ug/g	NC (6)	30
6490680	Acid Extractable Molybdenum (Mo)	2019/12/11	101	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	NC (6)	30
6490680	Acid Extractable Nickel (Ni)	2019/12/11	NC	75 - 125	97	80 - 120	ND, RDL=0.50	ug/g	0.55 (6)	30
6490680	Acid Extractable Selenium (Se)	2019/12/11	101	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g	NC (6)	30
6490680	Acid Extractable Silver (Ag)	2019/12/11	101	75 - 125	101	80 - 120	ND, RDL=0.20	ug/g	NC (6)	30
6490680	Acid Extractable Thallium (Tl)	2019/12/11	95	75 - 125	98	80 - 120	ND, RDL=0.050	ug/g	1.5 (6)	30
6490680	Acid Extractable Uranium (U)	2019/12/11	97	75 - 125	97	80 - 120	ND, RDL=0.050	ug/g	0.20 (6)	30
6490680	Acid Extractable Vanadium (V)	2019/12/11	NC	75 - 125	96	80 - 120	ND, RDL=5.0	ug/g	0.064 (6)	30
6490680	Acid Extractable Zinc (Zn)	2019/12/11	NC	75 - 125	99	80 - 120	ND, RDL=5.0	ug/g	0.23 (6)	30
6490765	Conductivity	2019/12/11			102	90 - 110	ND, RDL=0.002	mS/cm	1.4 (6)	10
6495603	F4G-sg (Grav. Heavy Hydrocarbons)	2019/12/13	68	65 - 135	102	65 - 135	ND, RDL=100	ug/g	26 (21)	50
6498837	F4G-sg (Grav. Heavy Hydrocarbons)	2019/12/16	108	65 - 135	104	65 - 135	ND, RDL=100	ug/g	0 (6)	50
6501747	a-Chlordane	2019/12/18	88	50 - 130	101	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Aldrin	2019/12/18	80	50 - 130	88	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Aroclor 1242	2019/12/18					ND, RDL=0.015	ug/g	NC (6)	40
6501747	Aroclor 1248	2019/12/18					ND, RDL=0.015	ug/g	NC (6)	40
6501747	Aroclor 1254	2019/12/18					ND, RDL=0.015	ug/g	NC (6)	40
6501747	Aroclor 1260	2019/12/18					ND, RDL=0.015	ug/g	NC (6)	40
6501747	Dieldrin	2019/12/18	96	50 - 130	115	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Endosulfan I (alpha)	2019/12/18	92	50 - 130	111	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Endosulfan II (beta)	2019/12/18	101	50 - 130	99	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Endrin	2019/12/18	93	50 - 130	104	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6501747	g-Chlordane	2019/12/18	86	50 - 130	100	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Heptachlor epoxide	2019/12/18	82	50 - 130	101	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Heptachlor	2019/12/18	72	50 - 130	87	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Hexachlorobenzene	2019/12/18	77	50 - 130	88	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Hexachlorobutadiene	2019/12/18	83	50 - 130	96	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Hexachloroethane	2019/12/18	66	50 - 130	87	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Lindane	2019/12/18	81	50 - 130	103	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	Methoxychlor	2019/12/18	134 (22)	50 - 130	130	50 - 130	ND, RDL=0.0050	ug/g	NC (6)	40
6501747	o,p-DDD	2019/12/18	106	50 - 130	119	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	o,p-DDE	2019/12/18	75	50 - 130	85	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	o,p-DDT	2019/12/18	91	50 - 130	96	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	p,p-DDD	2019/12/18	105	50 - 130	113	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	p,p-DDE	2019/12/18	82	50 - 130	87	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40
6501747	p,p-DDT	2019/12/18	99	50 - 130	104	50 - 130	ND, RDL=0.0020	ug/g	NC (6)	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample. The matrix spike was reanalyzed to confirm result.

(2) Matrix Spike Parent ID [LMU975-02]

(3) Duplicate Parent ID [LMU975-02]

(4) Matrix Spike Parent ID [LMU950-03]

(5) Duplicate Parent ID [LMU950-03]

(6) Duplicate Parent ID

(7) Matrix Spike Parent ID [LMU966-02]

(8) Duplicate Parent ID [LMU966-02]

(9) Duplicate Parent ID [LMU977-02]

(10) Matrix Spike Parent ID [LMU962-01]

(11) Duplicate Parent ID [LMU962-01]

(12) Matrix Spike Parent ID [LMU957-01]

(13) Duplicate Parent ID [LMU957-01]

(14) Matrix Spike Parent ID [LMU962-02]

(15) Duplicate Parent ID [LMU962-02]

(16) Matrix Spike Parent ID [LMU950-01]

(17) Duplicate Parent ID [LMU950-01]

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits

(18) Matrix Spike Parent ID [LMU972-02]

(19) Duplicate Parent ID [LMU972-02]

(20) Duplicate Parent ID [LMU961-01]

(21) Duplicate Parent ID [LMU951-02]

(22) The recovery was above the upper control limit. This may represent a high bias in some results for this specific analyte. For results that were not detected (ND), this potential bias has no impact.

(23) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18

GHD Limited
Client Project #: 11205379-20
Site Location: OTTAWA, ON
Your P.O. #: 73518145
Sampler Initials: RV

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

05-Dec-19 11:00
Ema Gitej
B9Y4500

Page 1 of 4

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:			
Company Name:	#3000 GHD Limited	Company Name:	GHD	Quotation #:	B90001	J_L	ENV-781
Attention:	Laura Ermeta (AP-735)	Attention:	Aditya Khandekar	P.O. #:	73518145		
Address:	455 Phillip St Waterloo ON N2L 3X2	Address:		Project:	11205379-20		
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Project Name:			
Email:	APinvoices-735@ghd.com	Email:	Aditya.khandekar@ghd.com	Site #:			
				Sampled By:	R. Vadettillayat		

Bottle Order #: 748247
COC #: C#748247-02-01
Project Manager: Ema Gitej

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558. ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg	O.Reg 153 OC Pesticides	O.Reg 153 PCBs	# of Bottles	Comments
1		11205379 - MW4S - SS1	Dec 2	9:05	S		X	X	X	X	X	4	ON HOLD
2		11205379 - MW4S - SS2	"	9:15	S		X	X	X	X	X	4	
3		11205379 - MW5 - SS1	Dec 4	10:10	S		X	X	X	X	X	4	
4		11205379 - MW5 - SS2	"	10:20	S		X	X	X	X	X	4	
5		11205379 - MW5 - SS3	"	10:30	S		X	X	X	X	X	4	
6		11205379 - BH6 - SS1	Dec 2	12:50	S		X	X	X	X	X	4	
7		11205379 - BH6 - SS2	"	13:05	S		X	X	X	X	X	4	
8		11205379 - BH8 - SS1	"	11:35	S		X	X	X	X	X	4	
9		11205379 - BH8 - SS2	"	11:40	S		X	X	X	X	X	4	ON ICE
10		11205379 - BH9 - SS1	Dec 3	14:45	S		X	X	X	X	X	4	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	*# jars used and not submitted
Ryan Vadettillayat	19/12/05	11:00	Serge Legeyt	19/12/05	11:00	
				19/12/06	08:00	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal Present	Yes	No
	2.5, 2, 2.0, 1	Intact	X	

5/2/4
5/2/1
3/3/1

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 GHD Limited	Company Name:	GHD	Quotation #:	B90001	BV Labs Job #:	Bottle Order #:
Attention:	Laura Ermeta (AP-735)	Attention:	Aditya Khandekar	P.O. #:	73518145		748247
Address:	455 Phillip St Waterloo ON N2L 3X2	Address:		Project:	11205379-20	COC #:	Project Manager:
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Project Name:		C#748247-03-01	Ema Gitej
Email:	APinvoices-735@ghd.com	Email:	Aditya.Khandekar@ghd.com	Site #:			
				Sampled By:	Ryan Vanderwillen		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558. ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	

Include Criteria on Certificate of Analysis (Y/N)? ___

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects
Regular (Standard) TAT: 7 X
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.
Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg	O.Reg 153 OC Pesticides	O.Reg. 153 PCBs	# of Bottles	Comments
1		11205379-DUP1	Dec 2	9:05	S	X	X	X	X	X	4	ON Hold
2		11205379-BH9-SS2	Dec 3	14:55	S	X	X	X	X	X	4	
3		11205379-BH9-SS3	"	15:10	S	X	X	X	X	X	4	
4		11205379-BH9-SS4	"	15:20	S	X	X	X	X	X	4	
5		11205379-BH10-SS1	Dec 2	14:20	S	X	X	X	X	X	4	
6		11205379-BH10-SS2	"	14:30	S	X	X	X	X	X	4	
7		11205379-BH10-SS3	"	14:40	S	X	X	X	X	X	4	
8		11205379-BH10-SS4	"	14:50	S	X	X	X	X	X	4	
9		11205379-BH11-SS1	Dec 4	12:25	S	X	X	X	X	X	4	
10		11205379-BH11-SS2	4	12:40	S	X	X	X	X	X	4	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Ryan Vanderwillen	19/12/05	11:00	Serge Leger (See page)	19/12/05	11:00	

Laboratory Use Only
Time Sensitive
Temperature (°C) on Recei: 2,5,2/2,0,1
Custody Seal Present: Yes X
Intact: No X

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 GHD Limited	Company Name:	GHD	Quotation #:	B90001	BV Labs Job #:	Bottle Order #: 748247
Attention:	Laura Ermeta (AP-735)	Attention:	Aditya Khandelwal	P.O. #:	73518145		
Address:	455 Phillip St Waterloo ON N2L 3X2	Address:		Project:	11205379-20	COC #: C#748247-05-01	Project Manager: Ema Gitej
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Project Name:			
Email:	APinvoices-735@ghd.com	Email:	Aditya.Khandelwal@ghd.com	Site #:			
				Sampled By:	R. Vanderwillen		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558. ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects
Regular (Standard) TAT: (will be applied if Rush TAT is not specified): X
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.
Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ (call lab for #)

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg	O.Reg 153 OC Pesticides	O. Reg 153 PCBs	# of Bottles	Comments
1		11205379 - BH12-SS1	Dec 4	8:40	S		X	X	X	X	X	4	ON HOLD
2		11205379 - BH12-SS2	"	9:05	S		X	X	X	X	X	4	
3		11205379 - BH12-SS3	"	9:15	S		X	X	X	X	X	4	
4		11205379 - BH12-SS4	"	9:30	S		X	X	X	X	X	4	
5		11205379 - BH13-SS1	"	13:30	S		X	X	X	X	X	4	
6		11205379 - BH13-SS2	"	13:40	S		X	X	X	X	X	4	
7		11205379 - BH13-SS3	"	13:50	S		X	X	X	X	X	4	
8		11205379 - BH14-SS1	"	14:20	S		X	X	X	X	X	4	
9		11205379 - BH14-SS2	"	14:30	S		X	X	X	X	X	4	
10		11205379 - BH14-SS3	"	14:45	S		X	X	X	X	X	4	on ice

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Ryan Vanderwillen	19/12/05	11:00	Sage Leger	19/12/05	11:00	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	2.5, 2.0, 1	Present	X	
		Intact	X	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 GHD Limited	Company Name:	GHD	Quotation #:	B90001	BV Labs Job #:	Bottle Order #:
Attention:	Laura Ermeta (AP-735)	Attention:	Aditya Khandelwal	P.O. #:	7357814S		750786
Address:	455 Phillip St Waterloo ON N2L 3X2	Address:		Project:	11205374-20	COC #:	Project Manager:
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Project Name:		C#750786-01-01	Ema Gitej
Email:	APExpenses-735@ghd.com	Email:	Aditya.khandelwal@ghd.com	Site #:			
				Sampled By:	R. Vanderwal		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	ORegs 153 VOCs & HSP-F4	ORegs 153 PAHs	ORegs 153 Metals & Inorganics	ORegs 153 OC Pest (Incl DDT)	ORegs 153 PCBs					# of Bottles	Comments
1		11205374-DUP2	Dec 4	13:30	S		X	X	X	X	X					4	ON Hold
2		Trip Blank					X									2	"
3																	
4																	
5																	
6																	
7																	
8																	
9																	on ice
10																	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Ryan Vanderwal	19/12/05	10:00	Sonya Léger	19/12/05	11:00	

Laboratory Use Only				
Time Sensitive	Temperature (°C) on Recei	2.5.2 / 3.0.1	Custody Seal Present	Yes ☒ / No
			Intact	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

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** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

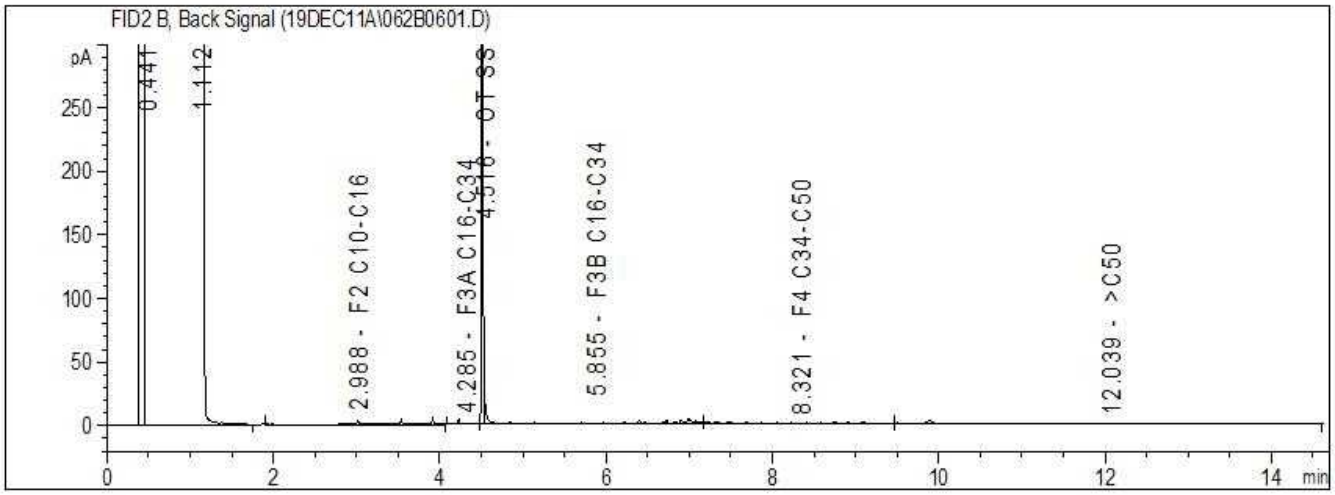
White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

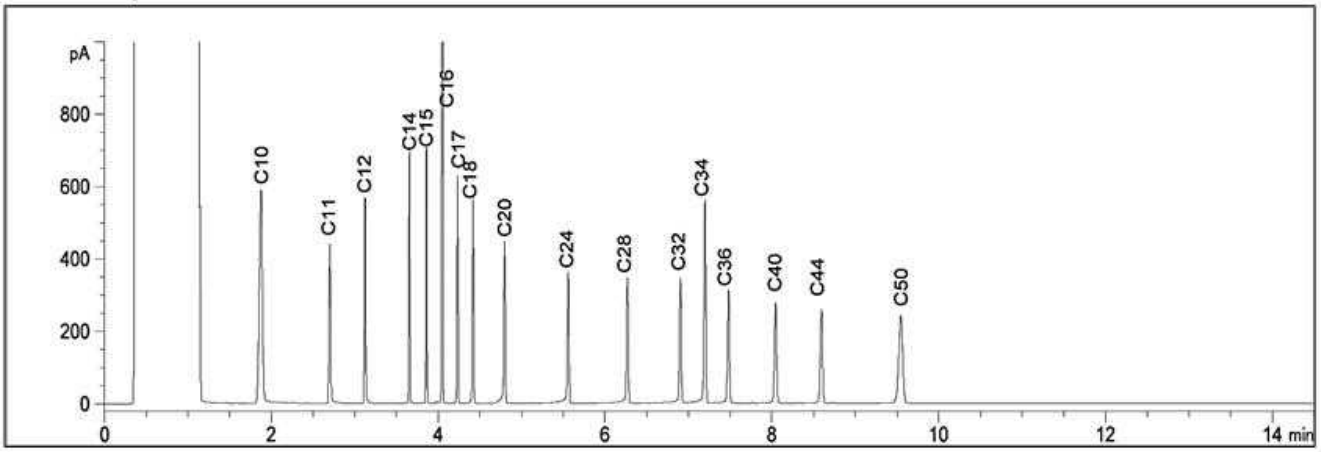
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU949

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-MW4S-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

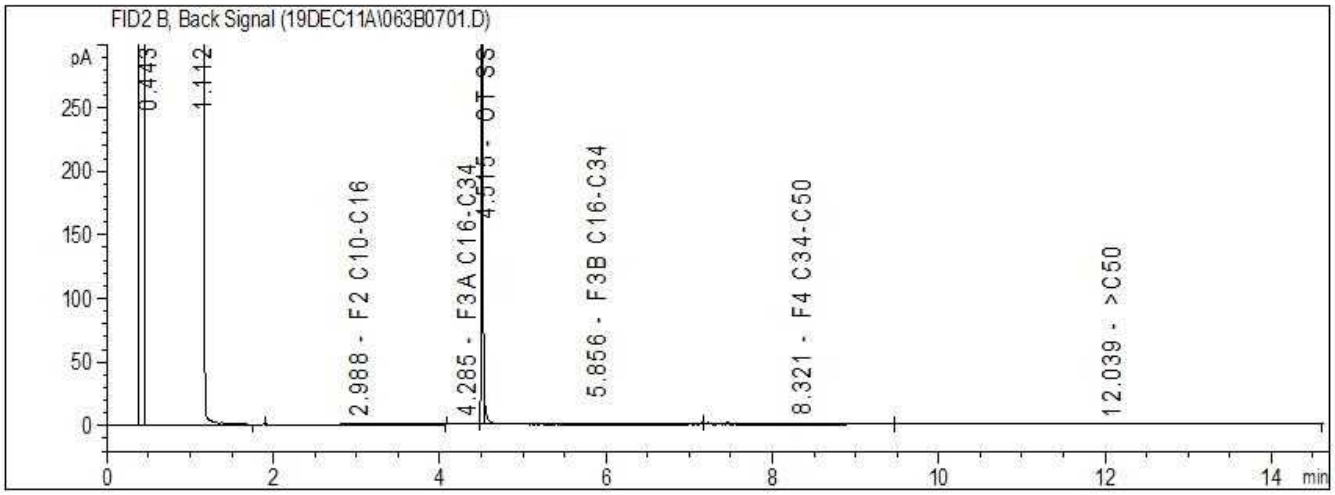
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

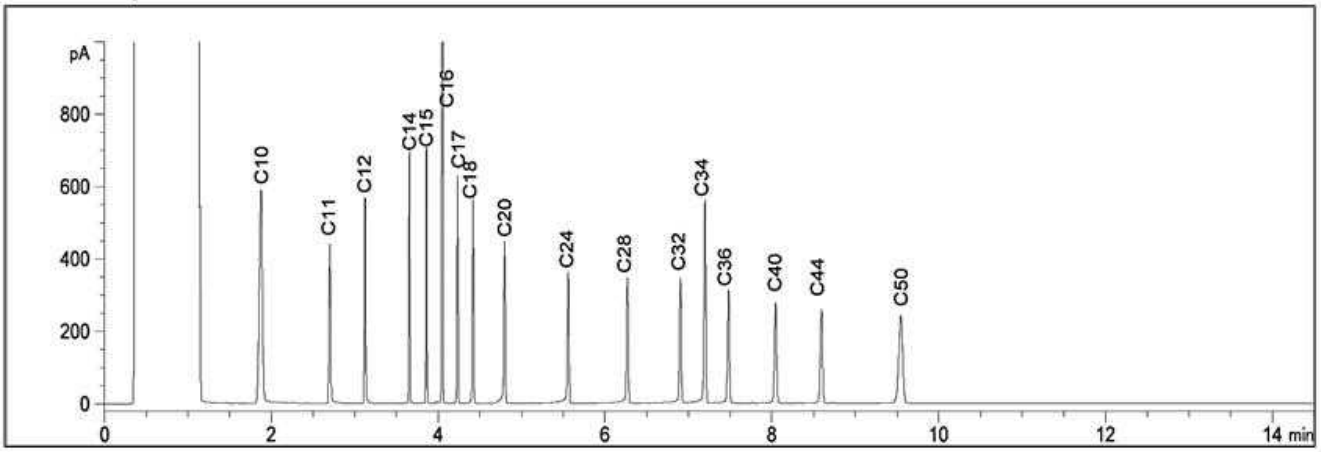
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU950

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-MW4S-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

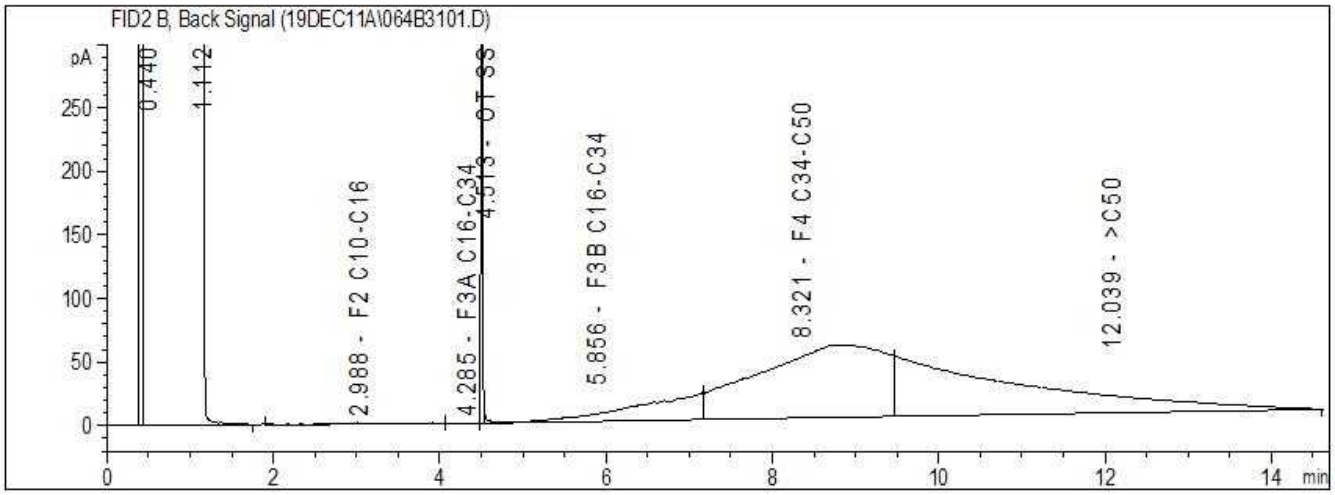
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU951

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-MW5-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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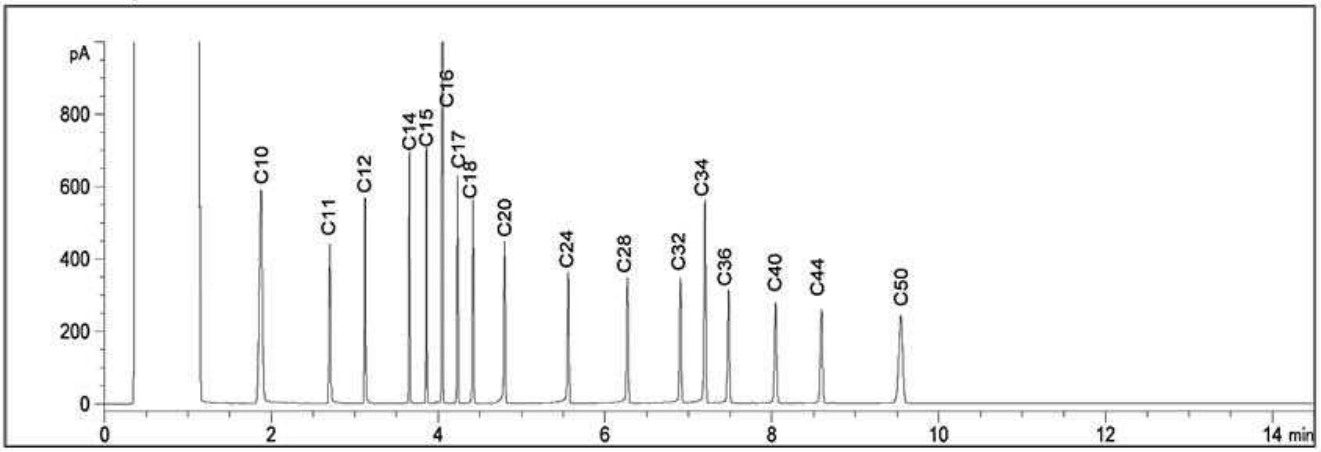


TYPICAL PRODUCT CARBON NUMBER RANGES

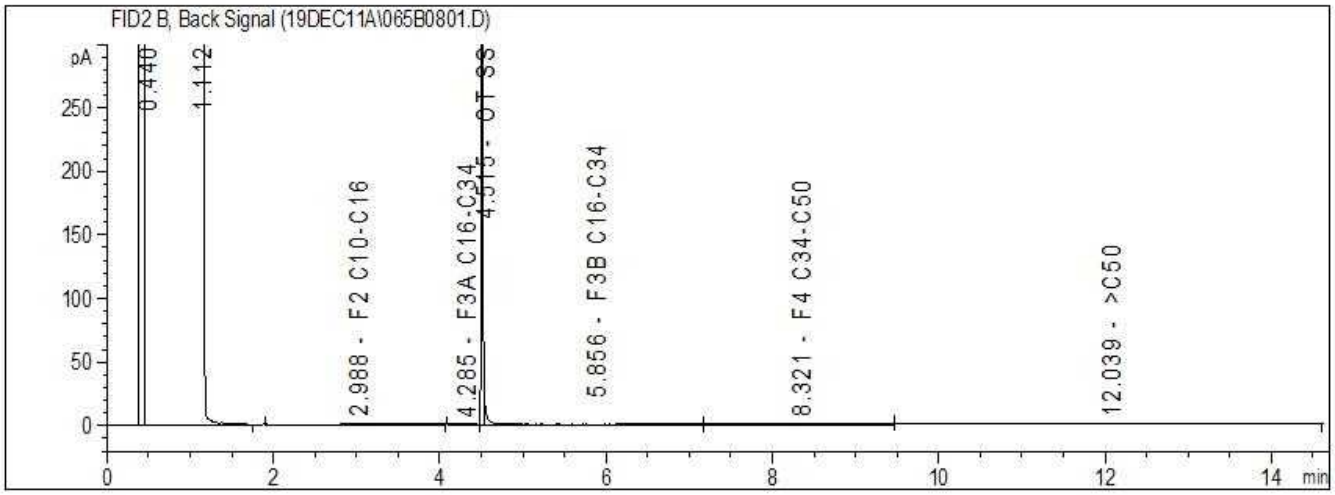
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

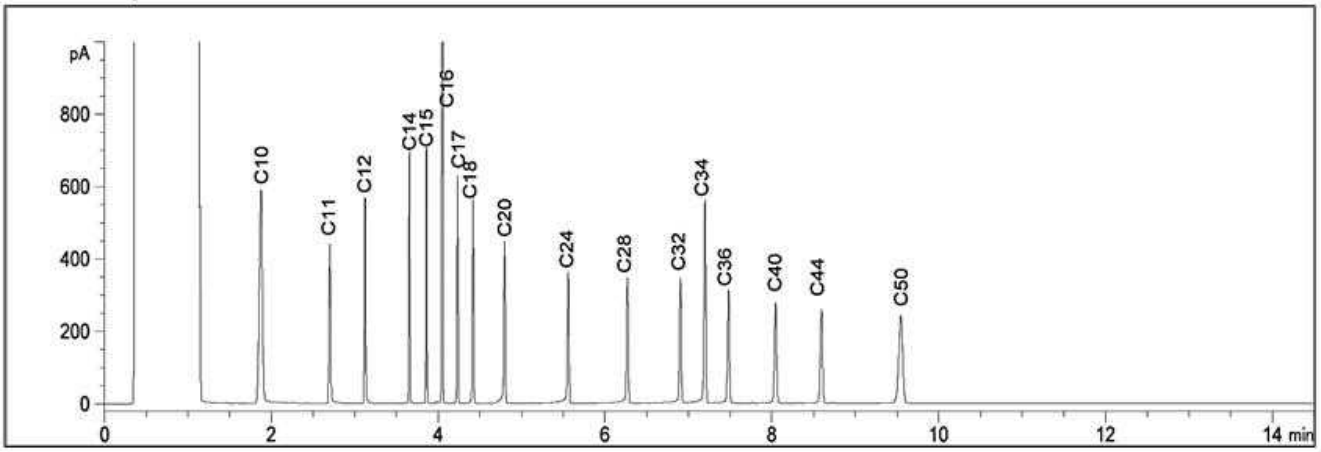
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU952

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-MW5-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

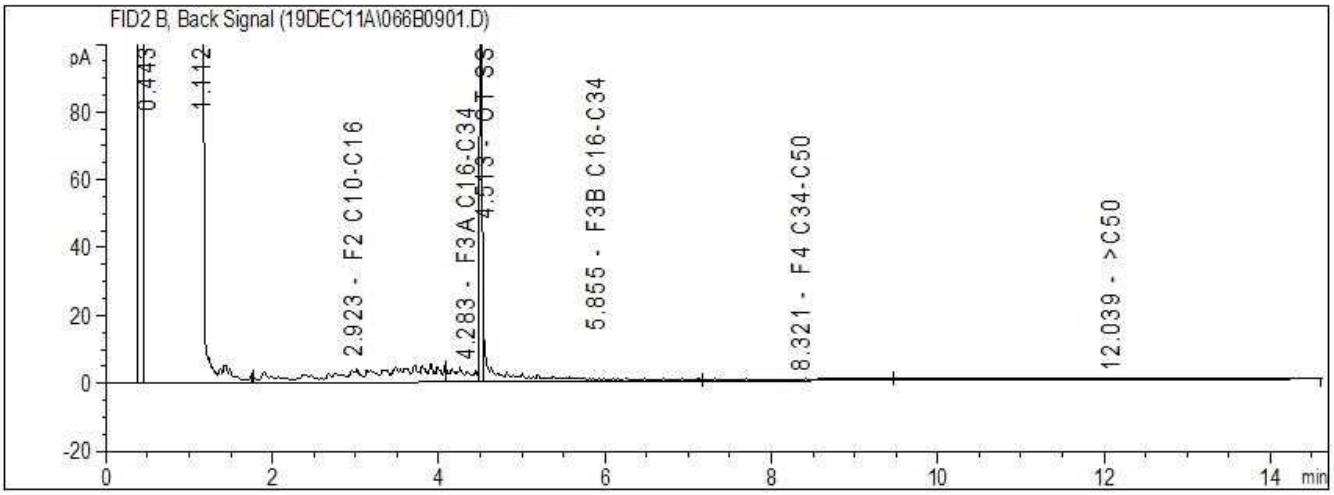
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

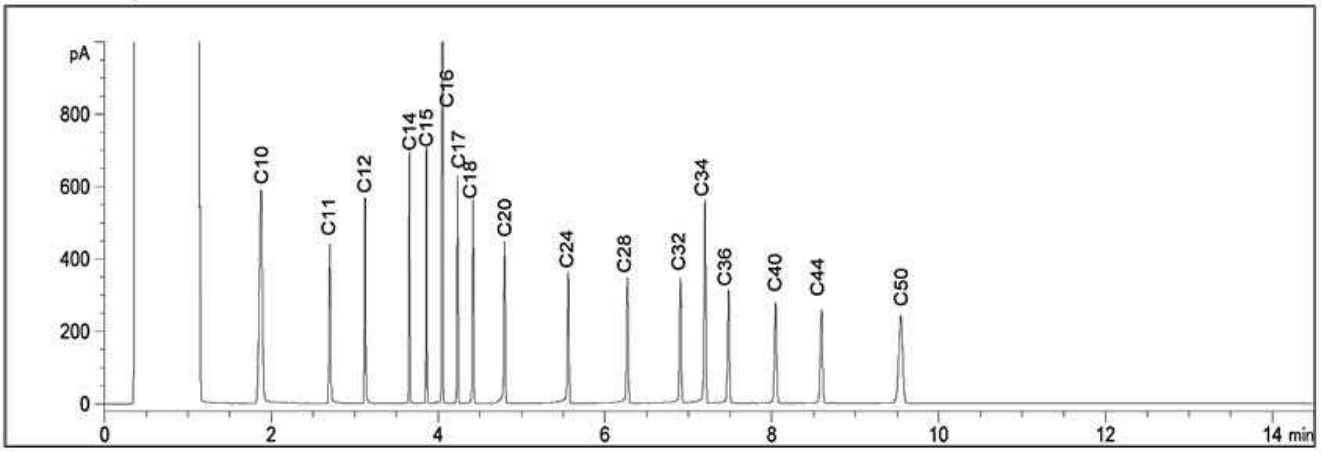
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU953

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-MW5-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

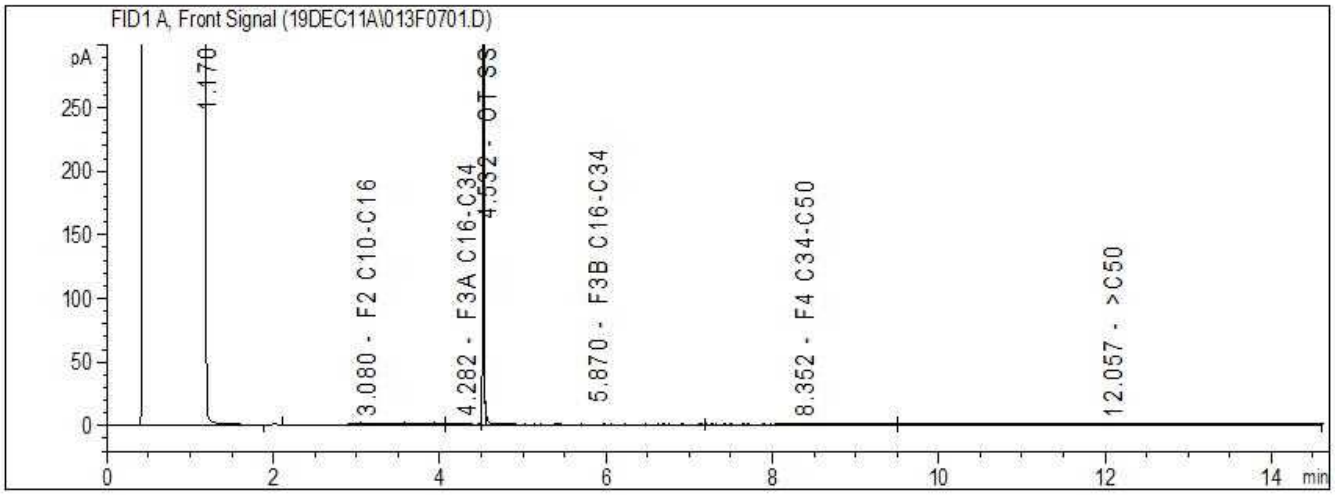
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

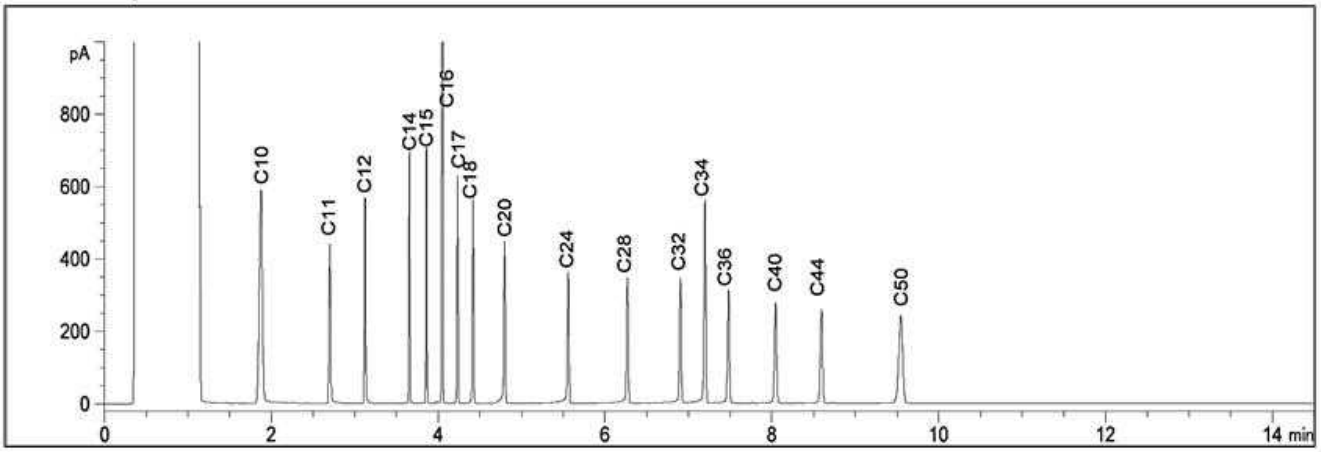
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU954

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH6-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

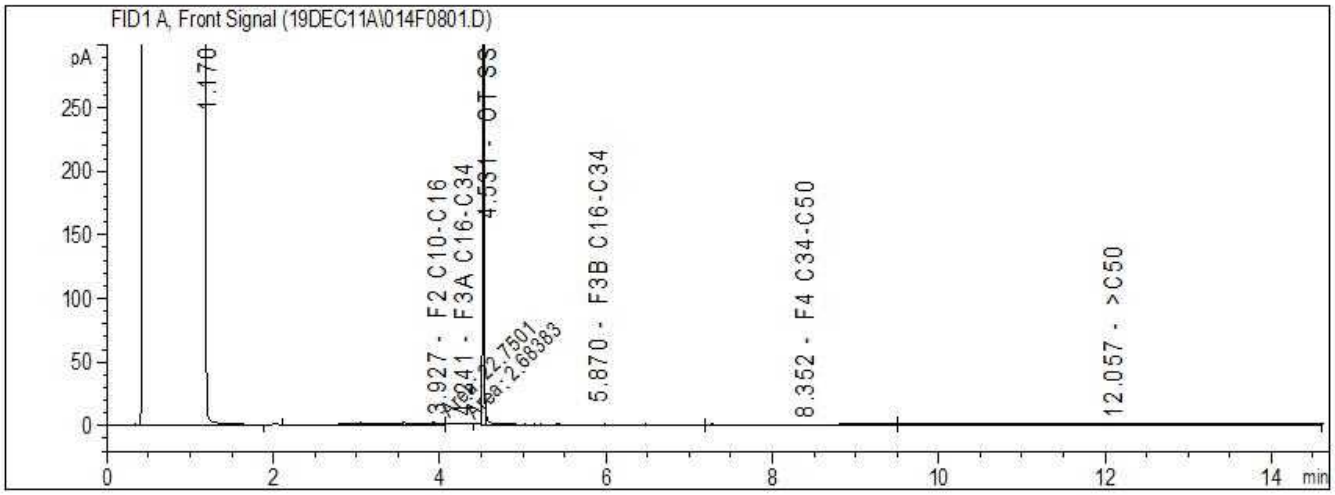
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

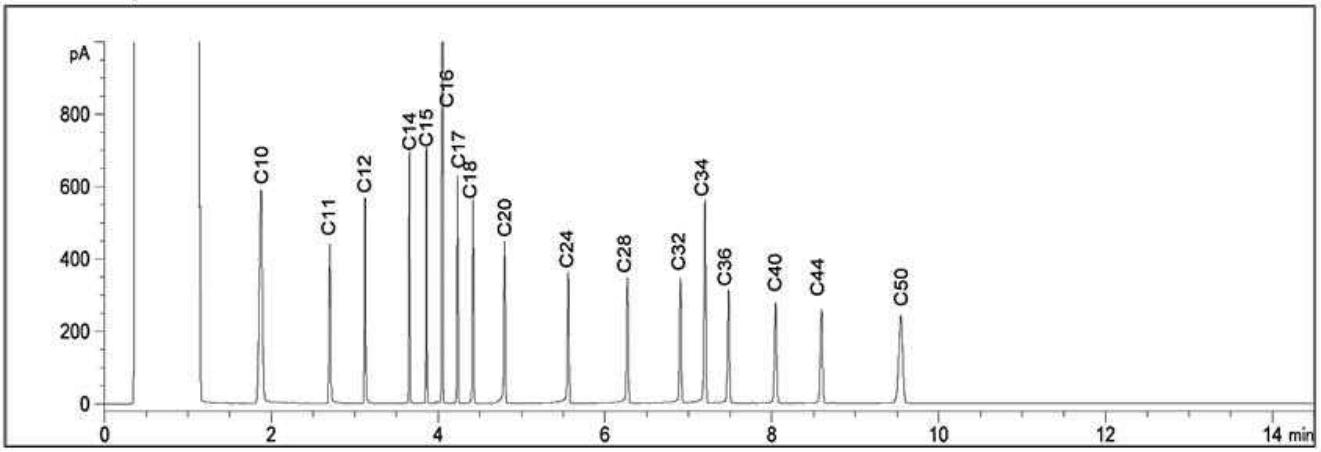
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU955

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH6-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

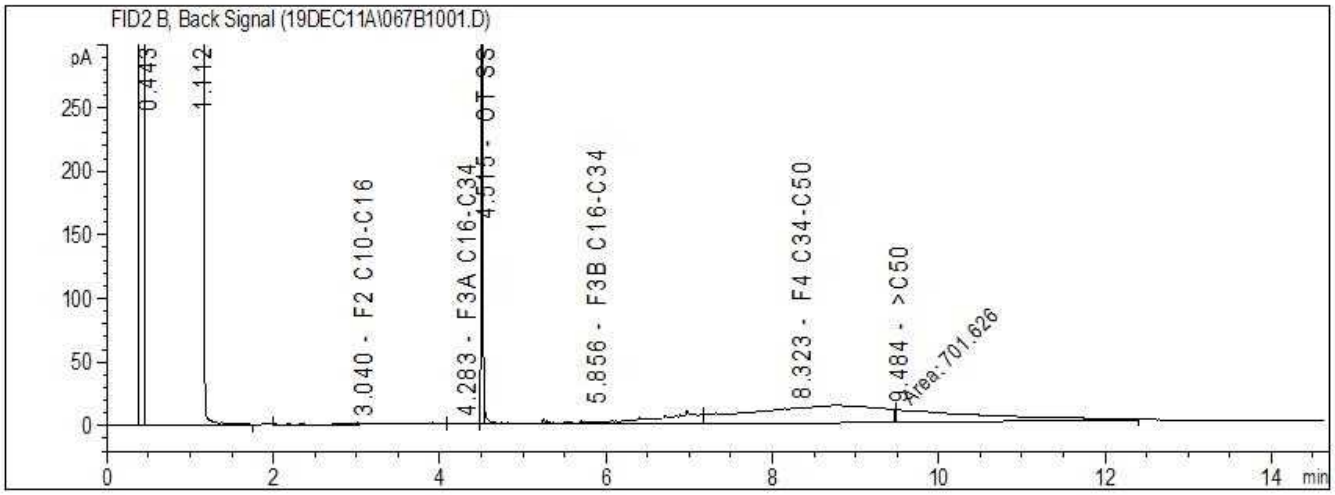
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

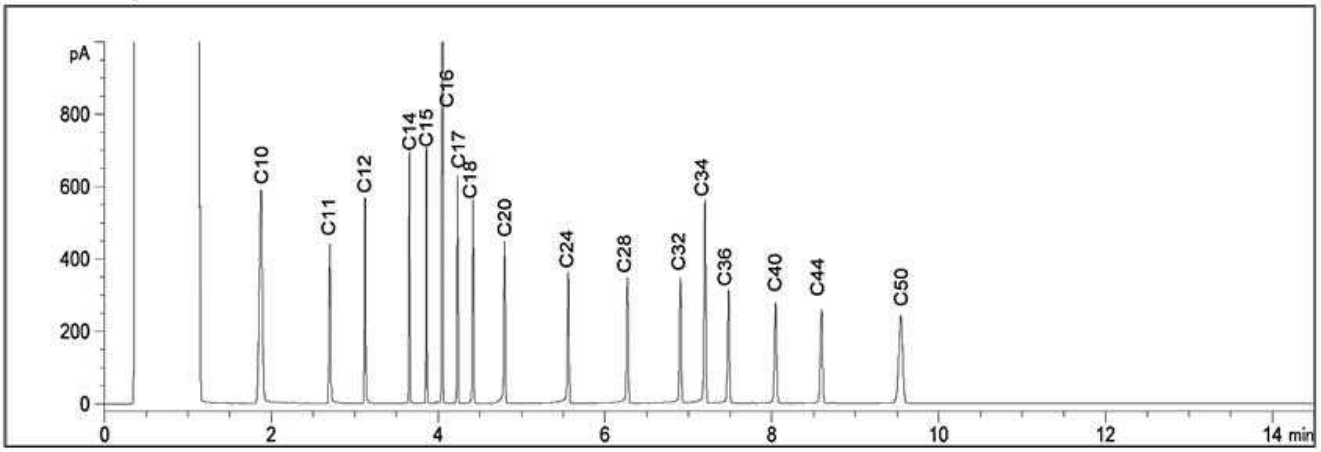
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU956

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH8-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

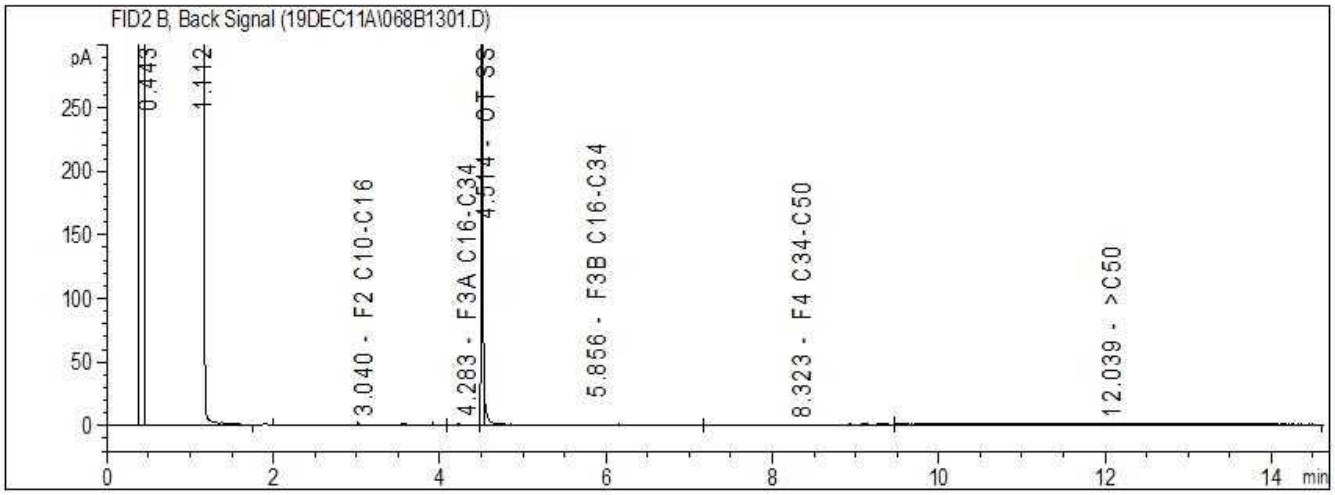
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

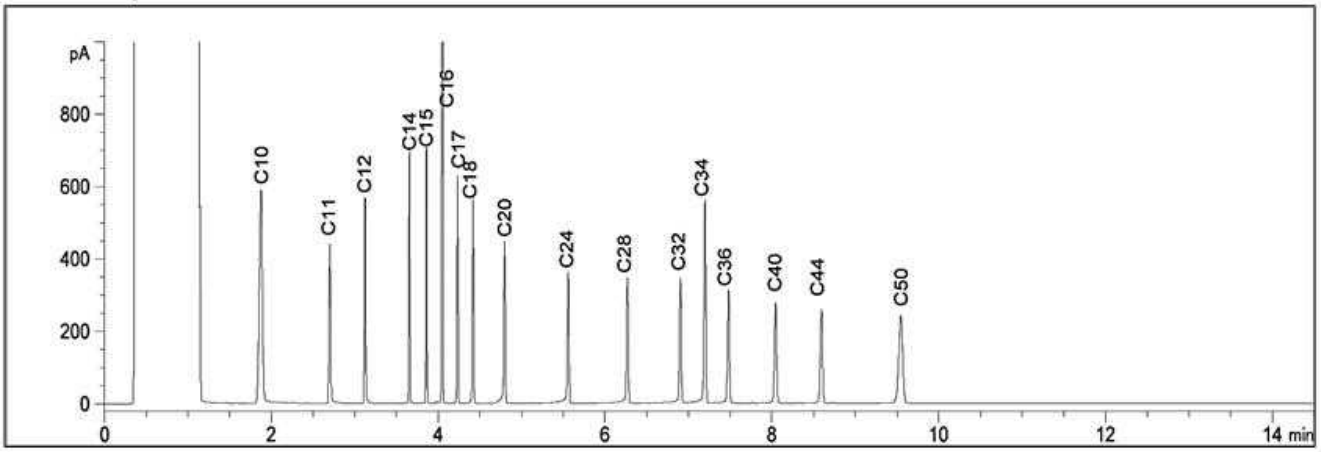
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU957

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH8-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

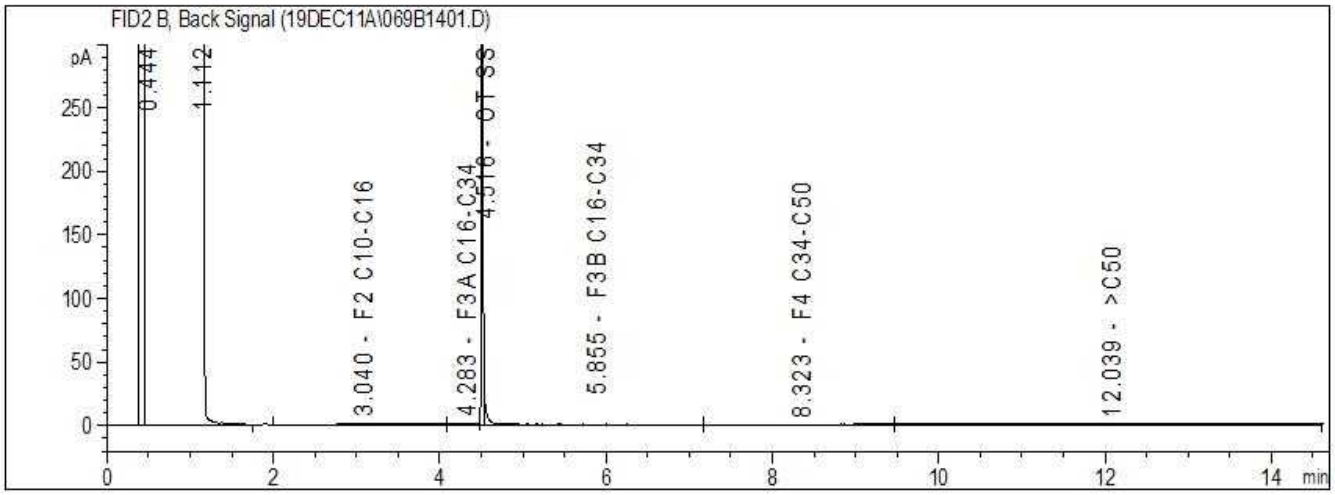
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

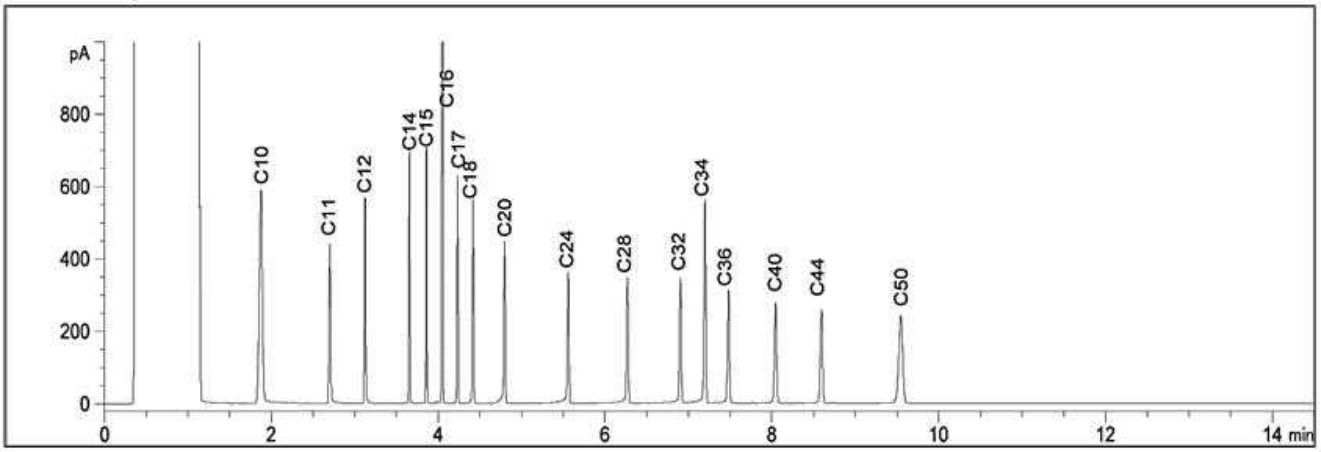
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU958

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH9-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

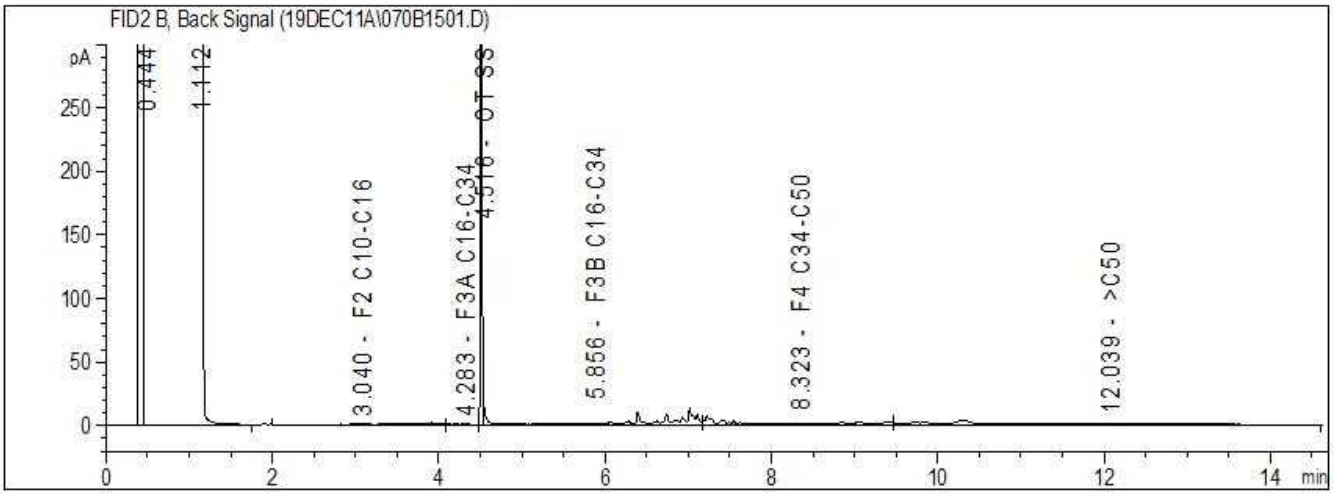
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

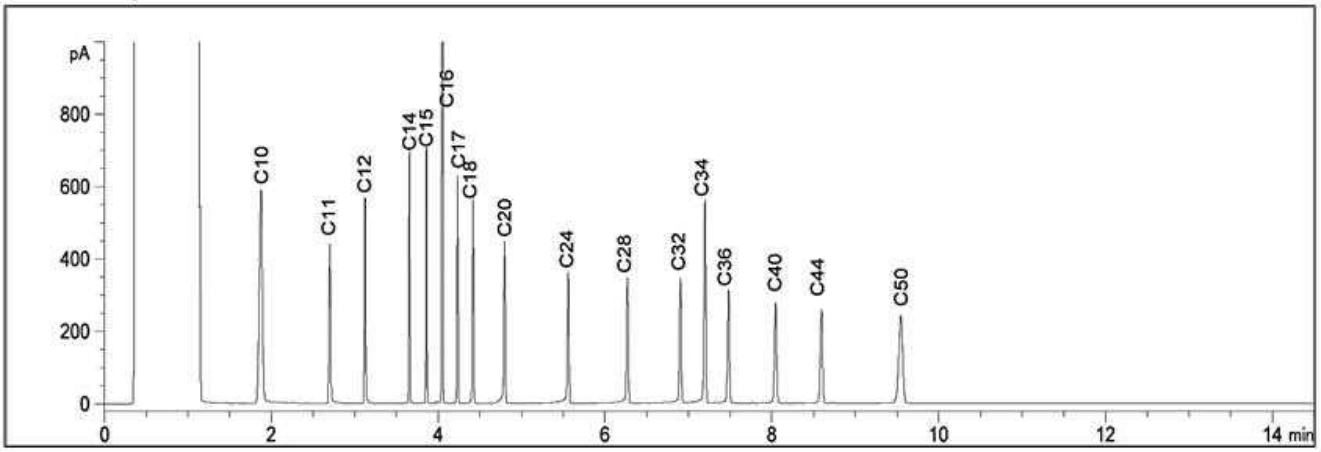
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU959

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-DUP1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

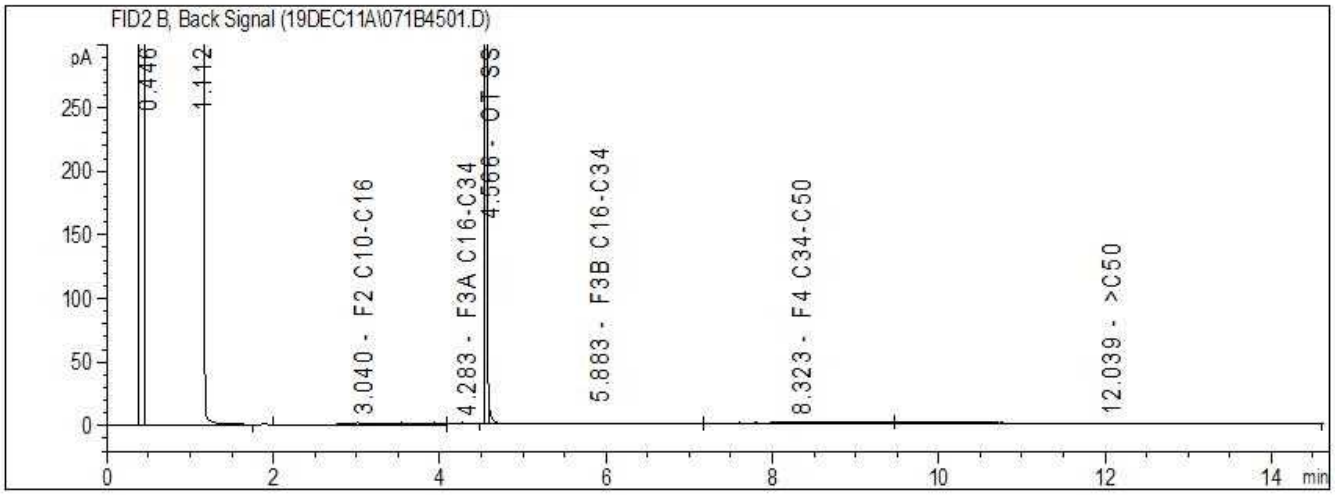
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

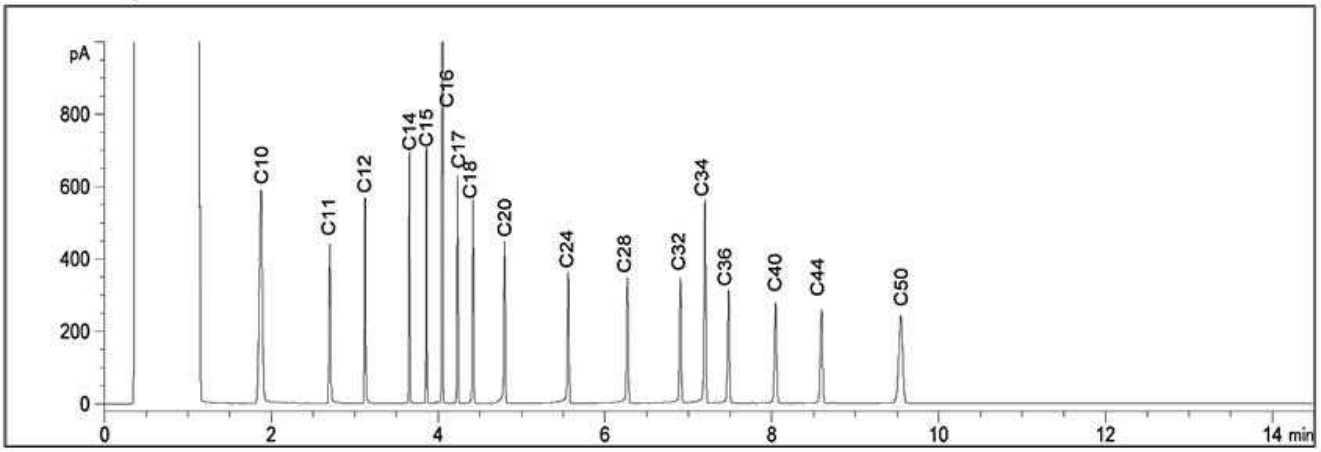
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU961

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH9-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

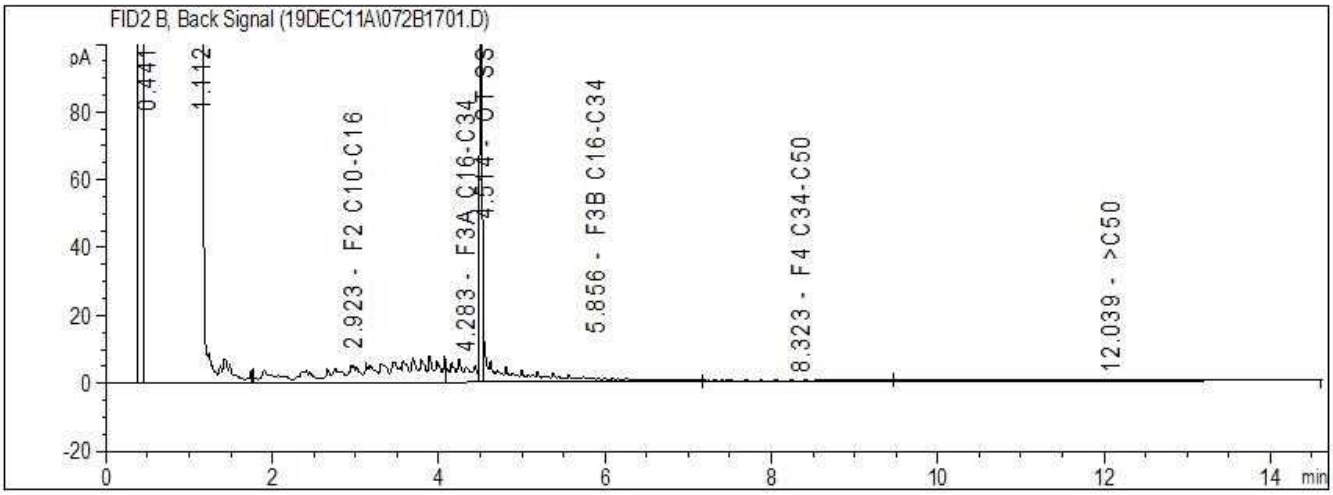
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

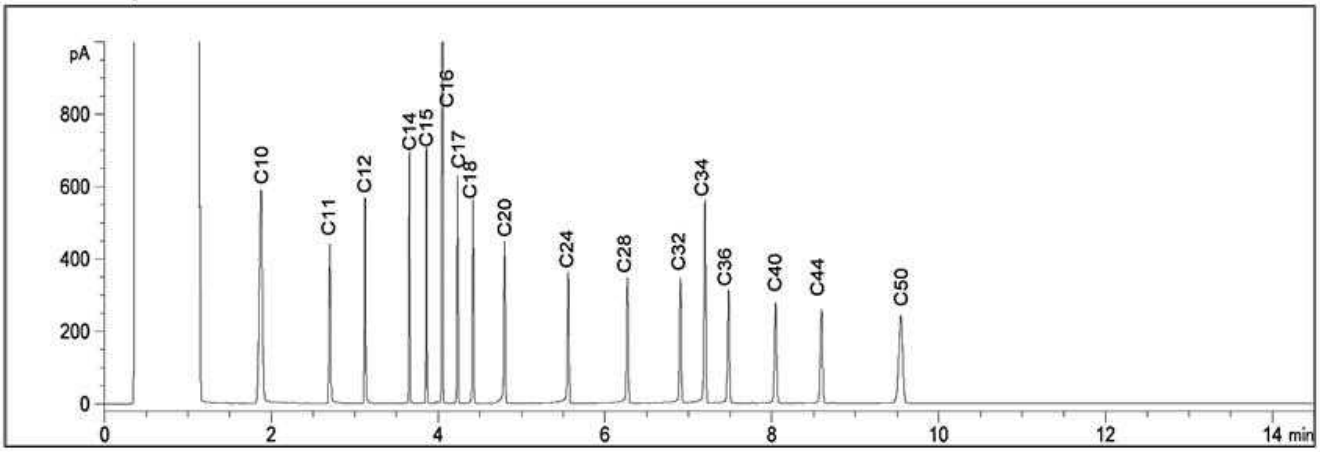
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU962

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH9-SS4

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

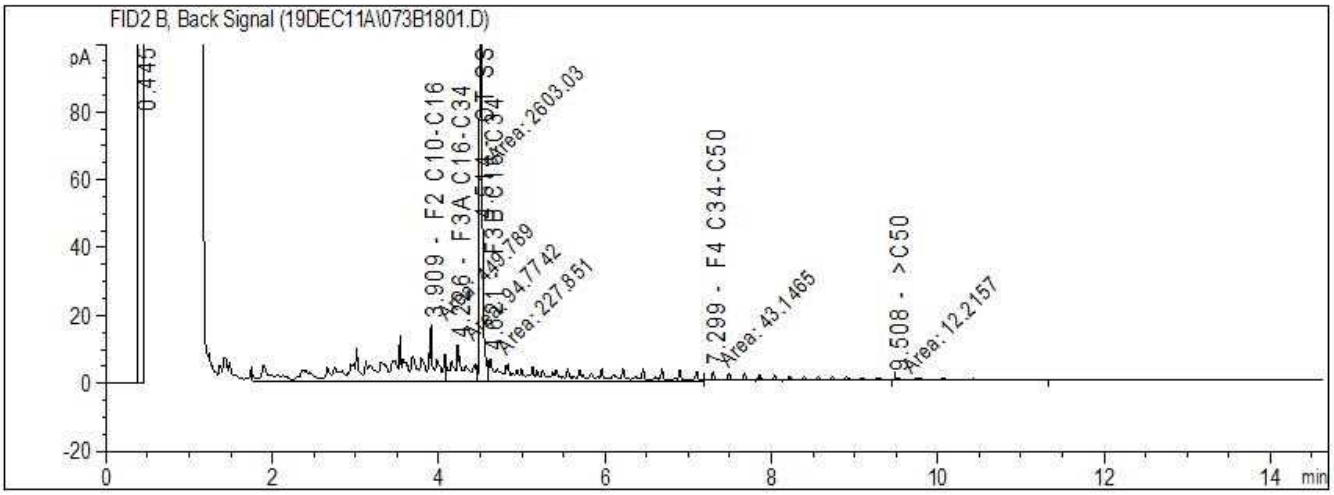
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

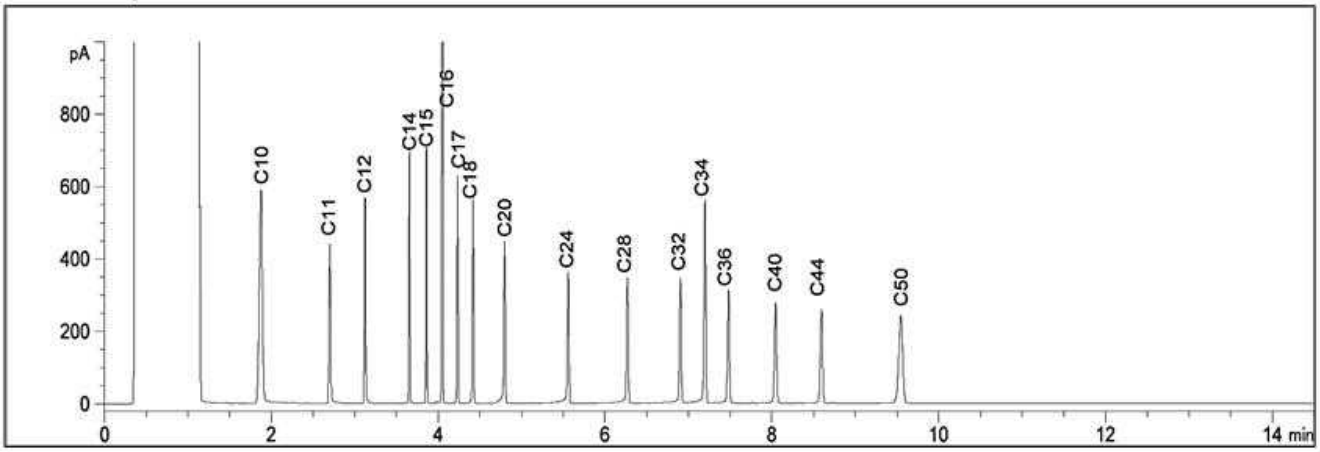
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU962 Lab-Dup

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH9-SS4

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

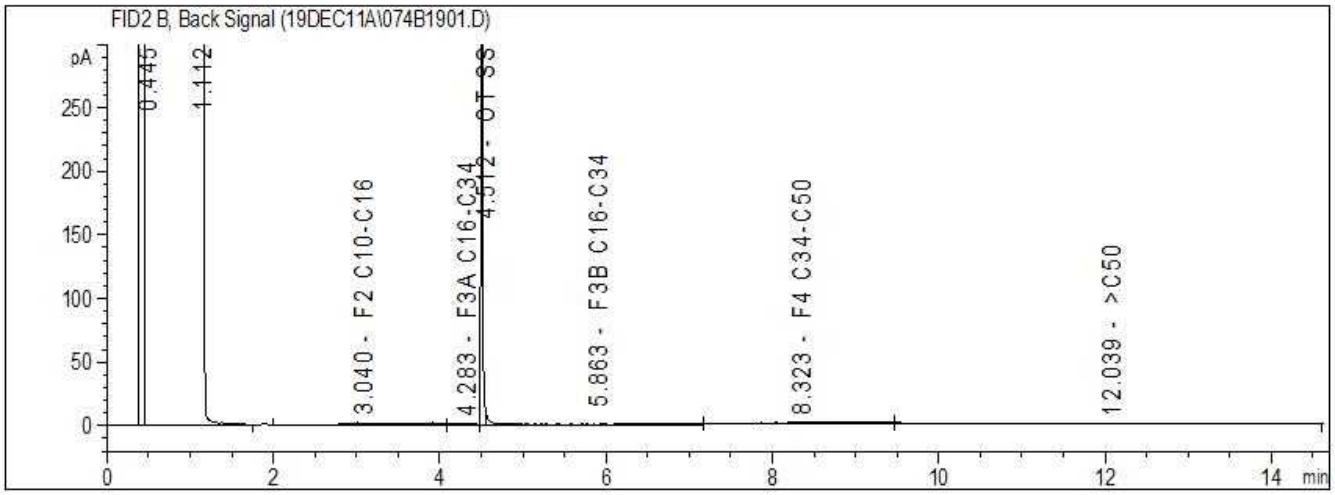
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

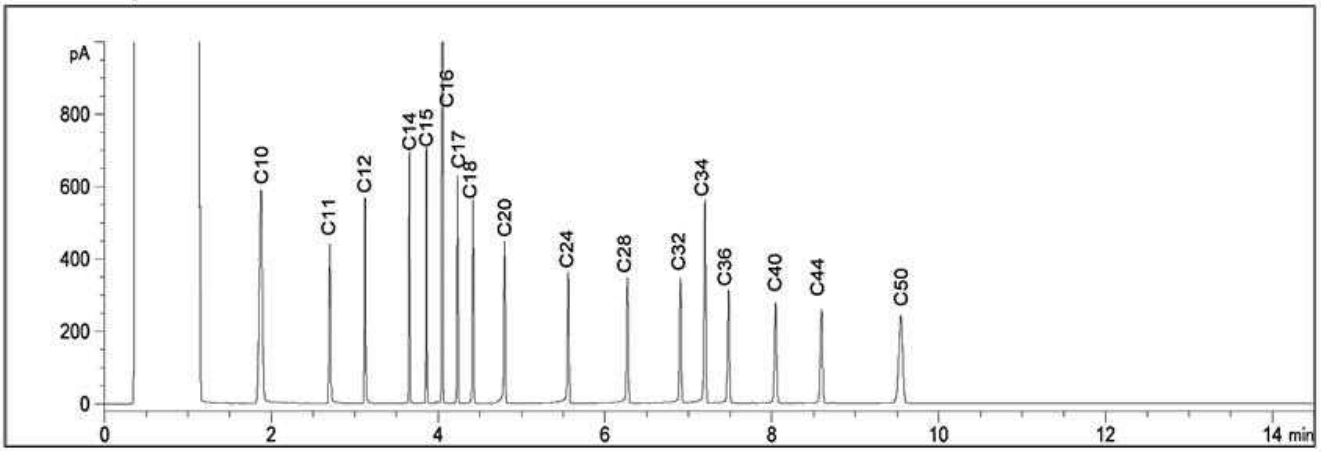
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU963

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH10-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

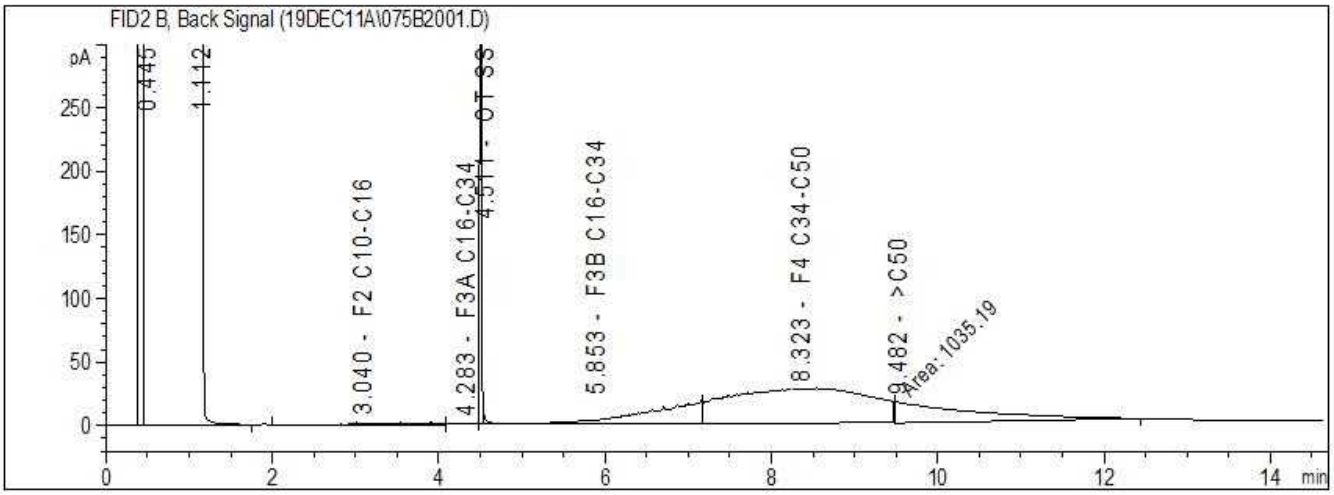
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

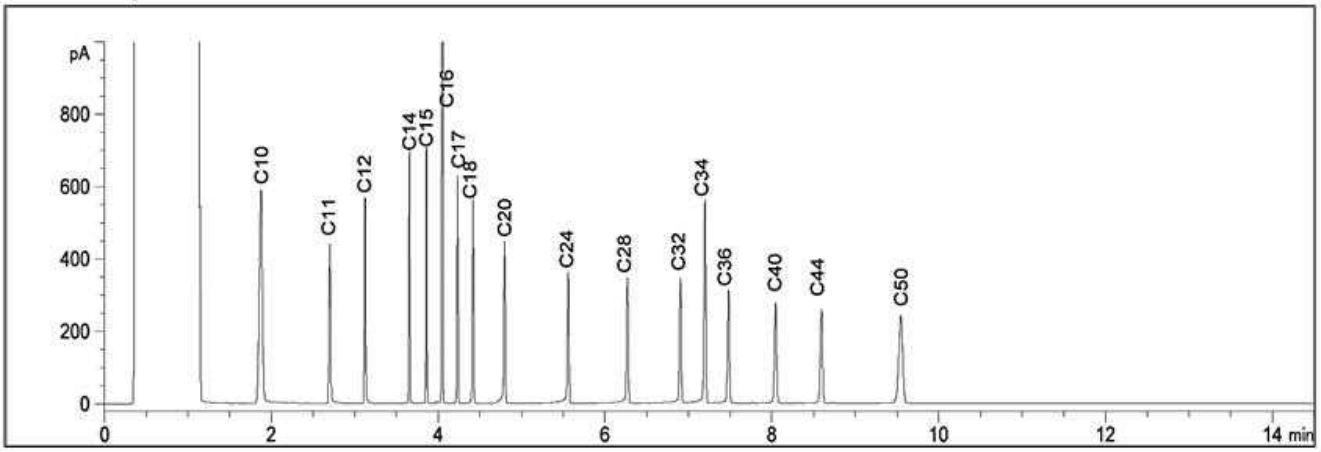
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU965

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH10-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

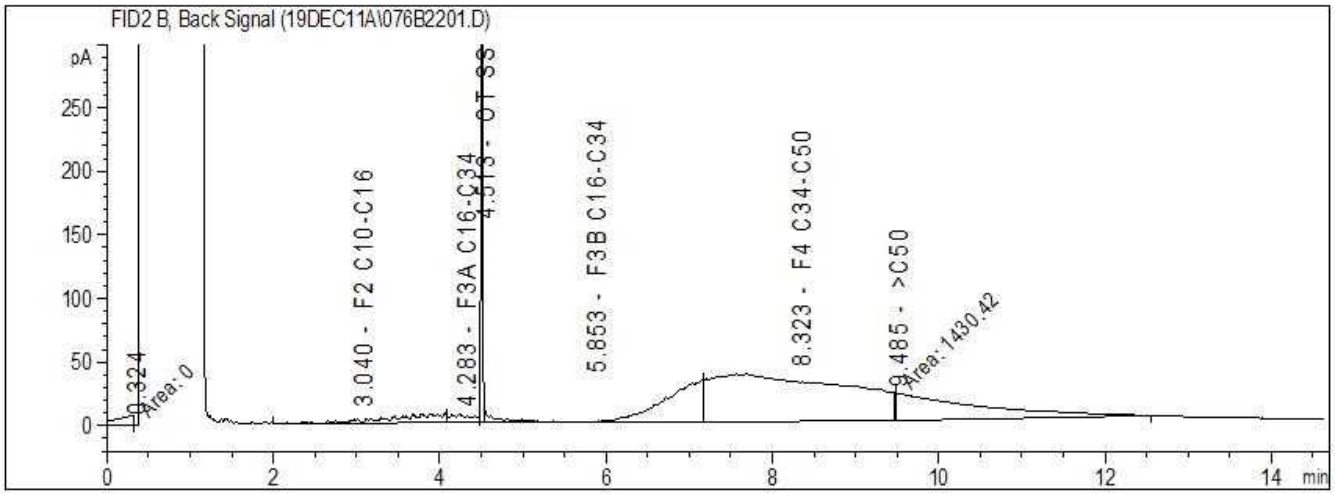
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

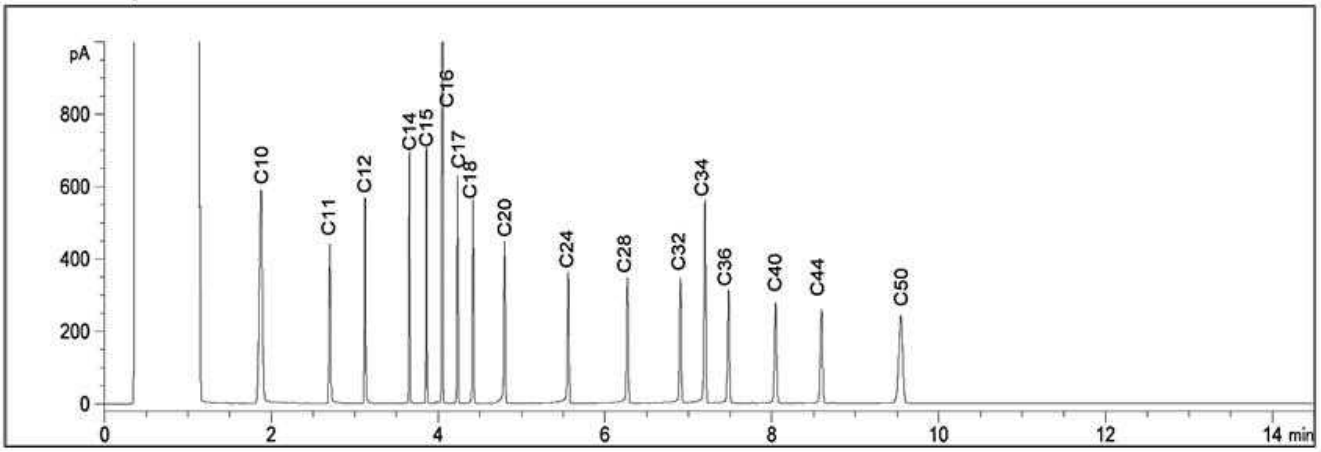
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU966

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH10-SS4

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

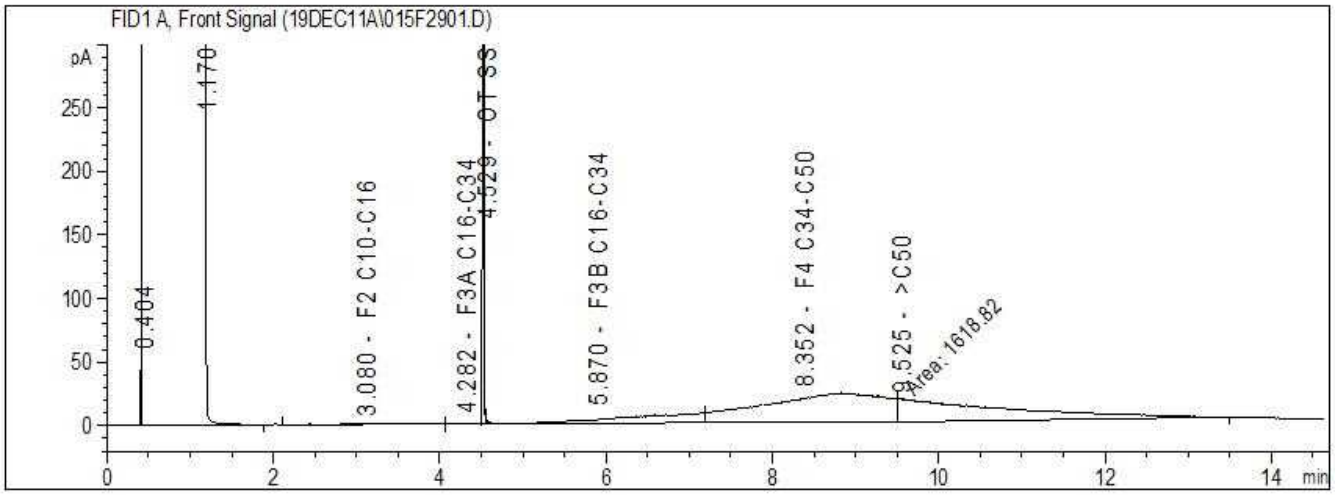
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

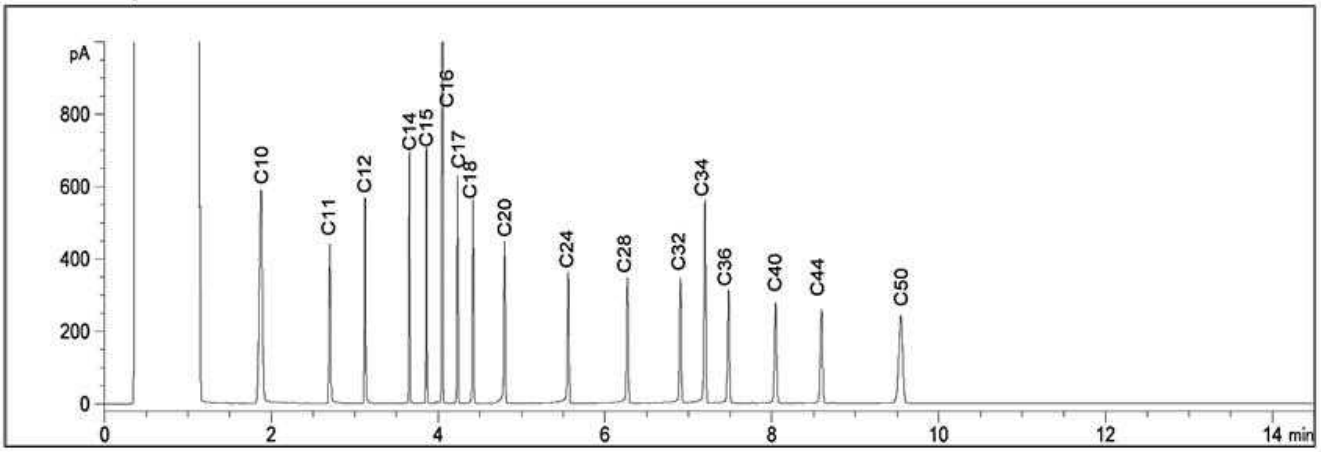
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU967

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH11-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

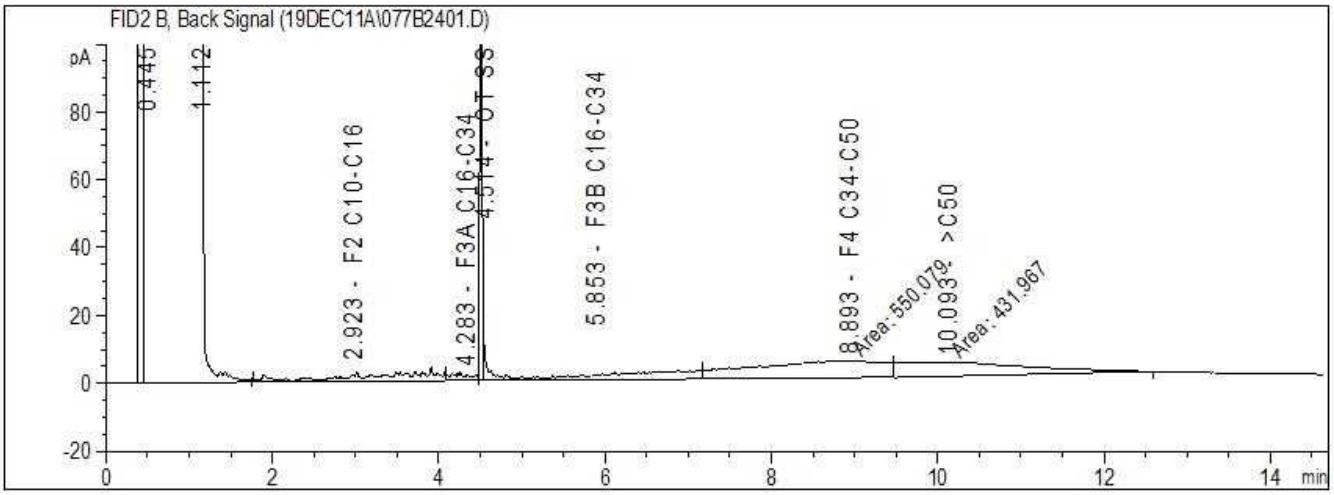
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

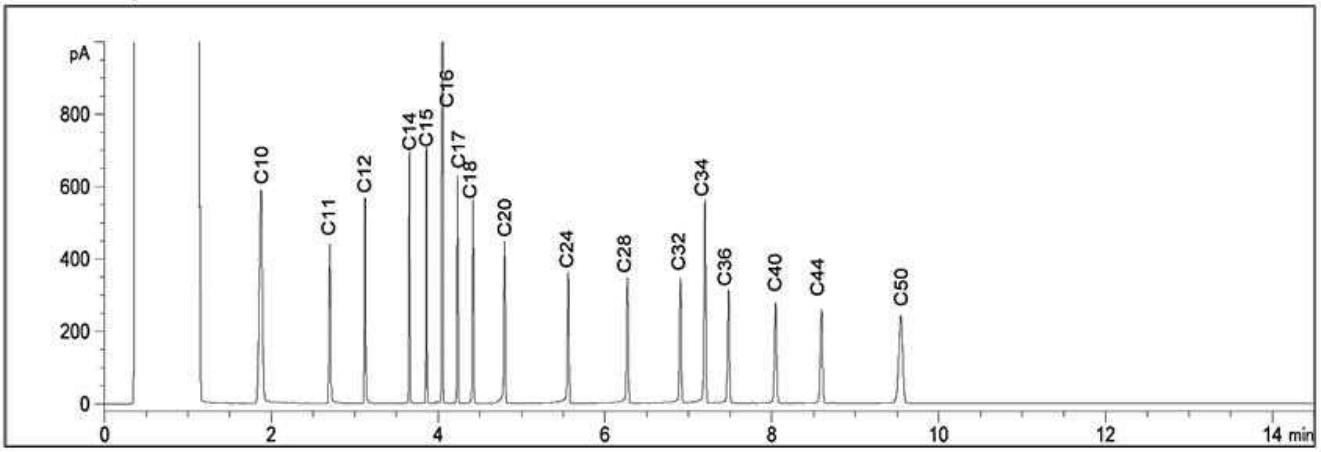
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU968

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH11-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

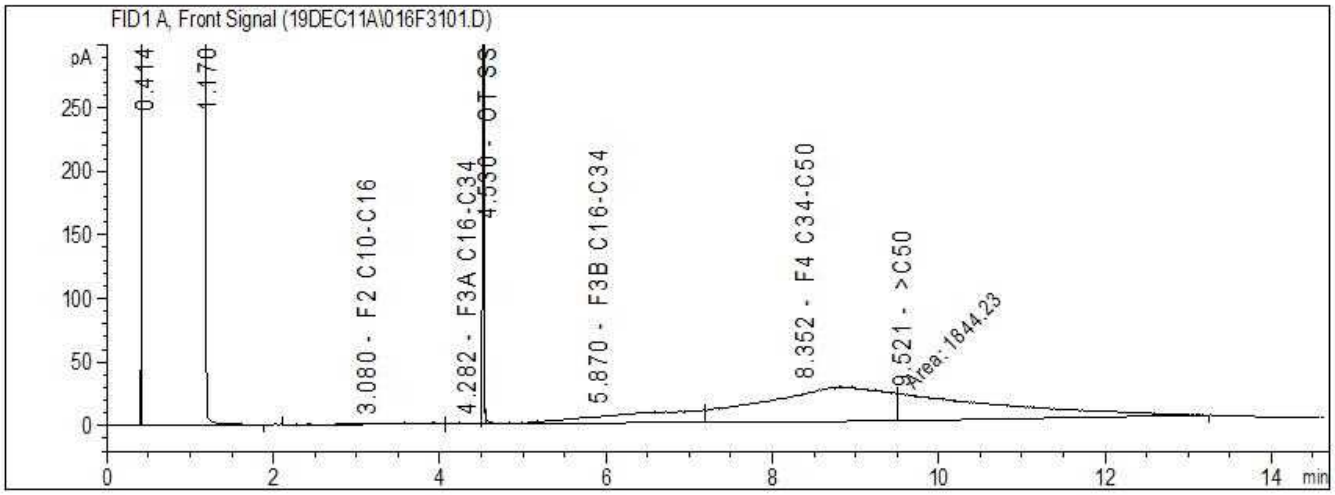
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

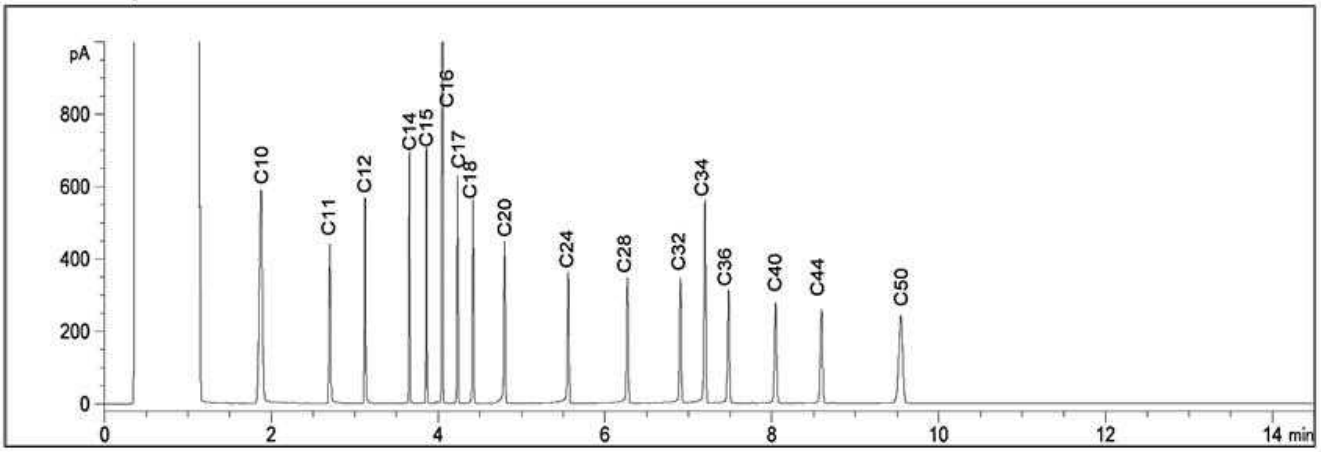
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU969

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH12-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

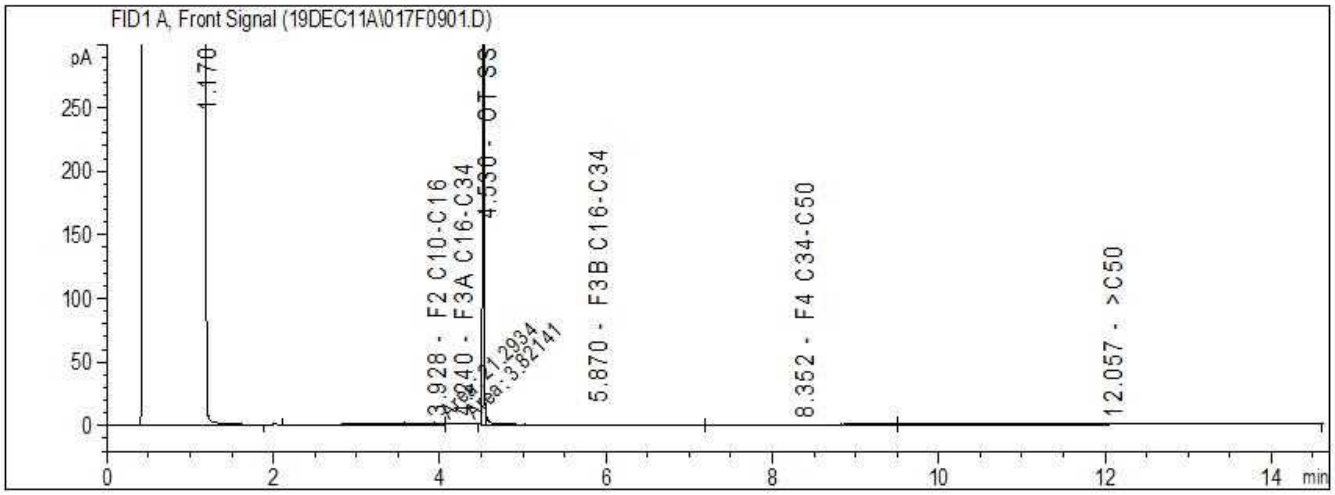
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

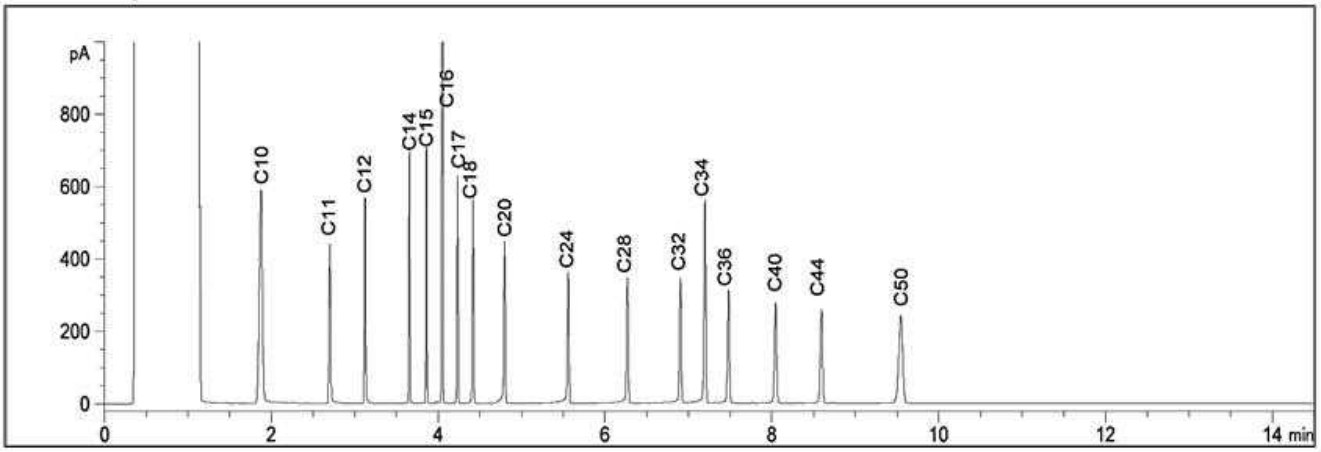
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU971

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH12-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

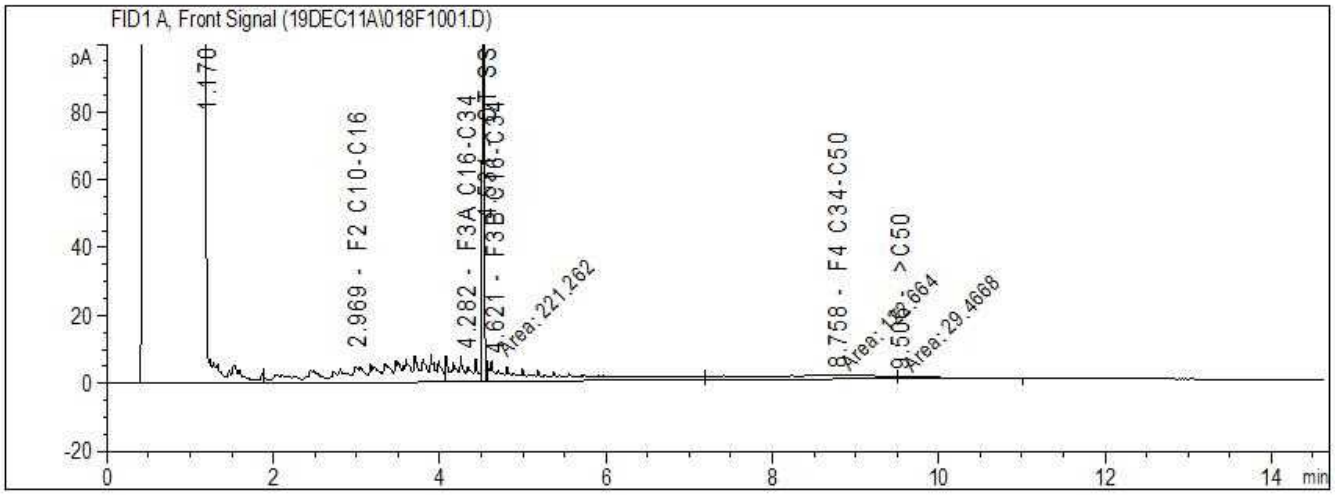
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

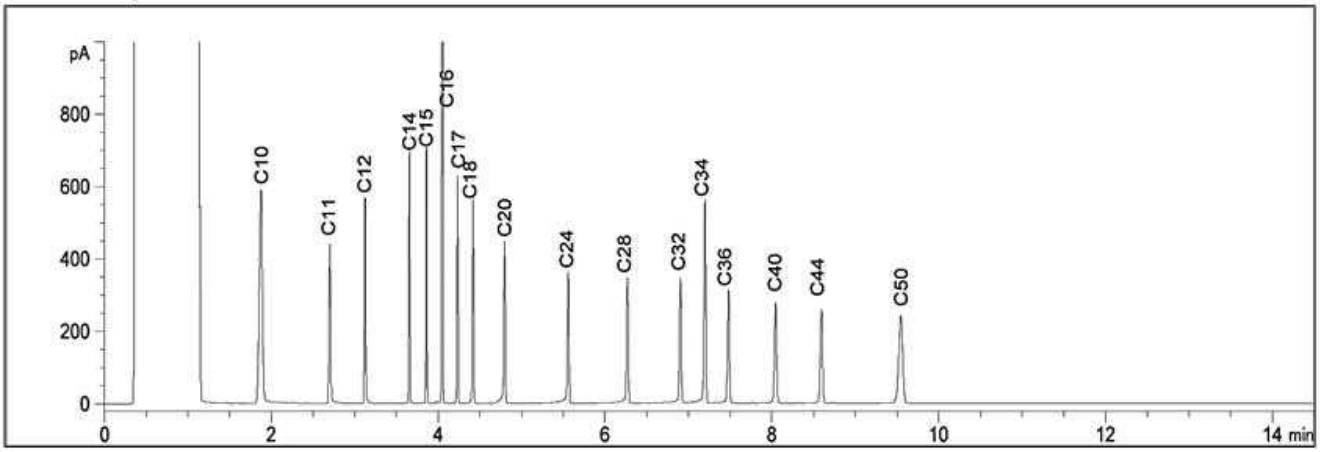
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU972

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH12-SS4

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

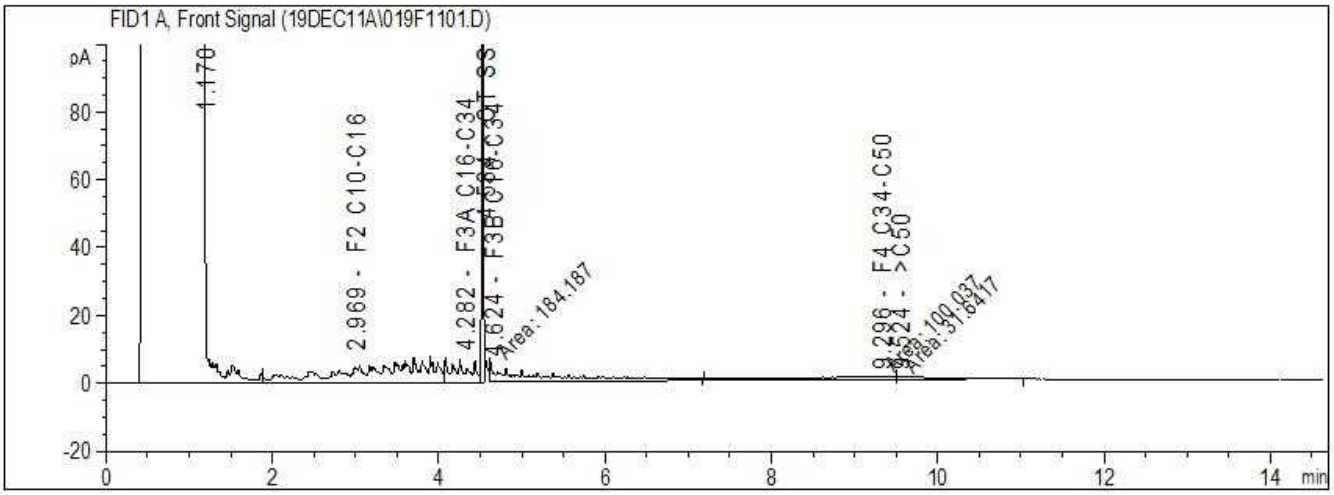
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

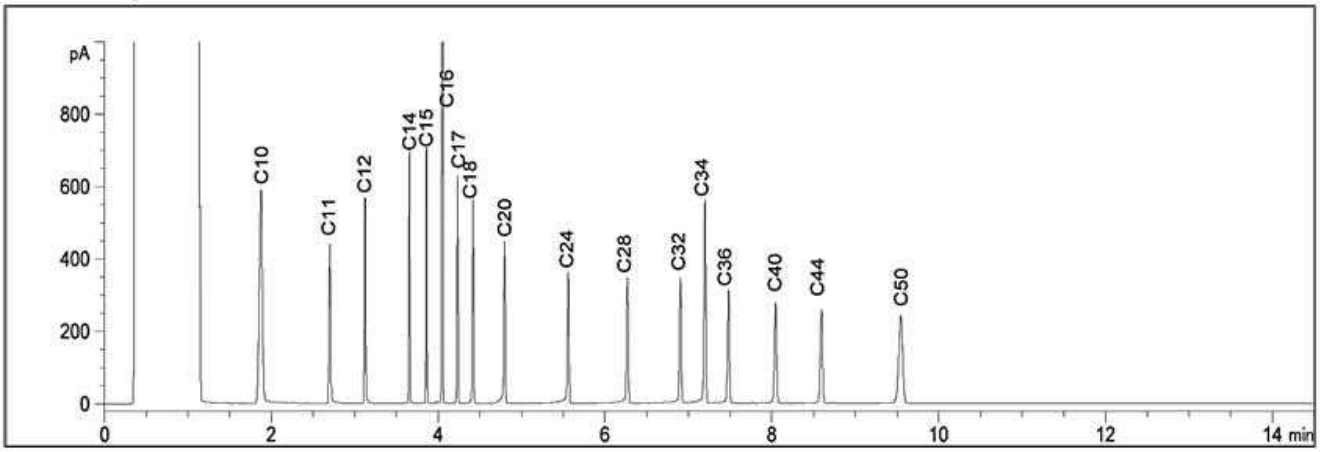
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU972 Lab-Dup

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH12-SS4

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

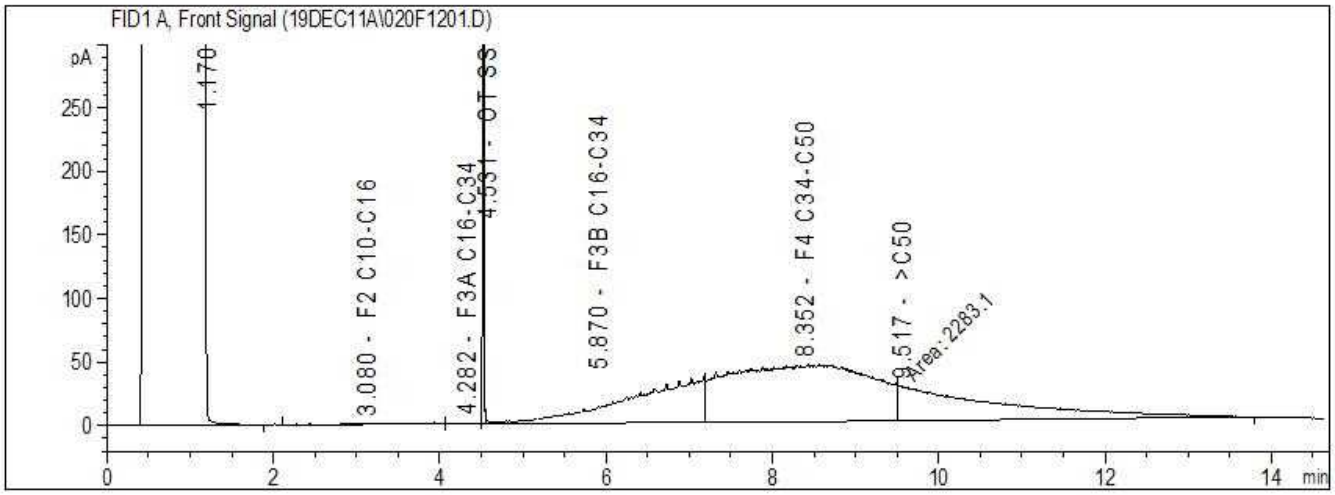
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

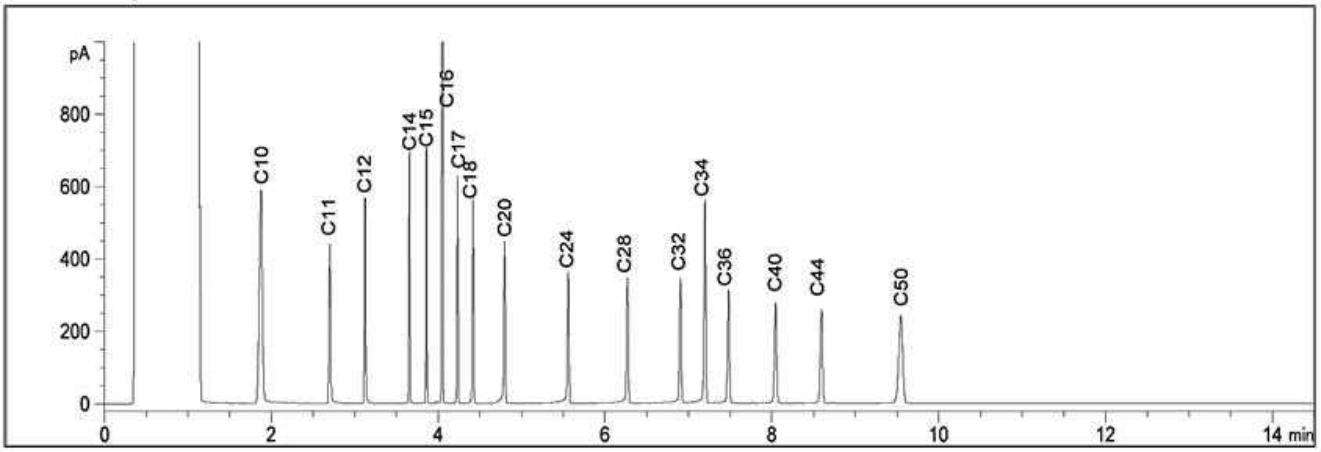
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU973

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH13-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

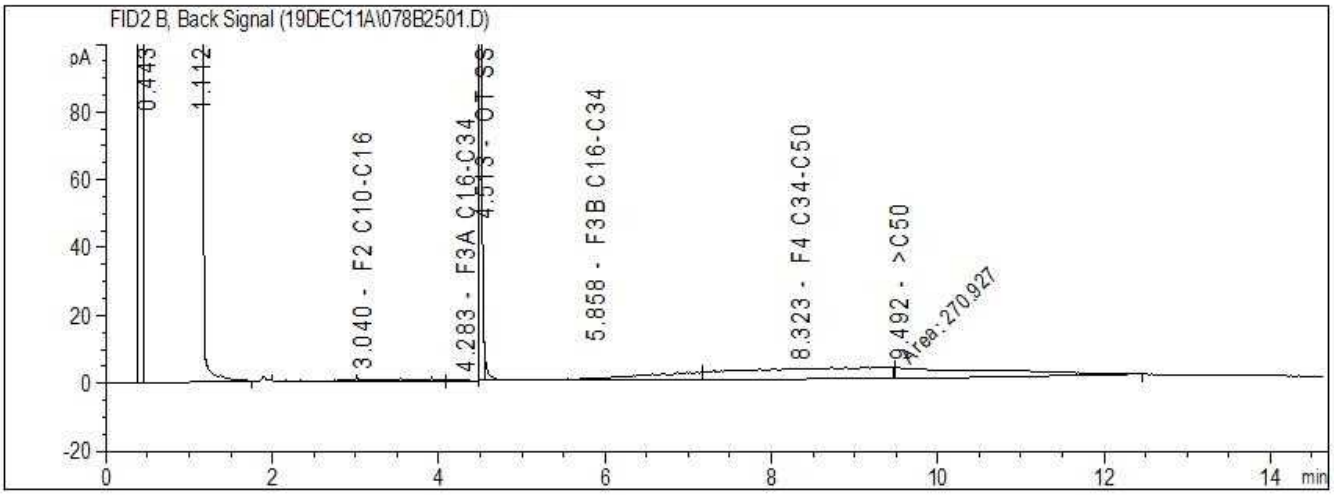
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

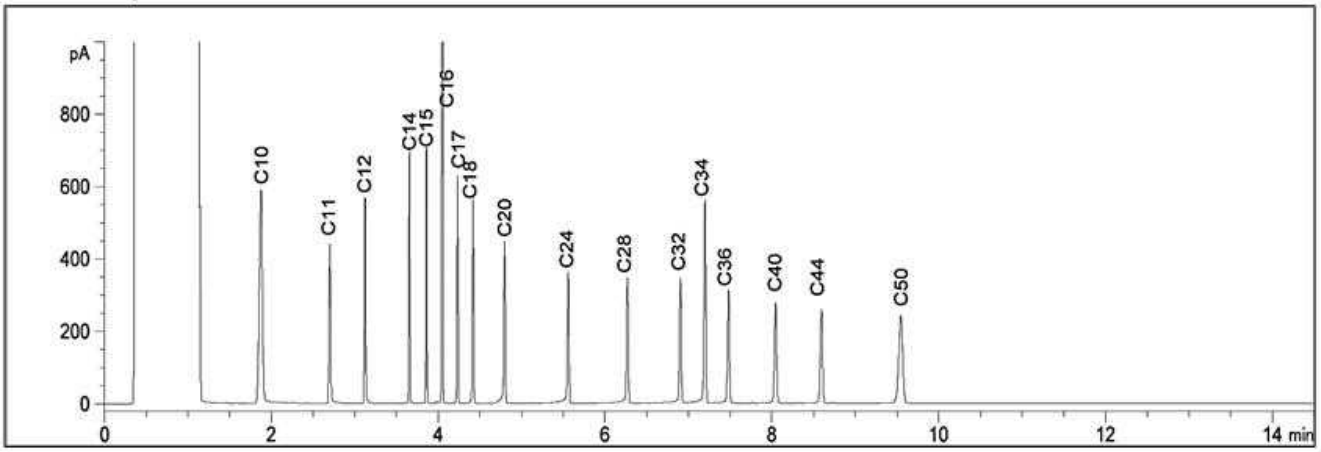
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU974

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH13-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

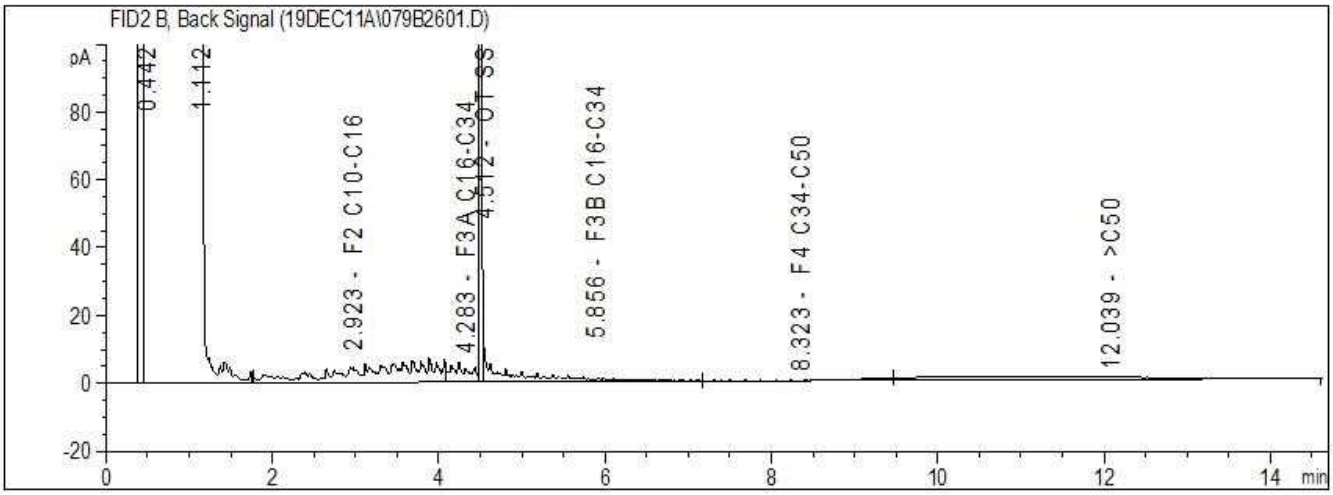
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

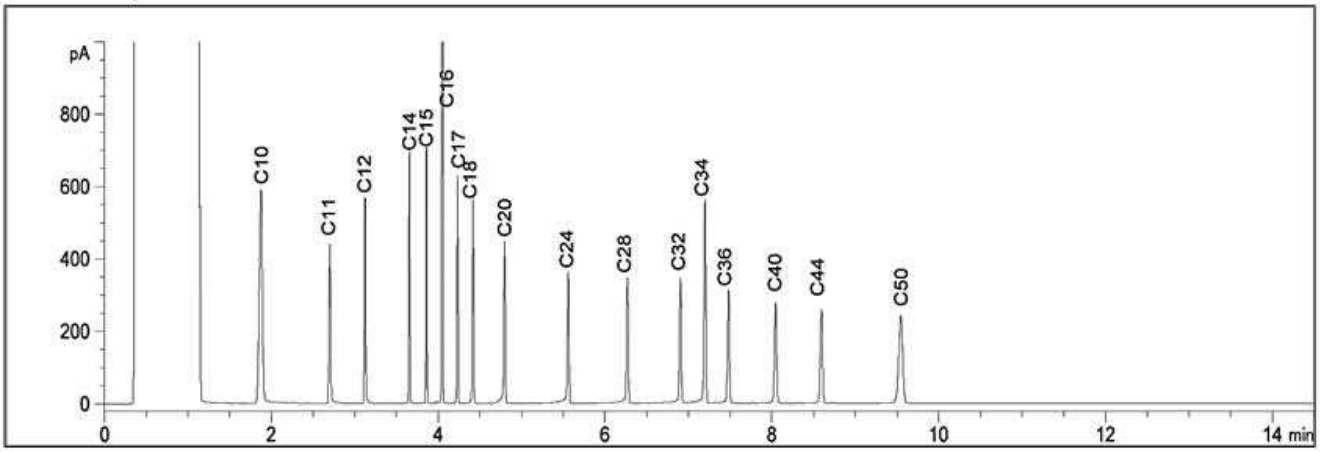
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU975

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH13-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

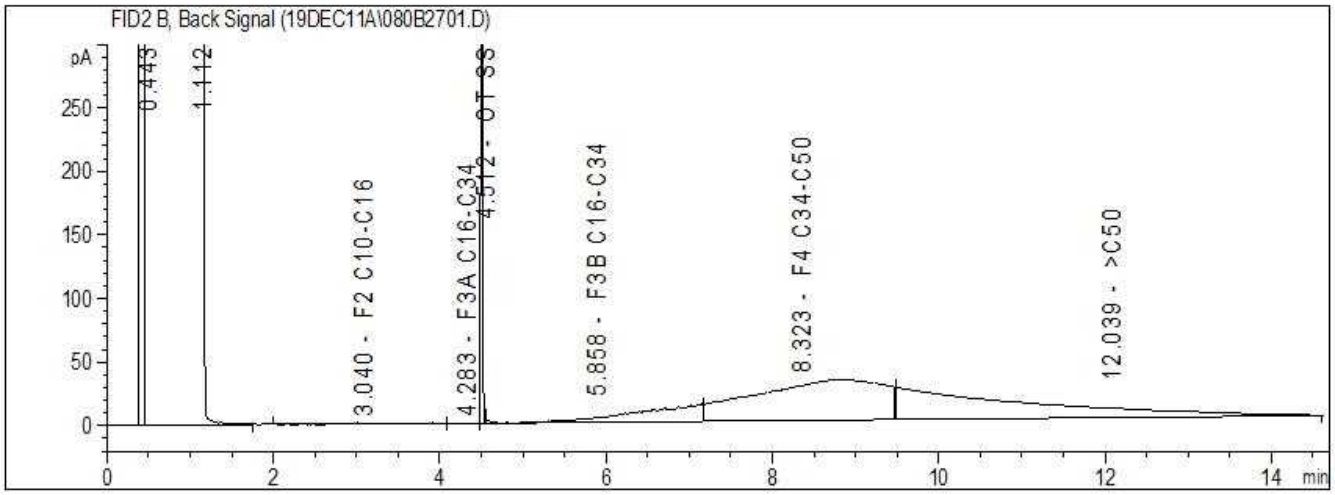
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

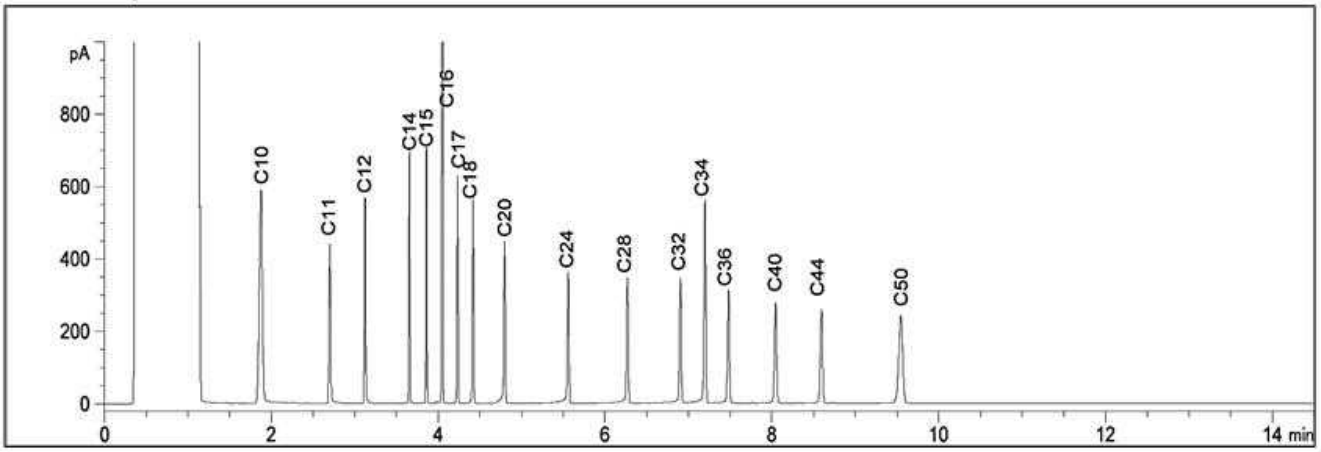
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU976

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH14-SS1

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

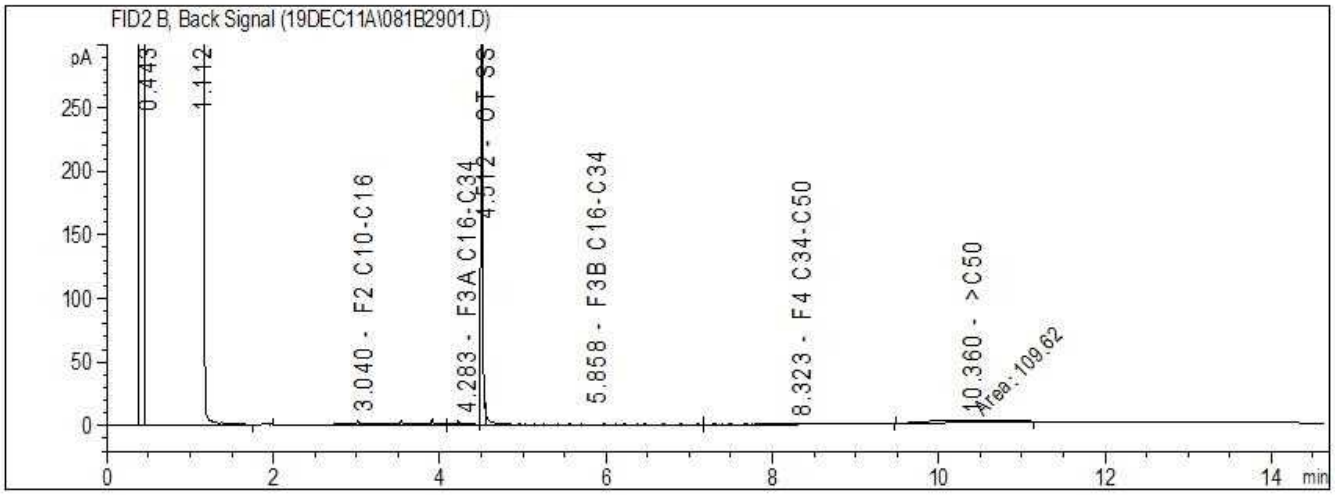
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

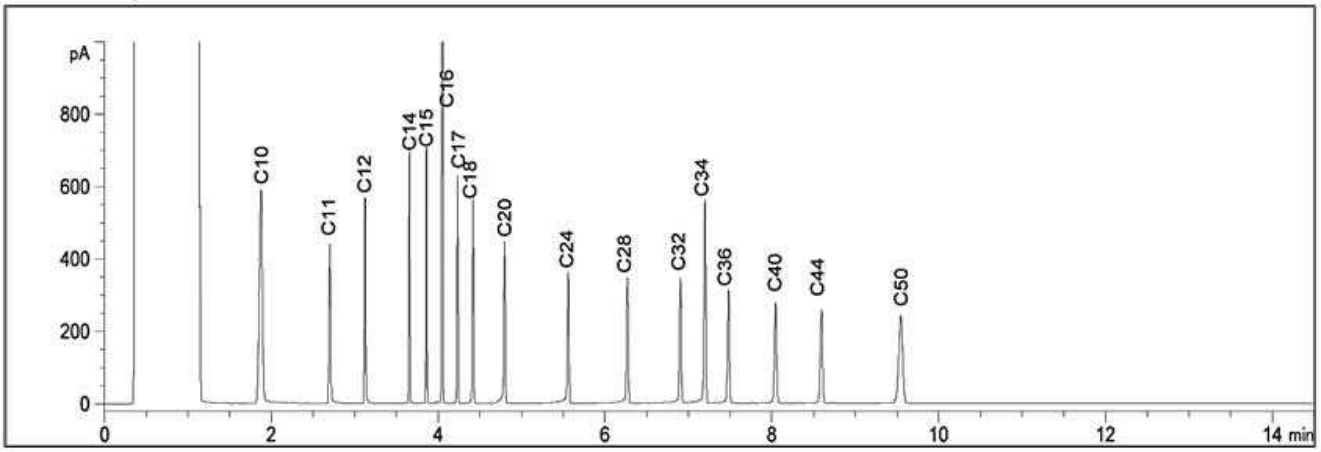
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU977

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH14-SS2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

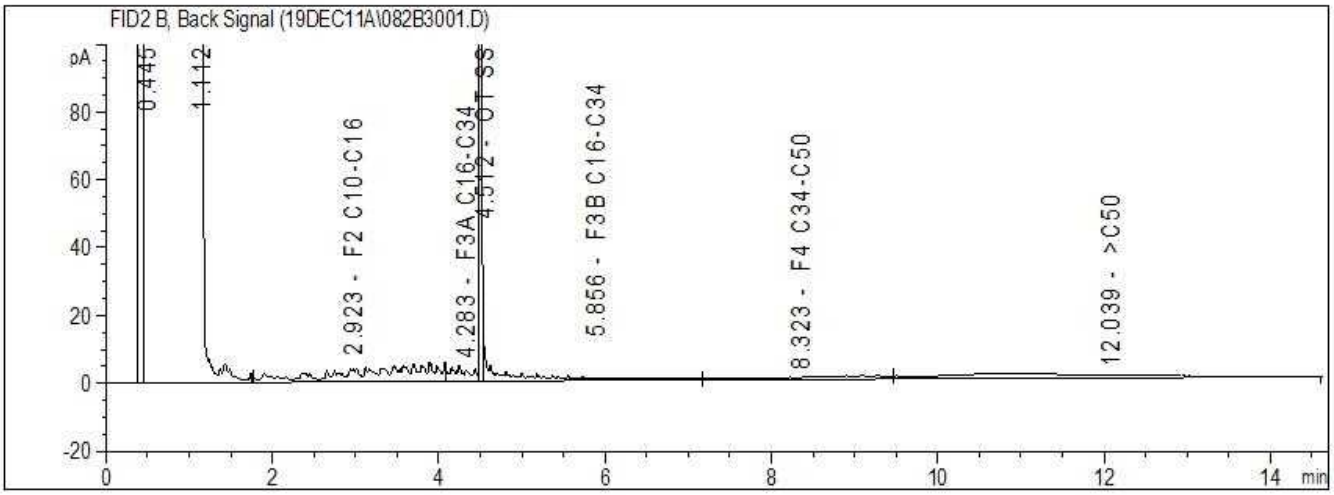
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

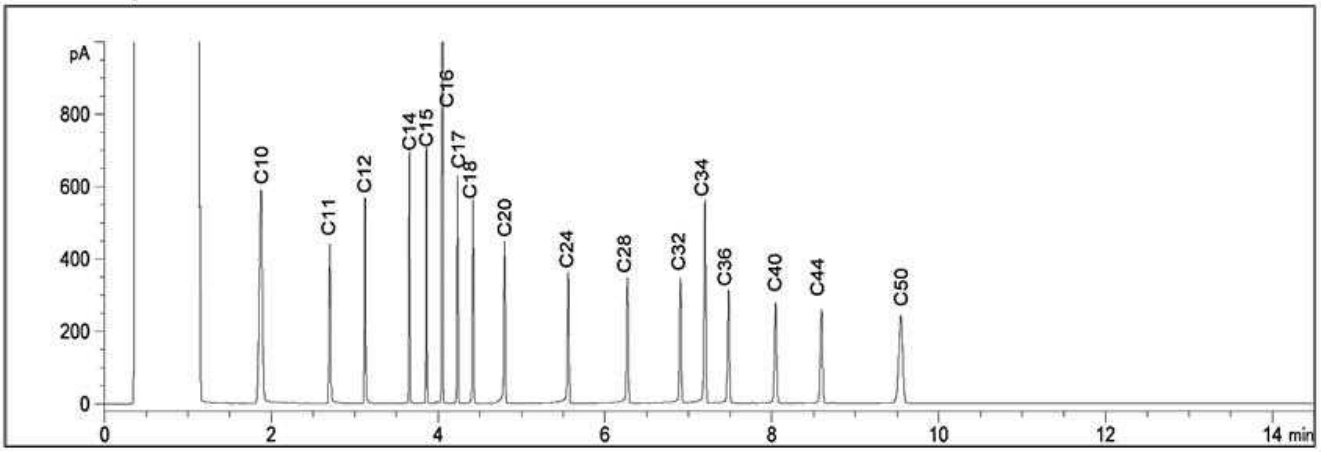
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU978

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-BH14-SS3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

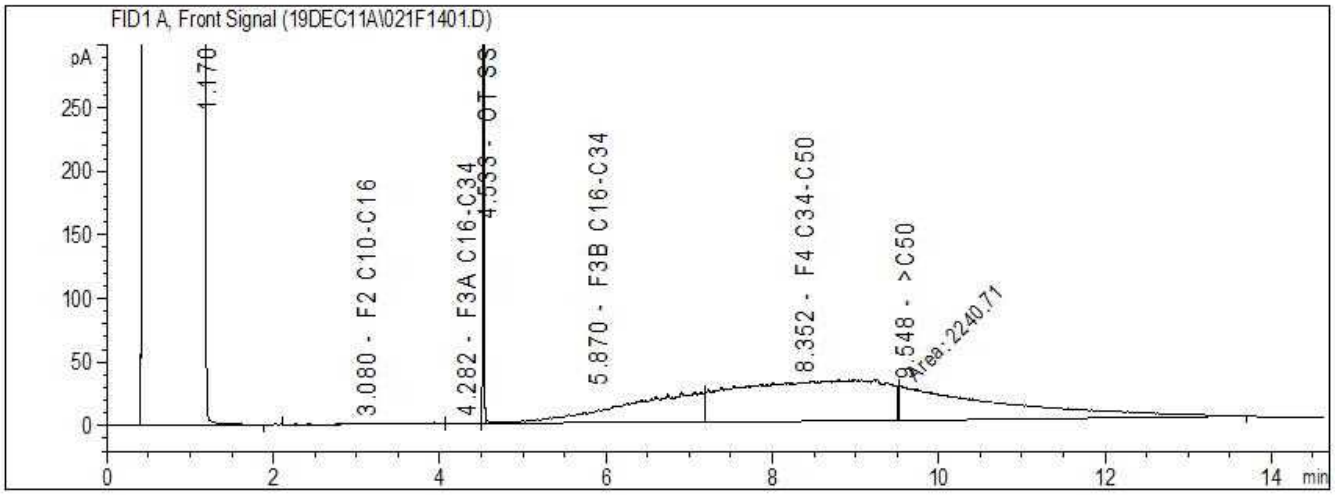
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

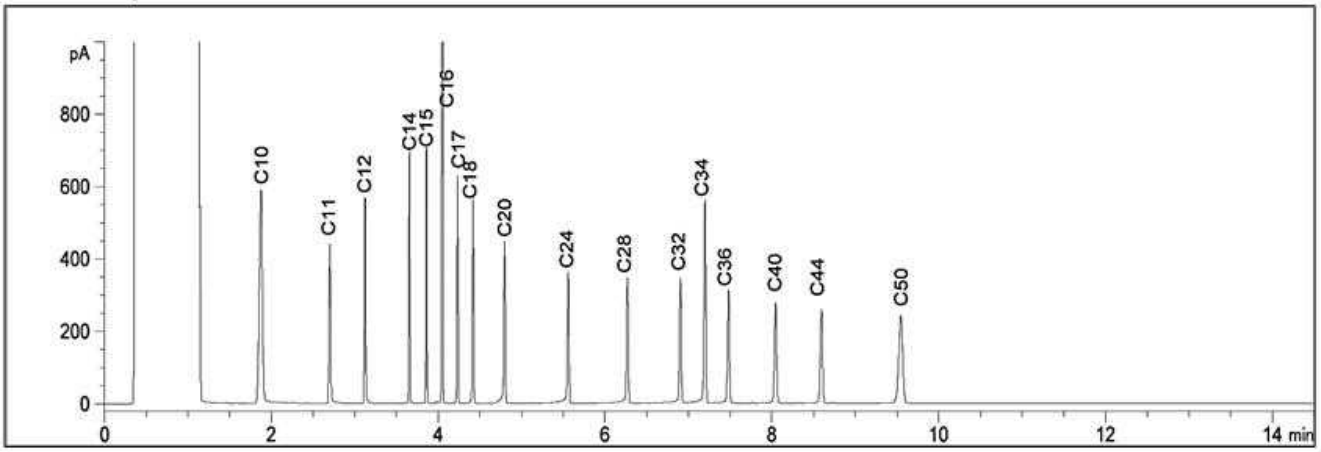
BV Labs Job #: B9Y4500
Report Date: 2019/12/18
BV Labs Sample: LMU979

GHD Limited
Client Project #: 11205379-20
Project name: OTTAWA, ON
Client ID: 11205379-DUP2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 73518145
Your Project #: 11205379-20
Your C.O.C. #: 751787-01-01

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/01/10
Report #: R6033007
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C000934
Received: 2020/01/02, 15:58

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	4	N/A	2020/01/06	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	5	N/A	2020/01/08		EPA 8260C m
Chloride by Automated Colourimetry	4	N/A	2020/01/06	CAM SOP-00463	SM 23 4500-Cl E m
Chromium (VI) in Water	4	N/A	2020/01/07	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide	4	N/A	2020/01/06	CAM SOP-00457	OMOE E3015 m
Petroleum Hydrocarbons F2-F4 in Water (1)	4	2020/01/03	2020/01/04	CAM SOP-00316	CCME PHC-CWS m
Mercury	4	2020/01/07	2020/01/07	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	1	N/A	2020/01/06	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	3	N/A	2020/01/07	CAM SOP-00447	EPA 6020B m
OC Pesticides (Selected) & PCB (2)	4	2020/01/06	2020/01/07	CAM SOP-00307	EPA 8081A/8082B m
OC Pesticides Summed Parameters	4	N/A	2020/01/06	CAM SOP-00307	EPA 8081A/8082B m
PAH Compounds in Water by GC/MS (SIM)	2	2020/01/03	2020/01/03	CAM SOP-00318	EPA 8270D m
PAH Compounds in Water by GC/MS (SIM)	2	2020/01/03	2020/01/04	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs	5	N/A	2020/01/07	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 73518145
Your Project #: 11205379-20
Your C.O.C. #: 751787-01-01

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/01/10
Report #: R6033007
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C000934
Received: 2020/01/02, 15:58

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(2) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829

==========

This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID		LRO409		
Sampling Date		2019/09/03		
COC Number		751787-01-01		
	UNITS	TBLK-FIBB-19-4716	RDL	QC Batch
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/L	ND	0.50	6522422
Volatile Organics				
Acetone (2-Propanone)	ug/L	ND	10	6524472
Benzene	ug/L	ND	0.20	6524472
Bromodichloromethane	ug/L	ND	0.50	6524472
Bromoform	ug/L	ND	1.0	6524472
Bromomethane	ug/L	ND	0.50	6524472
Carbon Tetrachloride	ug/L	ND	0.20	6524472
Chlorobenzene	ug/L	ND	0.20	6524472
Chloroform	ug/L	ND	0.20	6524472
Dibromochloromethane	ug/L	ND	0.50	6524472
1,2-Dichlorobenzene	ug/L	ND	0.50	6524472
1,3-Dichlorobenzene	ug/L	ND	0.50	6524472
1,4-Dichlorobenzene	ug/L	ND	0.50	6524472
Dichlorodifluoromethane (FREON 12)	ug/L	ND	1.0	6524472
1,1-Dichloroethane	ug/L	ND	0.20	6524472
1,2-Dichloroethane	ug/L	ND	0.50	6524472
1,1-Dichloroethylene	ug/L	ND	0.20	6524472
cis-1,2-Dichloroethylene	ug/L	ND	0.50	6524472
trans-1,2-Dichloroethylene	ug/L	ND	0.50	6524472
1,2-Dichloropropane	ug/L	ND	0.20	6524472
cis-1,3-Dichloropropene	ug/L	ND	0.30	6524472
trans-1,3-Dichloropropene	ug/L	ND	0.40	6524472
Ethylbenzene	ug/L	ND	0.20	6524472
Ethylene Dibromide	ug/L	ND	0.20	6524472
Hexane	ug/L	ND	1.0	6524472
Methylene Chloride(Dichloromethane)	ug/L	ND	2.0	6524472
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	10	6524472
Methyl Isobutyl Ketone	ug/L	ND	5.0	6524472
Methyl t-butyl ether (MTBE)	ug/L	ND	0.50	6524472
Styrene	ug/L	ND	0.50	6524472
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	6524472
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	6524472
Tetrachloroethylene	ug/L	ND	0.20	6524472

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID		LRO409		
Sampling Date		2019/09/03		
COC Number		751787-01-01		
	UNITS	TBLK-FIBB-19-4716	RDL	QC Batch
Toluene	ug/L	ND	0.20	6524472
1,1,1-Trichloroethane	ug/L	ND	0.20	6524472
1,1,2-Trichloroethane	ug/L	ND	0.50	6524472
Trichloroethylene	ug/L	ND	0.20	6524472
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.50	6524472
Vinyl Chloride	ug/L	ND	0.20	6524472
p+m-Xylene	ug/L	ND	0.20	6524472
o-Xylene	ug/L	ND	0.20	6524472
Total Xylenes	ug/L	ND	0.20	6524472
F1 (C6-C10)	ug/L	ND	25	6524472
F1 (C6-C10) - BTEX	ug/L	ND	25	6524472
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	97		6524472
D4-1,2-Dichloroethane	%	107		6524472
D8-Toluene	%	102		6524472

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

BV Labs Job #: C000934
Report Date: 2020/01/10

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		LRO405		LRO406			LRO407		
Sampling Date		2020/01/02 10:32		2020/01/02 11:52			2020/01/02 13:30		
COC Number		751787-01-01		751787-01-01			751787-01-01		
	UNITS	GW-11205379-20-010220-JC-001	RDL	GW-11205379-20-010220-JC-002	RDL	QC Batch	GW-11205379-20-010220-JC-003	RDL	QC Batch
Inorganics									
WAD Cyanide (Free)	ug/L	ND	1	2	1	6524775	ND	1	6524775
Dissolved Chloride (Cl-)	mg/L	7200	80	17000	120	6523944	6200	60	6523472
Metals									
Chromium (VI)	ug/L	ND	2.5	2.7	2.5	6525538	ND	2.5	6525538
Mercury (Hg)	ug/L	ND	0.1	ND	0.1	6526055	ND	0.1	6526055
Dissolved Antimony (Sb)	ug/L	ND	2.5	ND	2.5	6524459	ND	2.5	6524096
Dissolved Arsenic (As)	ug/L	ND	5.0	ND	5.0	6524459	ND	5.0	6524096
Dissolved Barium (Ba)	ug/L	310	10	170	10	6524459	140	10	6524096
Dissolved Beryllium (Be)	ug/L	ND	2.5	ND	2.5	6524459	ND	2.5	6524096
Dissolved Boron (B)	ug/L	370	50	200	50	6524459	610	50	6524096
Dissolved Cadmium (Cd)	ug/L	ND	0.50	2.0	0.50	6524459	ND	0.50	6524096
Dissolved Chromium (Cr)	ug/L	ND	25	ND	25	6524459	ND	25	6524096
Dissolved Cobalt (Co)	ug/L	ND	2.5	17	2.5	6524459	13	2.5	6524096
Dissolved Copper (Cu)	ug/L	ND	5.0	ND	5.0	6524459	ND	5.0	6524096
Dissolved Lead (Pb)	ug/L	ND	2.5	ND	2.5	6524459	ND	2.5	6524096
Dissolved Molybdenum (Mo)	ug/L	ND	2.5	33	2.5	6524459	29	2.5	6524096
Dissolved Nickel (Ni)	ug/L	ND	5.0	44	5.0	6524459	33	5.0	6524096
Dissolved Selenium (Se)	ug/L	ND	10	43	10	6524459	ND	10	6524096
Dissolved Silver (Ag)	ug/L	ND	0.50	ND	0.50	6524459	ND	0.50	6524096
Dissolved Sodium (Na)	ug/L	4400000	1000	11000000	5000	6524459	3200000	1000	6524096
Dissolved Thallium (Tl)	ug/L	ND	0.25	0.35	0.25	6524459	ND	0.25	6524096
Dissolved Uranium (U)	ug/L	1.8	0.50	120	0.50	6524459	14	0.50	6524096
Dissolved Vanadium (V)	ug/L	ND	2.5	ND	2.5	6524459	ND	2.5	6524096
Dissolved Zinc (Zn)	ug/L	ND	25	ND	25	6524459	ND	25	6524096

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		LRO408		
Sampling Date		2020/01/02 14:07		
COC Number		751787-01-01		
	UNITS	GW-11205379-20-010220-JC-004	RDL	QC Batch
Inorganics				
WAD Cyanide (Free)	ug/L	ND	1	6524775
Dissolved Chloride (Cl-)	mg/L	4300	50	6523944
Metals				
Chromium (VI)	ug/L	ND	2.5	6525538
Mercury (Hg)	ug/L	ND	0.1	6526055
Dissolved Antimony (Sb)	ug/L	ND	2.5	6524459
Dissolved Arsenic (As)	ug/L	ND	5.0	6524459
Dissolved Barium (Ba)	ug/L	590	10	6524459
Dissolved Beryllium (Be)	ug/L	ND	2.5	6524459
Dissolved Boron (B)	ug/L	510	50	6524459
Dissolved Cadmium (Cd)	ug/L	ND	0.50	6524459
Dissolved Chromium (Cr)	ug/L	ND	25	6524459
Dissolved Cobalt (Co)	ug/L	ND	2.5	6524459
Dissolved Copper (Cu)	ug/L	ND	5.0	6524459
Dissolved Lead (Pb)	ug/L	ND	2.5	6524459
Dissolved Molybdenum (Mo)	ug/L	ND	2.5	6524459
Dissolved Nickel (Ni)	ug/L	ND	5.0	6524459
Dissolved Selenium (Se)	ug/L	ND	10	6524459
Dissolved Silver (Ag)	ug/L	ND	0.50	6524459
Dissolved Sodium (Na)	ug/L	2400000	500	6524459
Dissolved Thallium (Tl)	ug/L	ND	0.25	6524459
Dissolved Uranium (U)	ug/L	1.3	0.50	6524459
Dissolved Vanadium (V)	ug/L	ND	2.5	6524459
Dissolved Zinc (Zn)	ug/L	ND	25	6524459

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

BV Labs Job #: C000934
Report Date: 2020/01/10

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		LRO405	LRO406	LRO407	LRO408		
Sampling Date		2020/01/02 10:32	2020/01/02 11:52	2020/01/02 13:30	2020/01/02 14:07		
COC Number		751787-01-01	751787-01-01	751787-01-01	751787-01-01		
	UNITS	GW-11205379-20-010220-JC-001	GW-11205379-20-010220-JC-002	GW-11205379-20-010220-JC-003	GW-11205379-20-010220-JC-004	RDL	QC Batch
Calculated Parameters							
Chlordane (Total)	ug/L	ND	ND	ND	ND	0.005	6522423
o,p-DDD + p,p-DDD	ug/L	ND	ND	ND	ND	0.005	6522423
o,p-DDE + p,p-DDE	ug/L	ND	ND	ND	ND	0.005	6522423
o,p-DDT + p,p-DDT	ug/L	ND	ND	ND	ND	0.005	6522423
Total Endosulfan	ug/L	ND	ND	ND	ND	0.005	6522423
Total PCB	ug/L	ND	ND	ND	ND	0.05	6522423
Pesticides & Herbicides							
Aldrin	ug/L	ND	ND	ND	ND	0.005	6524361
Dieldrin	ug/L	ND	ND	ND	ND	0.005	6524361
a-Chlordane	ug/L	ND	ND	ND	ND	0.005	6524361
g-Chlordane	ug/L	ND	ND	ND	ND	0.005	6524361
o,p-DDD	ug/L	ND	ND	ND	ND	0.005	6524361
p,p-DDD	ug/L	ND	ND	ND	ND	0.005	6524361
o,p-DDE	ug/L	ND	ND	ND	ND	0.005	6524361
p,p-DDE	ug/L	ND	ND	ND	ND	0.005	6524361
o,p-DDT	ug/L	ND	ND	ND	ND	0.005	6524361
p,p-DDT	ug/L	ND	ND	ND	ND	0.005	6524361
Lindane	ug/L	ND	ND	ND	ND	0.003	6524361
Endosulfan I (alpha)	ug/L	ND	ND	ND	ND	0.005	6524361
Endosulfan II (beta)	ug/L	ND	ND	ND	ND	0.005	6524361
Endrin	ug/L	ND	ND	ND	ND	0.005	6524361
Heptachlor	ug/L	ND	ND	ND	ND	0.005	6524361
Heptachlor epoxide	ug/L	ND	ND	ND	ND	0.005	6524361
Hexachlorobenzene	ug/L	ND	ND	ND	ND	0.005	6524361
Hexachlorobutadiene	ug/L	ND	ND	ND	ND	0.009	6524361
Hexachloroethane	ug/L	ND	ND	ND	ND	0.01	6524361
Methoxychlor	ug/L	ND	ND	ND	ND	0.01	6524361
Aroclor 1242	ug/L	ND	ND	ND	ND	0.05	6524361
Aroclor 1248	ug/L	ND	ND	ND	ND	0.05	6524361
Aroclor 1254	ug/L	ND	ND	ND	ND	0.05	6524361
Aroclor 1260	ug/L	ND	ND	ND	ND	0.05	6524361

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C000934
Report Date: 2020/01/10

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		LRO405	LRO406	LRO407	LRO408		
Sampling Date		2020/01/02 10:32	2020/01/02 11:52	2020/01/02 13:30	2020/01/02 14:07		
COC Number		751787-01-01	751787-01-01	751787-01-01	751787-01-01		
	UNITS	GW-11205379-20-010220-JC-001	GW-11205379-20-010220-JC-002	GW-11205379-20-010220-JC-003	GW-11205379-20-010220-JC-004	RDL	QC Batch
Surrogate Recovery (%)							
2,4,5,6-Tetrachloro-m-xylene	%	67	72	89	45 (1)		6524361
Decachlorobiphenyl	%	113	113	121	74		6524361

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) The Surrogate recovery was below the control limit as stipulated by Ontario Regulation 153, however, this recovery is still within Bureau Veritas Laboratories's performance based limits. Results reported with surrogate recoveries within this range are still valid but may have an associated low bias.

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BV Labs Job #: C000934
Report Date: 2020/01/10

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 PAHS (WATER)

BV Labs ID		LRO405	LRO406	LRO407		
Sampling Date		2020/01/02 10:32	2020/01/02 11:52	2020/01/02 13:30		
COC Number		751787-01-01	751787-01-01	751787-01-01		
	UNITS	GW-11205379-20-010220-JC-001	GW-11205379-20-010220-JC-002	GW-11205379-20-010220-JC-003	RDL	QC Batch
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/L	ND	ND	ND	0.071	6522421
Polyaromatic Hydrocarbons						
Acenaphthene	ug/L	ND	ND	ND	0.050	6522593
Acenaphthylene	ug/L	ND	ND	ND	0.050	6522593
Anthracene	ug/L	ND	ND	ND	0.050	6522593
Benzo(a)anthracene	ug/L	ND	ND	ND	0.050	6522593
Benzo(a)pyrene	ug/L	ND	ND	ND	0.010	6522593
Benzo(b/j)fluoranthene	ug/L	ND	ND	ND	0.050	6522593
Benzo(g,h,i)perylene	ug/L	ND	ND	ND	0.050	6522593
Benzo(k)fluoranthene	ug/L	ND	ND	ND	0.050	6522593
Chrysene	ug/L	ND	ND	ND	0.050	6522593
Dibenzo(a,h)anthracene	ug/L	ND	ND	ND	0.050	6522593
Fluoranthene	ug/L	ND	ND	ND	0.050	6522593
Fluorene	ug/L	ND	ND	ND	0.050	6522593
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	ND	0.050	6522593
1-Methylnaphthalene	ug/L	ND	ND	ND	0.050	6522593
2-Methylnaphthalene	ug/L	ND	ND	ND	0.050	6522593
Naphthalene	ug/L	ND	ND	ND	0.050	6522593
Phenanthrene	ug/L	ND	ND	ND	0.030	6522593
Pyrene	ug/L	ND	ND	ND	0.050	6522593
Surrogate Recovery (%)						
D10-Anthracene	%	90	88	93		6522593
D14-Terphenyl (FS)	%	78	74	79		6522593
D8-Acenaphthylene	%	90	85	92		6522593

RDL = Reportable Detection Limit
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ND = Not detected

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 PAHS (WATER)

BV Labs ID		LRO407			LRO408		
Sampling Date		2020/01/02 13:30			2020/01/02 14:07		
COC Number		751787-01-01			751787-01-01		
	UNITS	GW-11205379-20-010220-JC-003 Lab-Dup	RDL	QC Batch	GW-11205379-20-010220-JC-004	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L				ND	0.071	6522421
Polyaromatic Hydrocarbons							
Acenaphthene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Acenaphthylene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Anthracene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Benzo(a)anthracene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Benzo(a)pyrene	ug/L	ND	0.010	6522593	ND	0.010	6522593
Benzo(b/j)fluoranthene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Benzo(g,h,i)perylene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Benzo(k)fluoranthene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Chrysene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Dibenzo(a,h)anthracene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Fluoranthene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Fluorene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.050	6522593	ND	0.050	6522593
1-Methylnaphthalene	ug/L	ND	0.050	6522593	ND	0.050	6522593
2-Methylnaphthalene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Naphthalene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Phenanthrene	ug/L	ND	0.030	6522593	ND	0.030	6522593
Pyrene	ug/L	ND	0.050	6522593	ND	0.050	6522593
Surrogate Recovery (%)							
D10-Anthracene	%	92		6522593	91		6522593
D14-Terphenyl (FS)	%	78		6522593	81		6522593
D8-Acenaphthylene	%	90		6522593	90		6522593

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRO405			LRO405		
Sampling Date		2020/01/02 10:32			2020/01/02 10:32		
COC Number		751787-01-01			751787-01-01		
	UNITS	GW-11205379-20-010220-JC-001	RDL	QC Batch	GW-11205379-20-010220-JC-001 Lab-Dup	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	ND	0.50	6522422			
Volatile Organics							
Acetone (2-Propanone)	ug/L	ND	10	6524472	ND	10	6524472
Benzene	ug/L	ND	0.20	6524472	ND	0.20	6524472
Bromodichloromethane	ug/L	ND	0.50	6524472	ND	0.50	6524472
Bromoform	ug/L	ND	1.0	6524472	ND	1.0	6524472
Bromomethane	ug/L	ND	0.50	6524472	ND	0.50	6524472
Carbon Tetrachloride	ug/L	ND	0.20	6524472	ND	0.20	6524472
Chlorobenzene	ug/L	ND	0.20	6524472	ND	0.20	6524472
Chloroform	ug/L	ND	0.20	6524472	ND	0.20	6524472
Dibromochloromethane	ug/L	ND	0.50	6524472	ND	0.50	6524472
1,2-Dichlorobenzene	ug/L	ND	0.50	6524472	ND	0.50	6524472
1,3-Dichlorobenzene	ug/L	ND	0.50	6524472	ND	0.50	6524472
1,4-Dichlorobenzene	ug/L	ND	0.50	6524472	ND	0.50	6524472
Dichlorodifluoromethane (FREON 12)	ug/L	ND	1.0	6524472	ND	1.0	6524472
1,1-Dichloroethane	ug/L	ND	0.20	6524472	ND	0.20	6524472
1,2-Dichloroethane	ug/L	ND	0.50	6524472	ND	0.50	6524472
1,1-Dichloroethylene	ug/L	ND	0.20	6524472	ND	0.20	6524472
cis-1,2-Dichloroethylene	ug/L	ND	0.50	6524472	ND	0.50	6524472
trans-1,2-Dichloroethylene	ug/L	ND	0.50	6524472	ND	0.50	6524472
1,2-Dichloropropane	ug/L	ND	0.20	6524472	ND	0.20	6524472
cis-1,3-Dichloropropene	ug/L	ND	0.30	6524472	ND	0.30	6524472
trans-1,3-Dichloropropene	ug/L	ND	0.40	6524472	ND	0.40	6524472
Ethylbenzene	ug/L	ND	0.20	6524472	ND	0.20	6524472
Ethylene Dibromide	ug/L	ND	0.20	6524472	ND	0.20	6524472
Hexane	ug/L	ND	1.0	6524472	ND	1.0	6524472
Methylene Chloride(Dichloromethane)	ug/L	ND	2.0	6524472	ND	2.0	6524472
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	10	6524472	ND	10	6524472
Methyl Isobutyl Ketone	ug/L	ND	5.0	6524472	ND	5.0	6524472
Methyl t-butyl ether (MTBE)	ug/L	ND	0.50	6524472	ND	0.50	6524472
Styrene	ug/L	ND	0.50	6524472	ND	0.50	6524472
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	6524472	ND	0.50	6524472

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRO405			LRO405		
Sampling Date		2020/01/02 10:32			2020/01/02 10:32		
COC Number		751787-01-01			751787-01-01		
	UNITS	GW-11205379-20-010220-JC-001	RDL	QC Batch	GW-11205379-20-010220-JC-001 Lab-Dup	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	6524472	ND	0.50	6524472
Tetrachloroethylene	ug/L	ND	0.20	6524472	ND	0.20	6524472
Toluene	ug/L	0.71	0.20	6524472	0.72	0.20	6524472
1,1,1-Trichloroethane	ug/L	ND	0.20	6524472	ND	0.20	6524472
1,1,2-Trichloroethane	ug/L	ND	0.50	6524472	ND	0.50	6524472
Trichloroethylene	ug/L	ND	0.20	6524472	ND	0.20	6524472
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.50	6524472	ND	0.50	6524472
Vinyl Chloride	ug/L	ND	0.20	6524472	ND	0.20	6524472
p+m-Xylene	ug/L	0.56	0.20	6524472	0.56	0.20	6524472
o-Xylene	ug/L	ND	0.20	6524472	ND	0.20	6524472
Total Xylenes	ug/L	0.56	0.20	6524472	0.56	0.20	6524472
F1 (C6-C10)	ug/L	ND	25	6524472	ND	25	6524472
F1 (C6-C10) - BTEX	ug/L	ND	25	6524472	ND	25	6524472
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	ND	100	6522594			
F3 (C16-C34 Hydrocarbons)	ug/L	ND	200	6522594			
F4 (C34-C50 Hydrocarbons)	ug/L	ND	200	6522594			
Reached Baseline at C50	ug/L	Yes		6522594			
Surrogate Recovery (%)							
o-Terphenyl	%	98		6522594			
4-Bromofluorobenzene	%	98		6524472	96		6524472
D4-1,2-Dichloroethane	%	108		6524472	113		6524472
D8-Toluene	%	100		6524472	102		6524472

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRO406	LRO407			LRO407		
Sampling Date		2020/01/02 11:52	2020/01/02 13:30			2020/01/02 13:30		
COC Number		751787-01-01	751787-01-01			751787-01-01		
	UNITS	GW-11205379-20-010220-JC-002	GW-11205379-20-010220-JC-003	RDL	QC Batch	GW-11205379-20-010220-JC-003 Lab-Dup	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	0.50	6522422			
Volatile Organics								
Acetone (2-Propanone)	ug/L	23	ND	10	6524472			
Benzene	ug/L	ND	ND	0.20	6524472			
Bromodichloromethane	ug/L	ND	ND	0.50	6524472			
Bromoform	ug/L	ND	ND	1.0	6524472			
Bromomethane	ug/L	ND	ND	0.50	6524472			
Carbon Tetrachloride	ug/L	ND	ND	0.20	6524472			
Chlorobenzene	ug/L	ND	ND	0.20	6524472			
Chloroform	ug/L	ND	ND	0.20	6524472			
Dibromochloromethane	ug/L	ND	ND	0.50	6524472			
1,2-Dichlorobenzene	ug/L	ND	ND	0.50	6524472			
1,3-Dichlorobenzene	ug/L	ND	ND	0.50	6524472			
1,4-Dichlorobenzene	ug/L	ND	ND	0.50	6524472			
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	1.0	6524472			
1,1-Dichloroethane	ug/L	ND	ND	0.20	6524472			
1,2-Dichloroethane	ug/L	ND	ND	0.50	6524472			
1,1-Dichloroethylene	ug/L	ND	ND	0.20	6524472			
cis-1,2-Dichloroethylene	ug/L	ND	ND	0.50	6524472			
trans-1,2-Dichloroethylene	ug/L	ND	ND	0.50	6524472			
1,2-Dichloropropane	ug/L	ND	ND	0.20	6524472			
cis-1,3-Dichloropropene	ug/L	ND	ND	0.30	6524472			
trans-1,3-Dichloropropene	ug/L	ND	ND	0.40	6524472			
Ethylbenzene	ug/L	ND	ND	0.20	6524472			
Ethylene Dibromide	ug/L	ND	ND	0.20	6524472			
Hexane	ug/L	ND	ND	1.0	6524472			
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	2.0	6524472			
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	10	6524472			
Methyl Isobutyl Ketone	ug/L	ND	ND	5.0	6524472			
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	0.50	6524472			
Styrene	ug/L	ND	ND	0.50	6524472			
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	0.50	6524472			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRO406	LRO407			LRO407		
Sampling Date		2020/01/02 11:52	2020/01/02 13:30			2020/01/02 13:30		
COC Number		751787-01-01	751787-01-01			751787-01-01		
	UNITS	GW-11205379-20-010220-JC-002	GW-11205379-20-010220-JC-003	RDL	QC Batch	GW-11205379-20-010220-JC-003 Lab-Dup	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	0.50	6524472			
Tetrachloroethylene	ug/L	ND	ND	0.20	6524472			
Toluene	ug/L	ND	0.28	0.20	6524472			
1,1,1-Trichloroethane	ug/L	ND	ND	0.20	6524472			
1,1,2-Trichloroethane	ug/L	ND	ND	0.50	6524472			
Trichloroethylene	ug/L	ND	ND	0.20	6524472			
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	0.50	6524472			
Vinyl Chloride	ug/L	ND	ND	0.20	6524472			
p+m-Xylene	ug/L	ND	0.29	0.20	6524472			
o-Xylene	ug/L	ND	0.33	0.20	6524472			
Total Xylenes	ug/L	ND	0.61	0.20	6524472			
F1 (C6-C10)	ug/L	ND	ND	25	6524472			
F1 (C6-C10) - BTEX	ug/L	ND	ND	25	6524472			
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	100	6522594	ND	100	6522594
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	200	6522594	ND	200	6522594
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	200	6522594	ND	200	6522594
Reached Baseline at C50	ug/L	Yes	Yes		6522594	Yes		6522594
Surrogate Recovery (%)								
o-Terphenyl	%	90	99		6522594	97		6522594
4-Bromofluorobenzene	%	96	98		6524472			
D4-1,2-Dichloroethane	%	113	111		6524472			
D8-Toluene	%	100	100		6524472			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRO408		
Sampling Date		2020/01/02 14:07		
COC Number		751787-01-01		
	UNITS	GW-11205379-20-010220-JC-004	RDL	QC Batch
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/L	ND	0.50	6522422
Volatile Organics				
Acetone (2-Propanone)	ug/L	ND	10	6524472
Benzene	ug/L	1.5	0.20	6524472
Bromodichloromethane	ug/L	ND	0.50	6524472
Bromoform	ug/L	ND	1.0	6524472
Bromomethane	ug/L	ND	0.50	6524472
Carbon Tetrachloride	ug/L	ND	0.20	6524472
Chlorobenzene	ug/L	ND	0.20	6524472
Chloroform	ug/L	0.24	0.20	6524472
Dibromochloromethane	ug/L	ND	0.50	6524472
1,2-Dichlorobenzene	ug/L	ND	0.50	6524472
1,3-Dichlorobenzene	ug/L	ND	0.50	6524472
1,4-Dichlorobenzene	ug/L	ND	0.50	6524472
Dichlorodifluoromethane (FREON 12)	ug/L	ND	1.0	6524472
1,1-Dichloroethane	ug/L	ND	0.20	6524472
1,2-Dichloroethane	ug/L	ND	0.50	6524472
1,1-Dichloroethylene	ug/L	ND	0.20	6524472
cis-1,2-Dichloroethylene	ug/L	ND	0.50	6524472
trans-1,2-Dichloroethylene	ug/L	ND	0.50	6524472
1,2-Dichloropropane	ug/L	ND	0.20	6524472
cis-1,3-Dichloropropene	ug/L	ND	0.30	6524472
trans-1,3-Dichloropropene	ug/L	ND	0.40	6524472
Ethylbenzene	ug/L	0.29	0.20	6524472
Ethylene Dibromide	ug/L	ND	0.20	6524472
Hexane	ug/L	ND	1.0	6524472
Methylene Chloride(Dichloromethane)	ug/L	ND	2.0	6524472
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	10	6524472
Methyl Isobutyl Ketone	ug/L	ND	5.0	6524472
Methyl t-butyl ether (MTBE)	ug/L	ND	0.50	6524472
Styrene	ug/L	ND	0.50	6524472
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	6524472
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	6524472

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRO408		
Sampling Date		2020/01/02 14:07		
COC Number		751787-01-01		
	UNITS	GW-11205379-20-010220-JC-004	RDL	QC Batch
Tetrachloroethylene	ug/L	ND	0.20	6524472
Toluene	ug/L	5.3	0.20	6524472
1,1,1-Trichloroethane	ug/L	ND	0.20	6524472
1,1,2-Trichloroethane	ug/L	ND	0.50	6524472
Trichloroethylene	ug/L	ND	0.20	6524472
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.50	6524472
Vinyl Chloride	ug/L	ND	0.20	6524472
p+m-Xylene	ug/L	3.1	0.20	6524472
o-Xylene	ug/L	1.0	0.20	6524472
Total Xylenes	ug/L	4.1	0.20	6524472
F1 (C6-C10)	ug/L	ND	25	6524472
F1 (C6-C10) - BTEX	ug/L	ND	25	6524472
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	ND	100	6522594
F3 (C16-C34 Hydrocarbons)	ug/L	ND	200	6522594
F4 (C34-C50 Hydrocarbons)	ug/L	ND	200	6522594
Reached Baseline at C50	ug/L	Yes		6522594
Surrogate Recovery (%)				
o-Terphenyl	%	99		6522594
4-Bromofluorobenzene	%	97		6524472
D4-1,2-Dichloroethane	%	111		6524472
D8-Toluene	%	100		6524472

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

TEST SUMMARY

BV Labs ID: LRO405
Sample ID: GW-11205379-20-010220-JC-001
Matrix: Water

Collected: 2020/01/02
Shipped:
Received: 2020/01/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6522421	N/A	2020/01/06	Automated Statchk
1,3-Dichloropropene Sum	CALC	6522422	N/A	2020/01/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6523944	N/A	2020/01/06	Deonarine Ramnarine
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le
Free (WAD) Cyanide	SKAL/CN	6524775	N/A	2020/01/06	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6522594	2020/01/03	2020/01/04	Prabhjot Gulati
Mercury	CV/AA	6526055	2020/01/07	2020/01/07	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6524459	N/A	2020/01/07	Arefa Dabhad
OC Pesticides (Selected) & PCB	GC/ECD	6524361	2020/01/06	2020/01/07	Li Peng
OC Pesticides Summed Parameters	CALC	6522423	N/A	2020/01/06	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6522593	2020/01/03	2020/01/04	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

BV Labs ID: LRO405 Dup
Sample ID: GW-11205379-20-010220-JC-001
Matrix: Water

Collected: 2020/01/02
Shipped:
Received: 2020/01/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

BV Labs ID: LRO406
Sample ID: GW-11205379-20-010220-JC-002
Matrix: Water

Collected: 2020/01/02
Shipped:
Received: 2020/01/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6522421	N/A	2020/01/06	Automated Statchk
1,3-Dichloropropene Sum	CALC	6522422	N/A	2020/01/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6523944	N/A	2020/01/06	Deonarine Ramnarine
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le
Free (WAD) Cyanide	SKAL/CN	6524775	N/A	2020/01/06	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6522594	2020/01/03	2020/01/04	Prabhjot Gulati
Mercury	CV/AA	6526055	2020/01/07	2020/01/07	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6524459	N/A	2020/01/07	Arefa Dabhad
OC Pesticides (Selected) & PCB	GC/ECD	6524361	2020/01/06	2020/01/07	Li Peng
OC Pesticides Summed Parameters	CALC	6522423	N/A	2020/01/06	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6522593	2020/01/03	2020/01/03	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

BV Labs ID: LRO407
Sample ID: GW-11205379-20-010220-JC-003
Matrix: Water

Collected: 2020/01/02
Shipped:
Received: 2020/01/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6522421	N/A	2020/01/06	Automated Statchk

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

TEST SUMMARY

BV Labs ID: LRO407
Sample ID: GW-11205379-20-010220-JC-003
Matrix: Water

Collected: 2020/01/02
Shipped:
Received: 2020/01/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	6522422	N/A	2020/01/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6523472	N/A	2020/01/06	Deonarine Ramnarine
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le
Free (WAD) Cyanide	SKAL/CN	6524775	N/A	2020/01/06	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6522594	2020/01/03	2020/01/04	Prabhjot Gulati
Mercury	CV/AA	6526055	2020/01/07	2020/01/07	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6524096	N/A	2020/01/06	Arefa Dabhad
OC Pesticides (Selected) & PCB	GC/ECD	6524361	2020/01/06	2020/01/07	Li Peng
OC Pesticides Summed Parameters	CALC	6522423	N/A	2020/01/06	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6522593	2020/01/03	2020/01/03	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

BV Labs ID: LRO407 Dup
Sample ID: GW-11205379-20-010220-JC-003
Matrix: Water

Collected: 2020/01/02
Shipped:
Received: 2020/01/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6522594	2020/01/03	2020/01/04	Prabhjot Gulati
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6522593	2020/01/03	2020/01/03	Mitesh Raj

BV Labs ID: LRO408
Sample ID: GW-11205379-20-010220-JC-004
Matrix: Water

Collected: 2020/01/02
Shipped:
Received: 2020/01/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6522421	N/A	2020/01/06	Automated Statchk
1,3-Dichloropropene Sum	CALC	6522422	N/A	2020/01/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6523944	N/A	2020/01/06	Deonarine Ramnarine
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le
Free (WAD) Cyanide	SKAL/CN	6524775	N/A	2020/01/06	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6522594	2020/01/03	2020/01/04	Prabhjot Gulati
Mercury	CV/AA	6526055	2020/01/07	2020/01/07	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6524459	N/A	2020/01/07	Arefa Dabhad
OC Pesticides (Selected) & PCB	GC/ECD	6524361	2020/01/06	2020/01/07	Li Peng
OC Pesticides Summed Parameters	CALC	6522423	N/A	2020/01/06	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6522593	2020/01/03	2020/01/04	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

BV Labs ID: LRO409
Sample ID: TBLK-FIBB-19-4716
Matrix: Water

Collected: 2019/09/03
Shipped:
Received: 2020/01/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	6522422	N/A	2020/01/08	Automated Statchk

BV Labs Job #: C000934
Report Date: 2020/01/10

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

TEST SUMMARY

BV Labs ID: LRO409
Sample ID: TBLK-FIBB-19-4716
Matrix: Water

Collected: 2019/09/03
Shipped:
Received: 2020/01/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C

Sample LRO405 [GW-11205379-20-010220-JC-001] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample LRO406 [GW-11205379-20-010220-JC-002] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly. Hexavalent Chromium > Total/Dissolved Chromium: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample LRO407 [GW-11205379-20-010220-JC-003] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample LRO408 [GW-11205379-20-010220-JC-004] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6522593	D10-Anthracene	2020/01/03	90 (1)	50 - 130	94	50 - 130	100	%		
6522593	D14-Terphenyl (FS)	2020/01/03	75 (1)	50 - 130	82	50 - 130	94	%		
6522593	D8-Acenaphthylene	2020/01/03	87 (1)	50 - 130	92	50 - 130	92	%		
6522594	o-Terphenyl	2020/01/04	102 (3)	60 - 130	103	60 - 130	101	%		
6524361	2,4,5,6-Tetrachloro-m-xylene	2020/01/06	86 (5)	50 - 130	85	50 - 130	73	%		
6524361	Decachlorobiphenyl	2020/01/06	120 (5)	50 - 130	124	50 - 130	118	%		
6524472	4-Bromofluorobenzene	2020/01/07	98 (7)	70 - 130	98	70 - 130	96	%		
6524472	D4-1,2-Dichloroethane	2020/01/07	111 (7)	70 - 130	106	70 - 130	108	%		
6524472	D8-Toluene	2020/01/07	103 (7)	70 - 130	104	70 - 130	103	%		
6522593	1-Methylnaphthalene	2020/01/03	93 (1)	50 - 130	99	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	2-Methylnaphthalene	2020/01/03	86 (1)	50 - 130	94	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Acenaphthene	2020/01/03	91 (1)	50 - 130	96	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Acenaphthylene	2020/01/03	86 (1)	50 - 130	90	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Anthracene	2020/01/03	86 (1)	50 - 130	93	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Benzo(a)anthracene	2020/01/03	89 (1)	50 - 130	104	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Benzo(a)pyrene	2020/01/03	80 (1)	50 - 130	97	50 - 130	ND, RDL=0.010	ug/L	NC (2)	30
6522593	Benzo(b/j)fluoranthene	2020/01/03	78 (1)	50 - 130	93	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Benzo(g,h,i)perylene	2020/01/03	71 (1)	50 - 130	89	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Benzo(k)fluoranthene	2020/01/03	76 (1)	50 - 130	96	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Chrysene	2020/01/03	81 (1)	50 - 130	95	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Dibenzo(a,h)anthracene	2020/01/03	76 (1)	50 - 130	91	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Fluoranthene	2020/01/03	84 (1)	50 - 130	94	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Fluorene	2020/01/03	95 (1)	50 - 130	101	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Indeno(1,2,3-cd)pyrene	2020/01/03	79 (1)	50 - 130	97	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Naphthalene	2020/01/03	84 (1)	50 - 130	86	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522593	Phenanthrene	2020/01/03	89 (1)	50 - 130	94	50 - 130	ND, RDL=0.030	ug/L	NC (2)	30
6522593	Pyrene	2020/01/03	84 (1)	50 - 130	88	50 - 130	ND, RDL=0.050	ug/L	NC (2)	30
6522594	F2 (C10-C16 Hydrocarbons)	2020/01/04	104 (3)	50 - 130	106	60 - 130	ND, RDL=100	ug/L	NC (2)	30
6522594	F3 (C16-C34 Hydrocarbons)	2020/01/04	NC (3)	50 - 130	107	60 - 130	ND, RDL=200	ug/L	NC (2)	30
6522594	F4 (C34-C50 Hydrocarbons)	2020/01/04	101 (3)	50 - 130	106	60 - 130	ND, RDL=200	ug/L	NC (2)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6523472	Dissolved Chloride (Cl-)	2020/01/06	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	1.1 (4)	20
6523944	Dissolved Chloride (Cl-)	2020/01/06	NC	80 - 120	105	80 - 120	ND, RDL=1.0	mg/L	2.8 (4)	20
6524096	Dissolved Antimony (Sb)	2020/01/06	107	80 - 120	101	80 - 120	ND, RDL=0.50	ug/L	6.2 (4)	20
6524096	Dissolved Arsenic (As)	2020/01/06	104	80 - 120	99	80 - 120	ND, RDL=1.0	ug/L	NC (4)	20
6524096	Dissolved Barium (Ba)	2020/01/06	NC	80 - 120	102	80 - 120	ND, RDL=2.0	ug/L	2.2 (4)	20
6524096	Dissolved Beryllium (Be)	2020/01/06	113	80 - 120	99	80 - 120	ND, RDL=0.50	ug/L	NC (4)	20
6524096	Dissolved Boron (B)	2020/01/06	113	80 - 120	95	80 - 120	ND, RDL=10	ug/L	4.6 (4)	20
6524096	Dissolved Cadmium (Cd)	2020/01/06	102	80 - 120	100	80 - 120	ND, RDL=0.10	ug/L	NC (4)	20
6524096	Dissolved Chromium (Cr)	2020/01/06	98	80 - 120	92	80 - 120	ND, RDL=5.0	ug/L	NC (4)	20
6524096	Dissolved Cobalt (Co)	2020/01/06	99	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	0.59 (4)	20
6524096	Dissolved Copper (Cu)	2020/01/06	106	80 - 120	105	80 - 120	ND, RDL=1.0	ug/L	1.7 (4)	20
6524096	Dissolved Lead (Pb)	2020/01/06	95	80 - 120	96	80 - 120	ND, RDL=0.50	ug/L	NC (4)	20
6524096	Dissolved Molybdenum (Mo)	2020/01/06	109	80 - 120	98	80 - 120	ND, RDL=0.50	ug/L	0.55 (4)	20
6524096	Dissolved Nickel (Ni)	2020/01/06	95	80 - 120	96	80 - 120	ND, RDL=1.0	ug/L	2.1 (4)	20
6524096	Dissolved Selenium (Se)	2020/01/06	102	80 - 120	101	80 - 120	ND, RDL=2.0	ug/L	NC (4)	20
6524096	Dissolved Silver (Ag)	2020/01/06	98	80 - 120	98	80 - 120	ND, RDL=0.10	ug/L	NC (4)	20
6524096	Dissolved Sodium (Na)	2020/01/06	NC	80 - 120	98	80 - 120	ND, RDL=100	ug/L	2.0 (4)	20
6524096	Dissolved Thallium (Tl)	2020/01/06	102	80 - 120	101	80 - 120	ND, RDL=0.050	ug/L	0 (4)	20
6524096	Dissolved Uranium (U)	2020/01/06	98	80 - 120	94	80 - 120	ND, RDL=0.10	ug/L	2.0 (4)	20
6524096	Dissolved Vanadium (V)	2020/01/06	105	80 - 120	96	80 - 120	ND, RDL=0.50	ug/L	1.7 (4)	20
6524096	Dissolved Zinc (Zn)	2020/01/06	96	80 - 120	98	80 - 120	ND, RDL=5.0	ug/L	7.5 (4)	20
6524361	a-Chlordane	2020/01/07	91 (5)	50 - 130	95	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	Aldrin	2020/01/07	84 (5)	50 - 130	80	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	Aroclor 1242	2020/01/07					ND, RDL=0.05	ug/L	NC (4)	30
6524361	Aroclor 1248	2020/01/07					ND, RDL=0.05	ug/L	NC (4)	30
6524361	Aroclor 1254	2020/01/07					ND, RDL=0.05	ug/L	NC (4)	30
6524361	Aroclor 1260	2020/01/07					ND, RDL=0.05	ug/L	NC (4)	30
6524361	Dieldrin	2020/01/07	104 (5)	50 - 130	108	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	Endosulfan I (alpha)	2020/01/07	84 (5)	50 - 130	86	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	Endosulfan II (beta)	2020/01/07	82 (5)	50 - 130	84	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6524361	Endrin	2020/01/07	90 (5)	50 - 130	86	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	g-Chlordane	2020/01/07	90 (5)	50 - 130	95	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	Heptachlor epoxide	2020/01/07	85 (5)	50 - 130	89	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	Heptachlor	2020/01/07	75 (5)	50 - 130	71	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	Hexachlorobenzene	2020/01/07	88 (5)	50 - 130	92	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	Hexachlorobutadiene	2020/01/07	76 (5)	50 - 130	80	50 - 130	ND, RDL=0.009	ug/L	NC (4)	30
6524361	Hexachloroethane	2020/01/07	69 (5)	50 - 130	70	50 - 130	ND, RDL=0.01	ug/L	NC (4)	30
6524361	Lindane	2020/01/07	78 (5)	50 - 130	82	50 - 130	ND, RDL=0.003	ug/L	NC (4)	30
6524361	Methoxychlor	2020/01/07	93 (5)	50 - 130	84	50 - 130	ND, RDL=0.01	ug/L	NC (4)	30
6524361	o,p-DDD	2020/01/07	93 (5)	50 - 130	98	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	o,p-DDE	2020/01/07	90 (5)	50 - 130	93	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	o,p-DDT	2020/01/07	84 (5)	50 - 130	77	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	p,p-DDD	2020/01/07	90 (5)	50 - 130	92	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	p,p-DDE	2020/01/07	88 (5)	50 - 130	86	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524361	p,p-DDT	2020/01/07	95 (5)	50 - 130	83	50 - 130	ND, RDL=0.005	ug/L	NC (4)	30
6524459	Dissolved Antimony (Sb)	2020/01/07	108	80 - 120	98	80 - 120	ND, RDL=0.50	ug/L	8.6 (4)	20
6524459	Dissolved Arsenic (As)	2020/01/07	101	80 - 120	98	80 - 120	ND, RDL=1.0	ug/L	NC (4)	20
6524459	Dissolved Barium (Ba)	2020/01/07	99	80 - 120	98	80 - 120	ND, RDL=2.0	ug/L	0.35 (4)	20
6524459	Dissolved Beryllium (Be)	2020/01/07	109	80 - 120	96	80 - 120	ND, RDL=0.50	ug/L	NC (4)	20
6524459	Dissolved Boron (B)	2020/01/07	104	80 - 120	95	80 - 120	ND, RDL=10	ug/L	1.1 (4)	20
6524459	Dissolved Cadmium (Cd)	2020/01/07	101	80 - 120	97	80 - 120	ND, RDL=0.10	ug/L	NC (4)	20
6524459	Dissolved Chromium (Cr)	2020/01/07	97	80 - 120	96	80 - 120	ND, RDL=5.0	ug/L	NC (4)	20
6524459	Dissolved Cobalt (Co)	2020/01/07	100	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	0 (4)	20
6524459	Dissolved Copper (Cu)	2020/01/07	107	80 - 120	100	80 - 120	ND, RDL=1.0	ug/L	14 (4)	20
6524459	Dissolved Lead (Pb)	2020/01/07	92	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	NC (4)	20
6524459	Dissolved Molybdenum (Mo)	2020/01/07	109	80 - 120	100	80 - 120	ND, RDL=0.50	ug/L	2.7 (4)	20
6524459	Dissolved Nickel (Ni)	2020/01/07	92	80 - 120	96	80 - 120	ND, RDL=1.0	ug/L	8.9 (4)	20
6524459	Dissolved Selenium (Se)	2020/01/07	97	80 - 120	99	80 - 120	ND, RDL=2.0	ug/L	NC (4)	20
6524459	Dissolved Silver (Ag)	2020/01/07	96	80 - 120	96	80 - 120	ND, RDL=0.10	ug/L	NC (4)	20
6524459	Dissolved Sodium (Na)	2020/01/07	NC	80 - 120	98	80 - 120	ND, RDL=100	ug/L	1.3 (4)	20

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6524459	Dissolved Thallium (Tl)	2020/01/07	94	80 - 120	98	80 - 120	ND, RDL=0.050	ug/L	NC (4)	20
6524459	Dissolved Uranium (U)	2020/01/07	96	80 - 120	98	80 - 120	ND, RDL=0.10	ug/L	0.96 (4)	20
6524459	Dissolved Vanadium (V)	2020/01/07	102	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	3.8 (4)	20
6524459	Dissolved Zinc (Zn)	2020/01/07	93	80 - 120	96	80 - 120	ND, RDL=5.0	ug/L	NC (4)	20
6524472	1,1,1,2-Tetrachloroethane	2020/01/07	98 (7)	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	1,1,1-Trichloroethane	2020/01/07	88 (7)	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	1,1,2,2-Tetrachloroethane	2020/01/07	106 (7)	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	1,1,2-Trichloroethane	2020/01/07	107 (7)	70 - 130	107	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	1,1-Dichloroethane	2020/01/07	94 (7)	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	1,1-Dichloroethylene	2020/01/07	99 (7)	70 - 130	110	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	1,2-Dichlorobenzene	2020/01/07	91 (7)	70 - 130	96	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	1,2-Dichloroethane	2020/01/07	104 (7)	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	1,2-Dichloropropane	2020/01/07	93 (7)	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	1,3-Dichlorobenzene	2020/01/07	89 (7)	70 - 130	95	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	1,4-Dichlorobenzene	2020/01/07	97 (7)	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	Acetone (2-Propanone)	2020/01/07	98 (7)	60 - 140	85	60 - 140	ND, RDL=10	ug/L	NC (8)	30
6524472	Benzene	2020/01/07	91 (7)	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	Bromodichloromethane	2020/01/07	92 (7)	70 - 130	94	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	Bromoform	2020/01/07	99 (7)	70 - 130	98	70 - 130	ND, RDL=1.0	ug/L	NC (8)	30
6524472	Bromomethane	2020/01/07	84 (7)	60 - 140	99	60 - 140	ND, RDL=0.50	ug/L	NC (8)	30
6524472	Carbon Tetrachloride	2020/01/07	85 (7)	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	Chlorobenzene	2020/01/07	89 (7)	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	Chloroform	2020/01/07	88 (7)	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	cis-1,2-Dichloroethylene	2020/01/07	89 (7)	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	cis-1,3-Dichloropropene	2020/01/07	98 (7)	70 - 130	93	70 - 130	ND, RDL=0.30	ug/L	NC (8)	30
6524472	Dibromochloromethane	2020/01/07	101 (7)	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	Dichlorodifluoromethane (FREON 12)	2020/01/07	62 (7)	60 - 140	80	60 - 140	ND, RDL=1.0	ug/L	NC (8)	30
6524472	Ethylbenzene	2020/01/07	89 (7)	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	Ethylene Dibromide	2020/01/07	103 (7)	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	F1 (C6-C10) - BTEX	2020/01/07					ND, RDL=25	ug/L	NC (8)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6524472	F1 (C6-C10)	2020/01/07	91 (7)	60 - 140	95	60 - 140	ND, RDL=25	ug/L	NC (8)	30
6524472	Hexane	2020/01/07	94 (7)	70 - 130	103	70 - 130	ND, RDL=1.0	ug/L	NC (8)	30
6524472	Methyl Ethyl Ketone (2-Butanone)	2020/01/07	105 (7)	60 - 140	90	60 - 140	ND, RDL=10	ug/L	NC (8)	30
6524472	Methyl Isobutyl Ketone	2020/01/07	105 (7)	70 - 130	96	70 - 130	ND, RDL=5.0	ug/L	NC (8)	30
6524472	Methyl t-butyl ether (MTBE)	2020/01/07	90 (7)	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	Methylene Chloride(Dichloromethane)	2020/01/07	91 (7)	70 - 130	96	70 - 130	ND, RDL=2.0	ug/L	NC (8)	30
6524472	o-Xylene	2020/01/07	91 (7)	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	p+m-Xylene	2020/01/07	94 (7)	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	0 (8)	30
6524472	Styrene	2020/01/07	89 (7)	70 - 130	96	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	Tetrachloroethylene	2020/01/07	81 (7)	70 - 130	90	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	Toluene	2020/01/07	88 (7)	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	1.4 (8)	30
6524472	Total Xylenes	2020/01/07					ND, RDL=0.20	ug/L	0 (8)	30
6524472	trans-1,2-Dichloroethylene	2020/01/07	90 (7)	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	trans-1,3-Dichloropropene	2020/01/07	112 (7)	70 - 130	101	70 - 130	ND, RDL=0.40	ug/L	NC (8)	30
6524472	Trichloroethylene	2020/01/07	87 (7)	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524472	Trichlorofluoromethane (FREON 11)	2020/01/07	91 (7)	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC (8)	30
6524472	Vinyl Chloride	2020/01/07	87 (7)	70 - 130	105	70 - 130	ND, RDL=0.20	ug/L	NC (8)	30
6524775	WAD Cyanide (Free)	2020/01/06	97	80 - 120	99	80 - 120	ND,RDL=1	ug/L	0 (4)	20
6525538	Chromium (VI)	2020/01/07	100	80 - 120	103	80 - 120	ND, RDL=0.50	ug/L	NC (4)	20

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6526055	Mercury (Hg)	2020/01/07	92	75 - 125	97	80 - 120	ND, RDL=0.1	ug/L	NC (4)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [LRO406-07]

(2) Duplicate Parent ID [LRO407-07]

(3) Matrix Spike Parent ID [LRO408-07]

(4) Duplicate Parent ID

(5) Matrix Spike Parent ID [LRO407-01]

(6) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(7) Matrix Spike Parent ID [LRO405-08]

(8) Duplicate Parent ID [LRO405-08]

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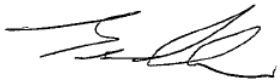
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C000934
Report Date: 2020/01/10

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Brad Newman, Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

Page of

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 GHD Limited	Company Name:		Quotation #:	B90001	BV Labs Job #:	Bottle Order #:
Attention:	Laura Ermeta (AP-735)	Attention:	11205379-20-PO-73518145	P.O. #:	73518145		751787
Address:	455 Phillip St Waterloo ON N2L 3X2	Address:		Project:	11205379	COC #:	Project Manager:
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Project Name:		C#751787-01-01	Ema Gitej
Email:	APinvoices-735@ghd.com	Email:	NationalEDDsupport@maxxam.ca; Jennifer Balkwill <Je	Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☐ Res/Park ☐ Medium/Fine	☐ CCME ☐ Sanitary Sewer Bylaw	
☐ Table 2 ☐ Ind/Comm ☐ Coarse	☐ Reg 558. ☐ Storm Sewer Bylaw	
☒ Table 3 ☐ Agri/Other ☐ For RSC	☐ MISA Municipality	
☐ Table ___	☐ PWQO	
	☐ Other	

Include Criteria on Certificate of Analysis (Y/N)? ___

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg	O.Reg 153 OC Pesticides	F1-BTEX						# of Bottles	Comments
1	GW-11205379	-010220-JC-001	JAN 2/2020	10:32	GW	X	X	X	X	X							12	
2	GW-11205379	-010220-JC-002	JAN 2 2020	11:52	GW	X	X	X	X	X							12	
3	GW-11205379	-010220-JC-003	JAN 2 2020	13:30	GW	X	X	X	X	X							12	
4	GW-11205379	-010220-JC-004	JAN 2 2020	14:07	GW	X	X	X	X	X							12	
5	TBLK-FIBB	-19-4716	SEPT 3 2019		~~FIELD TRIP~~ BLANK		X				X						2	
6																		
7																		
8																		
9																		
10																		on ice

02-Jan-20 15:58
Ema Gitej
C000934
FCN ENV-1397

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (If applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
JACQUELYN CURPHEY	20/01/02	15:52	~~SZ~~ Jesse Leger ~~Elizabeth~~ GHD	2020/01/03	15:53 08:00	

Laboratory Use Only				
Time Sensitive	Temperature (°C) on Recei	Custody Seal Present	Yes	No
	4, 6, 4	Intact	X	
	4, 4, 2 8, 7, 8			

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

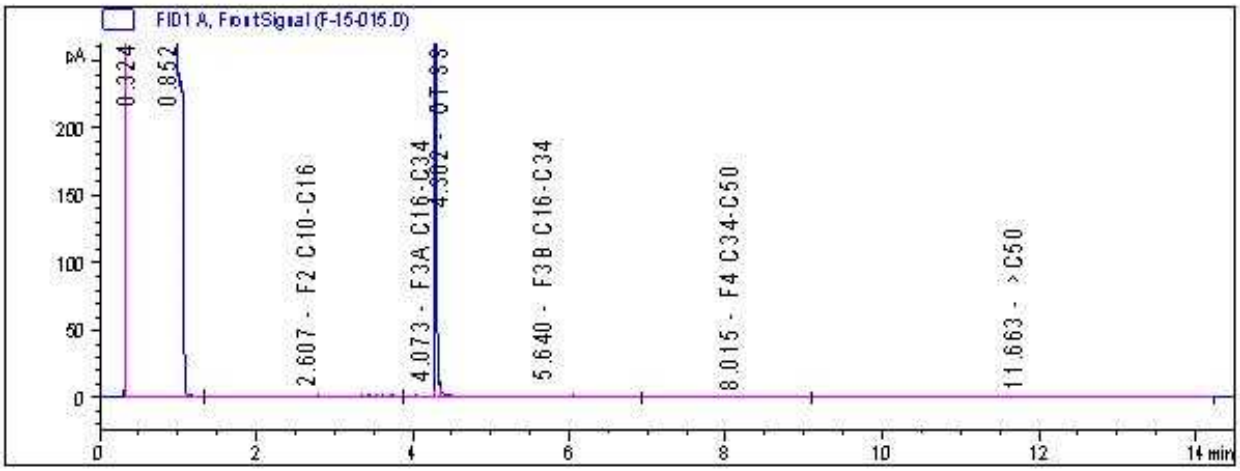
RECEIVED IN OTTAWA

Bureau Veritas Canada (2019) Inc.

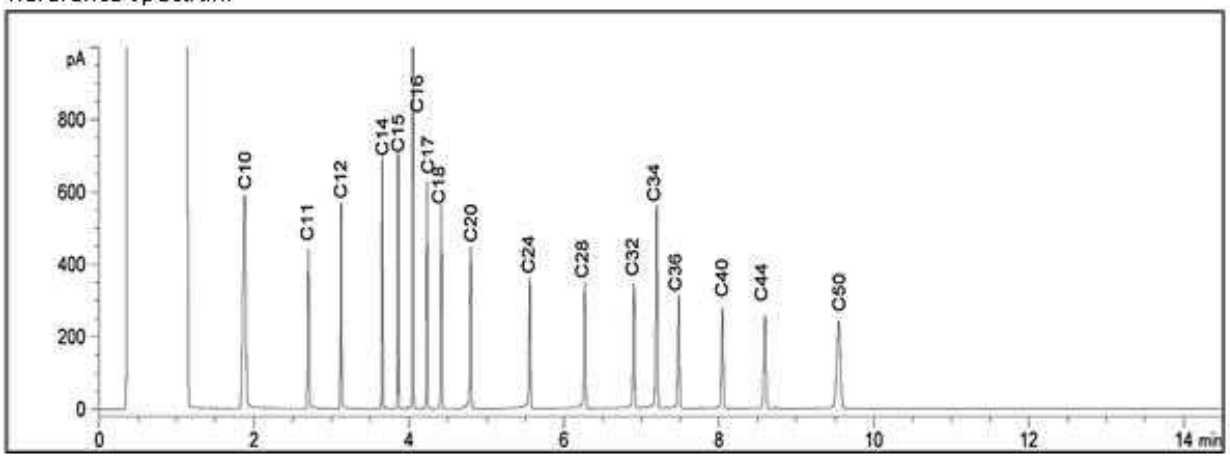
BV Labs Job #: C000934
Report Date: 2020/01/10
BV Labs Sample: LRO405

GHD Limited
Client Project #: 11205379-20
Client ID: GW-11205379-20-010220-JC-001

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum

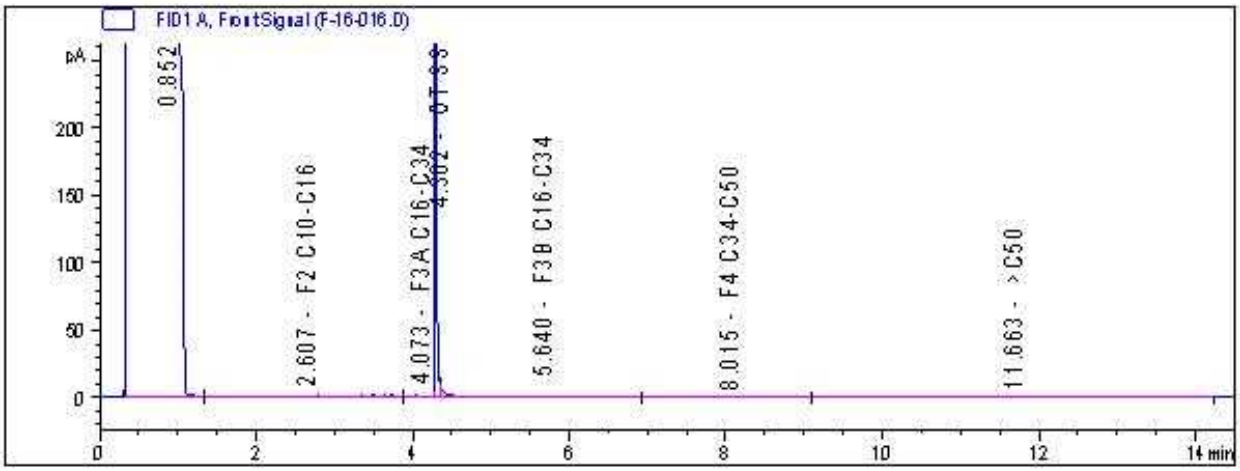


TYPICAL PRODUCT CARBON NUMBER RANGES

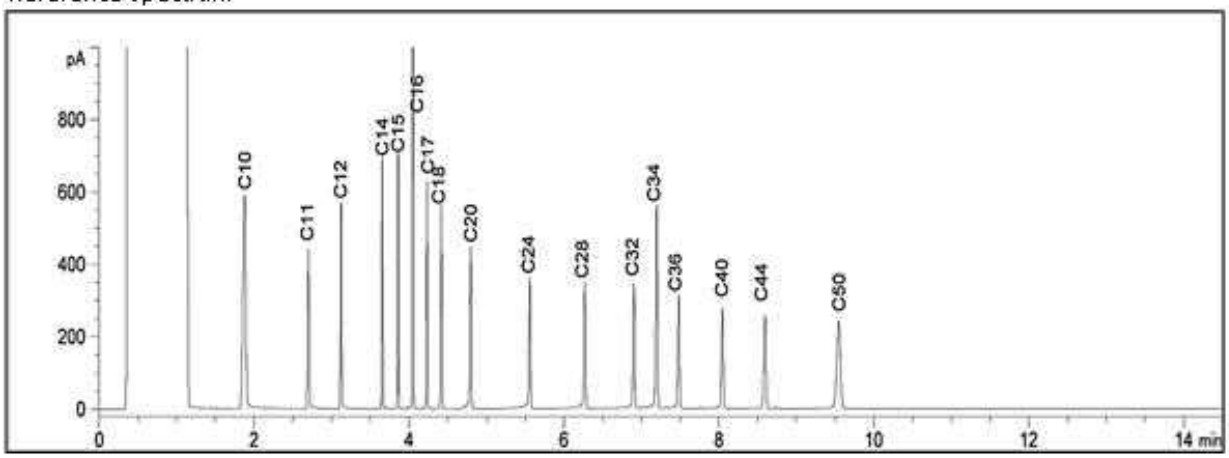
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum

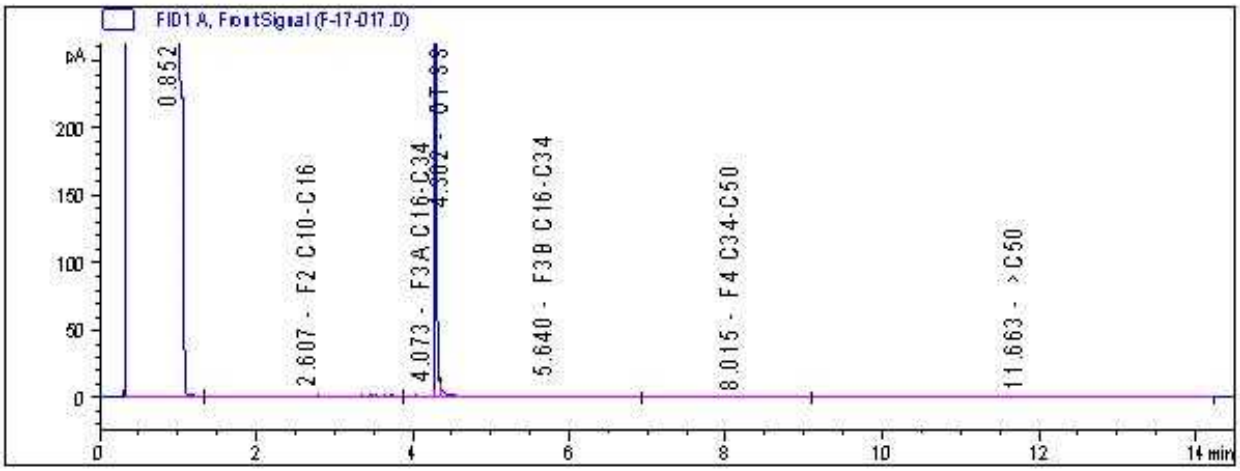


TYPICAL PRODUCT CARBON NUMBER RANGES

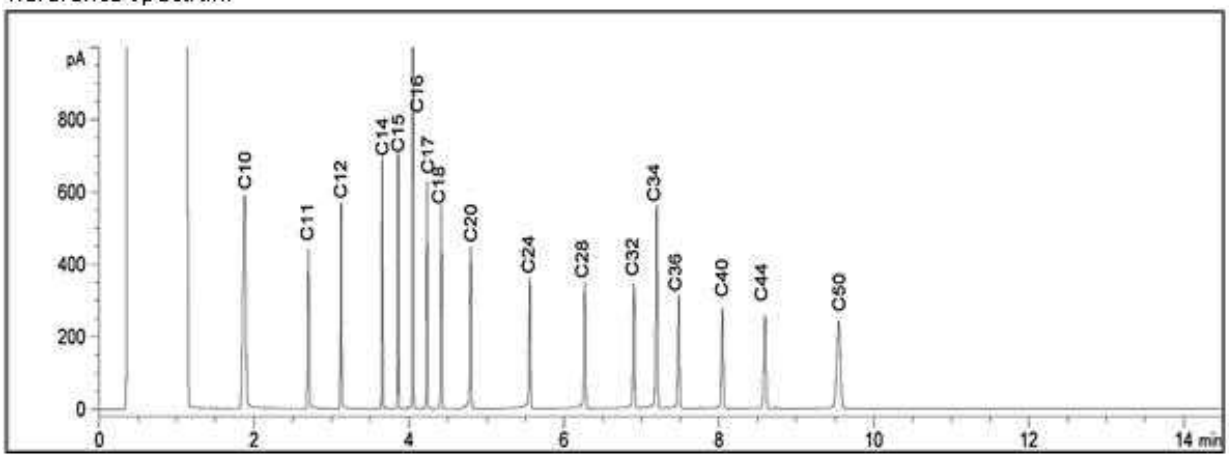
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

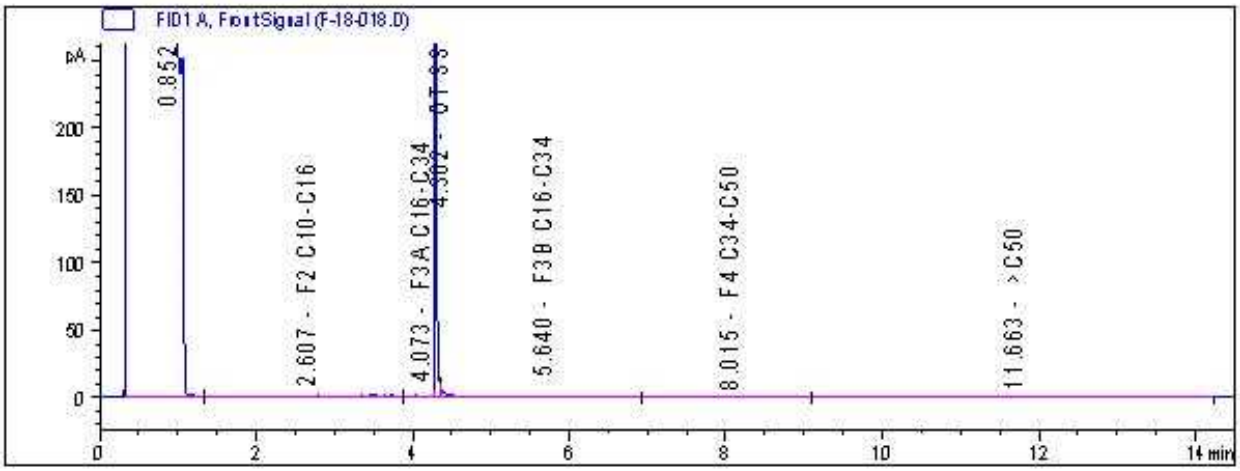
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

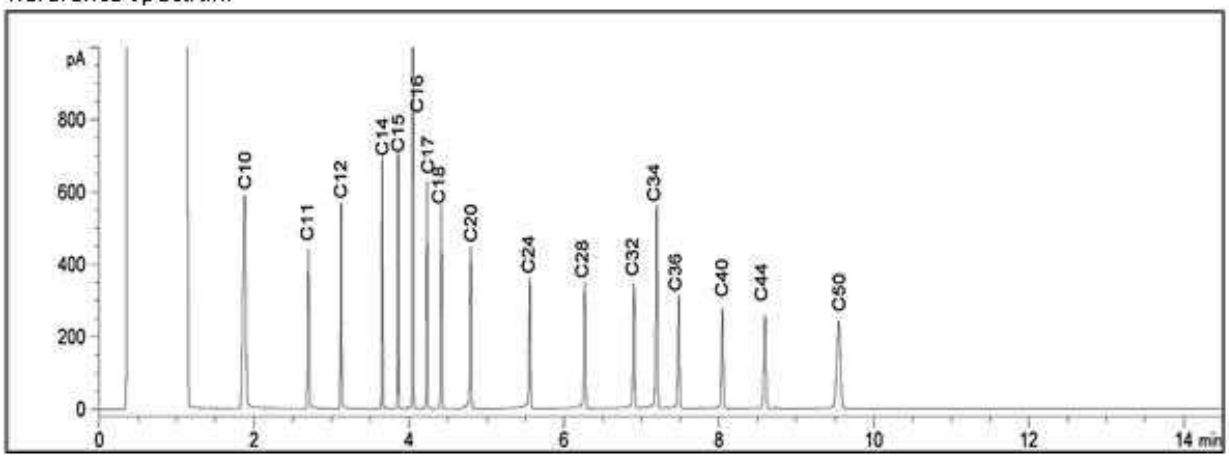
BV Labs Job #: C000934
Report Date: 2020/01/10
BV Labs Sample: LRO407 Lab-Dup

GHD Limited
Client Project #: 11205379-20
Client ID: GW-11205379-20-010220-JC-003

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

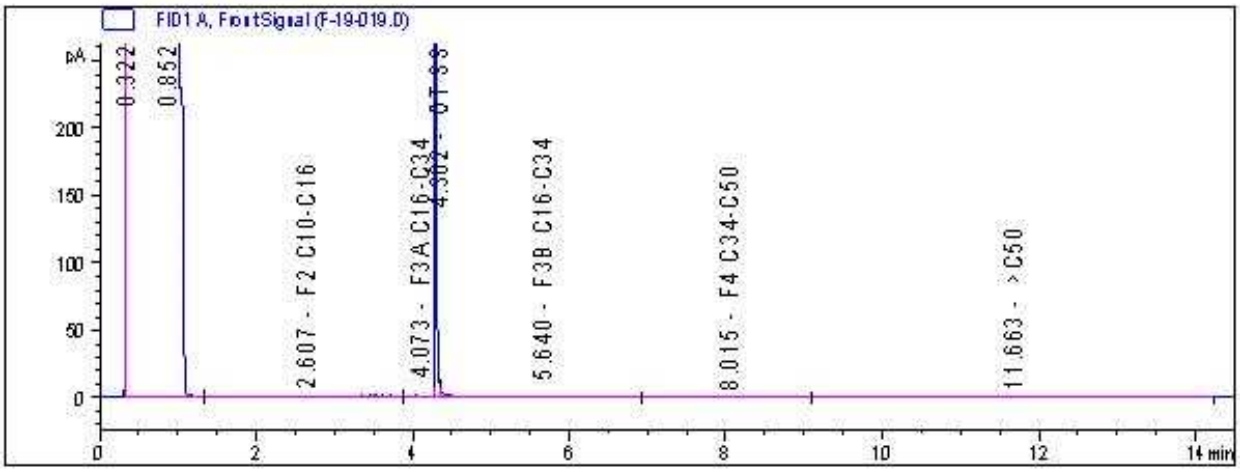
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

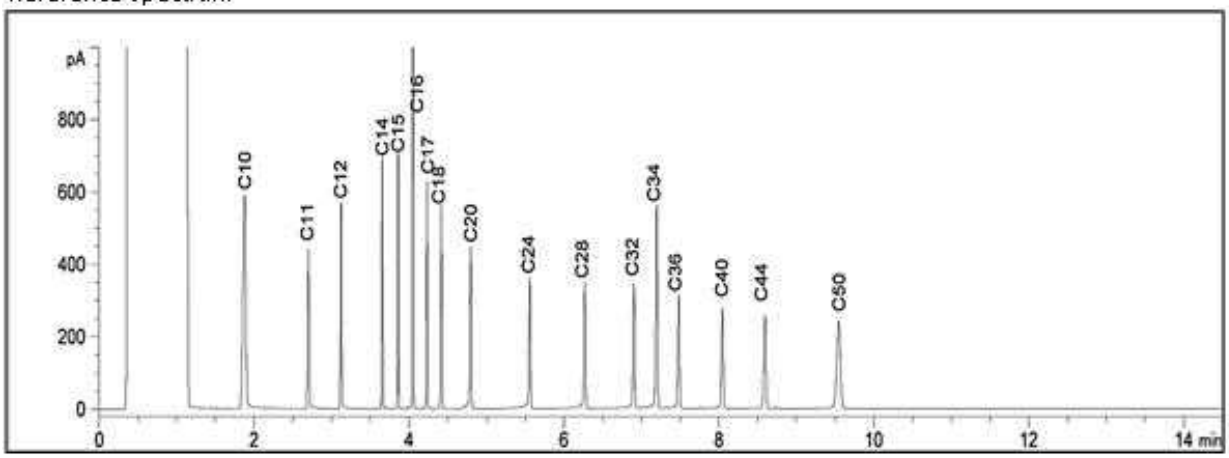
BV Labs Job #: C000934
Report Date: 2020/01/10
BV Labs Sample: LRO408

GHD Limited
Client Project #: 11205379-20
Client ID: GW-11205379-20-010220-JC-004

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 73518145
Your Project #: 11205379-20
Your C.O.C. #: 748246-01-01

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/01/15
Report #: R6037448
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C002002
Received: 2020/01/03, 16:15

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	5	N/A	2020/01/09	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	5	N/A	2020/01/08		EPA 8260C m
Chloride by Automated Colourimetry	5	N/A	2020/01/07	CAM SOP-00463	SM 23 4500-Cl E m
Chromium (VI) in Water	5	N/A	2020/01/07	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide	5	N/A	2020/01/06	CAM SOP-00457	OMOE E3015 m
Petroleum Hydrocarbons F2-F4 in Water (1)	5	2020/01/08	2020/01/09	CAM SOP-00316	CCME PHC-CWS m
Mercury	5	2020/01/07	2020/01/07	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	5	N/A	2020/01/07	CAM SOP-00447	EPA 6020B m
OC Pesticides (Selected) & PCB (2)	5	2020/01/07	2020/01/08	CAM SOP-00307	EPA 8081A/8082B m
OC Pesticides Summed Parameters	5	N/A	2020/01/07	CAM SOP-00307	EPA 8081A/8082B m
PAH Compounds in Water by GC/MS (SIM)	1	2020/01/08	2020/01/08	CAM SOP-00318	EPA 8270D m
PAH Compounds in Water by GC/MS (SIM)	4	2020/01/08	2020/01/09	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs	5	N/A	2020/01/07	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Your P.O. #: 73518145
Your Project #: 11205379-20
Your C.O.C. #: 748246-01-01

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/01/15
Report #: R6037448
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C002002
Received: 2020/01/03, 16:15

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(2) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C002002
Report Date: 2020/01/15

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		LRU269			LRU269		
Sampling Date		2020/01/03 09:35			2020/01/03 09:35		
COC Number		748246-01-01			748246-01-01		
	UNITS	GW-11205379-20-010320-JC-005	RDL	QC Batch	GW-11205379-20-010320-JC-005 Lab-Dup	RDL	QC Batch
Inorganics							
WAD Cyanide (Free)	ug/L	ND	1	6524778	ND	1	6524778
Dissolved Chloride (Cl-)	mg/L	6200	50	6524800			
Metals							
Chromium (VI)	ug/L	ND	2.5	6525538			
Mercury (Hg)	ug/L	ND	0.1	6526055			
Dissolved Antimony (Sb)	ug/L	ND	2.5	6524459			
Dissolved Arsenic (As)	ug/L	ND	5.0	6524459			
Dissolved Barium (Ba)	ug/L	75	10	6524459			
Dissolved Beryllium (Be)	ug/L	ND	2.5	6524459			
Dissolved Boron (B)	ug/L	330	50	6524459			
Dissolved Cadmium (Cd)	ug/L	ND	0.50	6524459			
Dissolved Chromium (Cr)	ug/L	ND	25	6524459			
Dissolved Cobalt (Co)	ug/L	5.8	2.5	6524459			
Dissolved Copper (Cu)	ug/L	ND	5.0	6524459			
Dissolved Lead (Pb)	ug/L	ND	2.5	6524459			
Dissolved Molybdenum (Mo)	ug/L	ND	2.5	6524459			
Dissolved Nickel (Ni)	ug/L	12	5.0	6524459			
Dissolved Selenium (Se)	ug/L	ND	10	6524459			
Dissolved Silver (Ag)	ug/L	ND	0.50	6524459			
Dissolved Sodium (Na)	ug/L	3700000	1000	6524459			
Dissolved Thallium (Tl)	ug/L	ND	0.25	6524459			
Dissolved Uranium (U)	ug/L	8.3	0.50	6524459			
Dissolved Vanadium (V)	ug/L	ND	2.5	6524459			
Dissolved Zinc (Zn)	ug/L	ND	25	6524459			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C002002
Report Date: 2020/01/15

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		LRU270			LRU270		
Sampling Date		2020/01/03 12:30			2020/01/03 12:30		
COC Number		748246-01-01			748246-01-01		
	UNITS	GW-11205379-20-010320-JC-006	RDL	QC Batch	GW-11205379-20-010320-JC-006 Lab-Dup	RDL	QC Batch
Inorganics							
WAD Cyanide (Free)	ug/L	2	1	6524778			
Dissolved Chloride (Cl-)	mg/L	10000	100	6524800			
Metals							
Chromium (VI)	ug/L	ND	2.5	6525538	ND	2.5	6525538
Mercury (Hg)	ug/L	ND	0.1	6526055			
Dissolved Antimony (Sb)	ug/L	ND	2.5	6524459			
Dissolved Arsenic (As)	ug/L	ND	5.0	6524459			
Dissolved Barium (Ba)	ug/L	140	10	6524459			
Dissolved Beryllium (Be)	ug/L	ND	2.5	6524459			
Dissolved Boron (B)	ug/L	240	50	6524459			
Dissolved Cadmium (Cd)	ug/L	ND	0.50	6524459			
Dissolved Chromium (Cr)	ug/L	ND	25	6524459			
Dissolved Cobalt (Co)	ug/L	ND	2.5	6524459			
Dissolved Copper (Cu)	ug/L	ND	5.0	6524459			
Dissolved Lead (Pb)	ug/L	ND	2.5	6524459			
Dissolved Molybdenum (Mo)	ug/L	13	2.5	6524459			
Dissolved Nickel (Ni)	ug/L	7.2	5.0	6524459			
Dissolved Selenium (Se)	ug/L	ND	10	6524459			
Dissolved Silver (Ag)	ug/L	ND	0.50	6524459			
Dissolved Sodium (Na)	ug/L	5900000	1000	6524459			
Dissolved Thallium (Tl)	ug/L	ND	0.25	6524459			
Dissolved Uranium (U)	ug/L	4.6	0.50	6524459			
Dissolved Vanadium (V)	ug/L	ND	2.5	6524459			
Dissolved Zinc (Zn)	ug/L	ND	25	6524459			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C002002
Report Date: 2020/01/15

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		LRU271	LRU272		LRU273		
Sampling Date		2020/01/03 13:20	2020/01/03 13:20		2020/01/03 14:32		
COC Number		748246-01-01	748246-01-01		748246-01-01		
	UNITS	GW-11205379-20-010320-JC-007	GW-11205379-20-010320-JC-008	RDL	GW-11205379-20-010320-JC-009	RDL	QC Batch
Inorganics							
WAD Cyanide (Free)	ug/L	ND	ND	1	ND	1	6524778
Dissolved Chloride (Cl-)	mg/L	2500	2500	25	8500	100	6524800
Metals							
Chromium (VI)	ug/L	ND	ND	0.50	ND	2.5	6525538
Mercury (Hg)	ug/L	ND	ND	0.1	ND	0.1	6526055
Dissolved Antimony (Sb)	ug/L	ND	ND	0.50	ND	2.5	6524459
Dissolved Arsenic (As)	ug/L	ND	ND	1.0	ND	5.0	6524459
Dissolved Barium (Ba)	ug/L	900	890	2.0	220	10	6524459
Dissolved Beryllium (Be)	ug/L	ND	ND	0.50	ND	2.5	6524459
Dissolved Boron (B)	ug/L	440	440	10	410	50	6524459
Dissolved Cadmium (Cd)	ug/L	ND	ND	0.10	ND	0.50	6524459
Dissolved Chromium (Cr)	ug/L	ND	ND	5.0	ND	25	6524459
Dissolved Cobalt (Co)	ug/L	ND	ND	0.50	4.7	2.5	6524459
Dissolved Copper (Cu)	ug/L	ND	ND	1.0	ND	5.0	6524459
Dissolved Lead (Pb)	ug/L	ND	ND	0.50	ND	2.5	6524459
Dissolved Molybdenum (Mo)	ug/L	ND	ND	0.50	12	2.5	6524459
Dissolved Nickel (Ni)	ug/L	ND	ND	1.0	15	5.0	6524459
Dissolved Selenium (Se)	ug/L	17	8.7	2.0	ND	10	6524459
Dissolved Silver (Ag)	ug/L	ND	ND	0.10	ND	0.50	6524459
Dissolved Sodium (Na)	ug/L	1500000	1500000	500	5200000	1000	6524459
Dissolved Thallium (Tl)	ug/L	ND	ND	0.050	ND	0.25	6524459
Dissolved Uranium (U)	ug/L	ND	ND	0.10	18	0.50	6524459
Dissolved Vanadium (V)	ug/L	ND	ND	0.50	ND	2.5	6524459
Dissolved Zinc (Zn)	ug/L	ND	ND	5.0	ND	25	6524459

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C002002
Report Date: 2020/01/15

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		LRU269	LRU270	LRU271	LRU272		
Sampling Date		2020/01/03 09:35	2020/01/03 12:30	2020/01/03 13:20	2020/01/03 13:20		
COC Number		748246-01-01	748246-01-01	748246-01-01	748246-01-01		
	UNITS	GW-11205379-20-010320-JC-005	GW-11205379-20-010320-JC-006	GW-11205379-20-010320-JC-007	GW-11205379-20-010320-JC-008	RDL	QC Batch
Calculated Parameters							
Chlordane (Total)	ug/L	ND	ND	ND	ND	0.005	6523752
o,p-DDD + p,p-DDD	ug/L	ND	ND	ND	ND	0.005	6523752
o,p-DDE + p,p-DDE	ug/L	ND	ND	ND	ND	0.005	6523752
o,p-DDT + p,p-DDT	ug/L	ND	ND	ND	ND	0.005	6523752
Total Endosulfan	ug/L	ND	ND	ND	ND	0.005	6523752
Total PCB	ug/L	ND	ND	ND	ND	0.05	6523752
Pesticides & Herbicides							
Aldrin	ug/L	ND	ND	ND	ND	0.005	6526179
Dieldrin	ug/L	ND	ND	ND	ND	0.005	6526179
a-Chlordane	ug/L	ND	ND	ND	ND	0.005	6526179
g-Chlordane	ug/L	ND	ND	ND	ND	0.005	6526179
o,p-DDD	ug/L	ND	ND	ND	ND	0.005	6526179
p,p-DDD	ug/L	ND	ND	ND	ND	0.005	6526179
o,p-DDE	ug/L	ND	ND	ND	ND	0.005	6526179
p,p-DDE	ug/L	ND	ND	ND	ND	0.005	6526179
o,p-DDT	ug/L	ND	ND	ND	ND	0.005	6526179
p,p-DDT	ug/L	ND	ND	ND	ND	0.005	6526179
Lindane	ug/L	ND	ND	ND	ND	0.003	6526179
Endosulfan I (alpha)	ug/L	ND	ND	ND	ND	0.005	6526179
Endosulfan II (beta)	ug/L	ND	ND	ND	ND	0.005	6526179
Endrin	ug/L	ND	ND	ND	ND	0.005	6526179
Heptachlor	ug/L	ND	ND	ND	ND	0.005	6526179
Heptachlor epoxide	ug/L	ND	ND	ND	ND	0.005	6526179
Hexachlorobenzene	ug/L	ND	ND	ND	ND	0.005	6526179
Hexachlorobutadiene	ug/L	ND	ND	ND	ND	0.009	6526179
Hexachloroethane	ug/L	ND	ND	ND	ND	0.01	6526179
Methoxychlor	ug/L	ND	ND	ND	ND	0.01	6526179
Aroclor 1242	ug/L	ND	ND	ND	ND	0.05	6526179
Aroclor 1248	ug/L	ND	ND	ND	ND	0.05	6526179
Aroclor 1254	ug/L	ND	ND	ND	ND	0.05	6526179
Aroclor 1260	ug/L	ND	ND	ND	ND	0.05	6526179
Surrogate Recovery (%)							
2,4,5,6-Tetrachloro-m-xylene	%	75	96	63	68		6526179

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C002002
Report Date: 2020/01/15

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		LRU269	LRU270	LRU271	LRU272		
Sampling Date		2020/01/03 09:35	2020/01/03 12:30	2020/01/03 13:20	2020/01/03 13:20		
COC Number		748246-01-01	748246-01-01	748246-01-01	748246-01-01		
	UNITS	GW-11205379-20-010320-JC-005	GW-11205379-20-010320-JC-006	GW-11205379-20-010320-JC-007	GW-11205379-20-010320-JC-008	RDL	QC Batch
Decachlorobiphenyl	%	122	128	121	116		6526179

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		LRU272			LRU273		
Sampling Date		2020/01/03 13:20			2020/01/03 14:32		
COC Number		748246-01-01			748246-01-01		
	UNITS	GW-11205379-20-010320-JC-008 Lab-Dup	RDL	QC Batch	GW-11205379-20-010320-JC-009	RDL	QC Batch
Calculated Parameters							
Chlordane (Total)	ug/L				ND	0.005	6523752
o,p-DDD + p,p-DDD	ug/L				ND	0.005	6523752
o,p-DDE + p,p-DDE	ug/L				ND	0.005	6523752
o,p-DDT + p,p-DDT	ug/L				ND	0.005	6523752
Total Endosulfan	ug/L				ND	0.005	6523752
Total PCB	ug/L				ND	0.05	6523752
Pesticides & Herbicides							
Aldrin	ug/L	ND	0.005	6526179	ND	0.005	6526179
Dieldrin	ug/L	ND	0.005	6526179	ND	0.005	6526179
a-Chlordane	ug/L	ND	0.005	6526179	ND	0.005	6526179
g-Chlordane	ug/L	ND	0.005	6526179	ND	0.005	6526179
o,p-DDD	ug/L	ND	0.005	6526179	ND	0.005	6526179
p,p-DDD	ug/L	ND	0.005	6526179	ND	0.005	6526179
o,p-DDE	ug/L	ND	0.005	6526179	ND	0.005	6526179
p,p-DDE	ug/L	ND	0.005	6526179	ND	0.005	6526179
o,p-DDT	ug/L	ND	0.005	6526179	ND	0.005	6526179
p,p-DDT	ug/L	ND	0.005	6526179	ND	0.005	6526179
Lindane	ug/L	ND	0.003	6526179	ND	0.003	6526179
Endosulfan I (alpha)	ug/L	ND	0.005	6526179	ND	0.005	6526179
Endosulfan II (beta)	ug/L	ND	0.005	6526179	ND	0.005	6526179
Endrin	ug/L	ND	0.005	6526179	ND	0.005	6526179
Heptachlor	ug/L	ND	0.005	6526179	ND	0.005	6526179
Heptachlor epoxide	ug/L	ND	0.005	6526179	ND	0.005	6526179
Hexachlorobenzene	ug/L	ND	0.005	6526179	ND	0.005	6526179
Hexachlorobutadiene	ug/L	ND	0.009	6526179	ND	0.009	6526179
Hexachloroethane	ug/L	ND	0.01	6526179	ND	0.01	6526179
Methoxychlor	ug/L	ND	0.01	6526179	ND	0.01	6526179
Aroclor 1242	ug/L	ND	0.05	6526179	ND	0.05	6526179
Aroclor 1248	ug/L	ND	0.05	6526179	ND	0.05	6526179
Aroclor 1254	ug/L	ND	0.05	6526179	ND	0.05	6526179
Aroclor 1260	ug/L	ND	0.05	6526179	ND	0.05	6526179

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C002002
Report Date: 2020/01/15

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		LRU272			LRU273		
Sampling Date		2020/01/03 13:20			2020/01/03 14:32		
COC Number		748246-01-01			748246-01-01		
	UNITS	GW-11205379-20-010320-JC-008 Lab-Dup	RDL	QC Batch	GW-11205379-20-010320-JC-009	RDL	QC Batch
Surrogate Recovery (%)							
2,4,5,6-Tetrachloro-m-xylene	%	66		6526179	66		6526179
Decachlorobiphenyl	%	110		6526179	98		6526179

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C002002
Report Date: 2020/01/15

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 PAHS (WATER)

BV Labs ID		LRU269	LRU270			LRU270		
Sampling Date		2020/01/03 09:35	2020/01/03 12:30			2020/01/03 12:30		
COC Number		748246-01-01	748246-01-01			748246-01-01		
	UNITS	GW-11205379-20-010320-JC-005	GW-11205379-20-010320-JC-006	RDL	QC Batch	GW-11205379-20-010320-JC-006 Lab-Dup	RDL	QC Batch
Calculated Parameters								
Methylnaphthalene, 2-(1-)	ug/L	ND	ND	0.071	6523753			
Polyaromatic Hydrocarbons								
Acenaphthene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Acenaphthylene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Anthracene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Benzo(a)anthracene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Benzo(a)pyrene	ug/L	ND	ND	0.010	6528865	ND	0.010	6528865
Benzo(b/j)fluoranthene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Benzo(g,h,i)perylene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Benzo(k)fluoranthene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Chrysene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Dibenzo(a,h)anthracene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Fluoranthene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Fluorene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
1-Methylnaphthalene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
2-Methylnaphthalene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Naphthalene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Phenanthrene	ug/L	ND	ND	0.030	6528865	ND	0.030	6528865
Pyrene	ug/L	ND	ND	0.050	6528865	ND	0.050	6528865
Surrogate Recovery (%)								
D10-Anthracene	%	106	105		6528865	104		6528865
D14-Terphenyl (FS)	%	93	88		6528865	87		6528865
D8-Acenaphthylene	%	90	87		6528865	91		6528865

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 PAHS (WATER)

BV Labs ID		LRU271	LRU272	LRU273		
Sampling Date		2020/01/03 13:20	2020/01/03 13:20	2020/01/03 14:32		
COC Number		748246-01-01	748246-01-01	748246-01-01		
	UNITS	GW-11205379-20-010320-JC-007	GW-11205379-20-010320-JC-008	GW-11205379-20-010320-JC-009	RDL	QC Batch
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/L	ND	ND	ND	0.071	6523753
Polyaromatic Hydrocarbons						
Acenaphthene	ug/L	ND	ND	ND	0.050	6528865
Acenaphthylene	ug/L	ND	ND	ND	0.050	6528865
Anthracene	ug/L	ND	ND	ND	0.050	6528865
Benzo(a)anthracene	ug/L	ND	ND	ND	0.050	6528865
Benzo(a)pyrene	ug/L	ND	ND	ND	0.010	6528865
Benzo(b/j)fluoranthene	ug/L	ND	ND	ND	0.050	6528865
Benzo(g,h,i)perylene	ug/L	ND	ND	ND	0.050	6528865
Benzo(k)fluoranthene	ug/L	ND	ND	ND	0.050	6528865
Chrysene	ug/L	ND	ND	ND	0.050	6528865
Dibenzo(a,h)anthracene	ug/L	ND	ND	ND	0.050	6528865
Fluoranthene	ug/L	ND	ND	ND	0.050	6528865
Fluorene	ug/L	ND	ND	ND	0.050	6528865
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	ND	0.050	6528865
1-Methylnaphthalene	ug/L	ND	ND	ND	0.050	6528865
2-Methylnaphthalene	ug/L	ND	ND	ND	0.050	6528865
Naphthalene	ug/L	ND	ND	ND	0.050	6528865
Phenanthrene	ug/L	ND	ND	ND	0.030	6528865
Pyrene	ug/L	ND	ND	ND	0.050	6528865
Surrogate Recovery (%)						
D10-Anthracene	%	105	107	96		6528865
D14-Terphenyl (FS)	%	88	87	86		6528865
D8-Acenaphthylene	%	88	90	75		6528865

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRU269	LRU270			LRU270		
Sampling Date		2020/01/03 09:35	2020/01/03 12:30			2020/01/03 12:30		
COC Number		748246-01-01	748246-01-01			748246-01-01		
	UNITS	GW-11205379-20-010320-JC-005	GW-11205379-20-010320-JC-006	RDL	QC Batch	GW-11205379-20-010320-JC-006 Lab-Dup	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	0.50	6523754			
Volatile Organics								
Acetone (2-Propanone)	ug/L	ND	ND	10	6524472			
Benzene	ug/L	ND	ND	0.20	6524472			
Bromodichloromethane	ug/L	ND	ND	0.50	6524472			
Bromoform	ug/L	ND	ND	1.0	6524472			
Bromomethane	ug/L	ND	ND	0.50	6524472			
Carbon Tetrachloride	ug/L	ND	ND	0.20	6524472			
Chlorobenzene	ug/L	ND	ND	0.20	6524472			
Chloroform	ug/L	ND	ND	0.20	6524472			
Dibromochloromethane	ug/L	ND	ND	0.50	6524472			
1,2-Dichlorobenzene	ug/L	ND	ND	0.50	6524472			
1,3-Dichlorobenzene	ug/L	ND	ND	0.50	6524472			
1,4-Dichlorobenzene	ug/L	ND	ND	0.50	6524472			
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	1.0	6524472			
1,1-Dichloroethane	ug/L	ND	ND	0.20	6524472			
1,2-Dichloroethane	ug/L	ND	ND	0.50	6524472			
1,1-Dichloroethylene	ug/L	ND	ND	0.20	6524472			
cis-1,2-Dichloroethylene	ug/L	ND	ND	0.50	6524472			
trans-1,2-Dichloroethylene	ug/L	ND	ND	0.50	6524472			
1,2-Dichloropropane	ug/L	ND	ND	0.20	6524472			
cis-1,3-Dichloropropene	ug/L	ND	ND	0.30	6524472			
trans-1,3-Dichloropropene	ug/L	ND	ND	0.40	6524472			
Ethylbenzene	ug/L	ND	ND	0.20	6524472			
Ethylene Dibromide	ug/L	ND	ND	0.20	6524472			
Hexane	ug/L	ND	ND	1.0	6524472			
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	2.0	6524472			
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	10	6524472			
Methyl Isobutyl Ketone	ug/L	ND	ND	5.0	6524472			
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	0.50	6524472			
Styrene	ug/L	ND	ND	0.50	6524472			
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	0.50	6524472			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRU269	LRU270			LRU270		
Sampling Date		2020/01/03 09:35	2020/01/03 12:30			2020/01/03 12:30		
COC Number		748246-01-01	748246-01-01			748246-01-01		
	UNITS	GW-11205379-20-010320-JC-005	GW-11205379-20-010320-JC-006	RDL	QC Batch	GW-11205379-20-010320-JC-006 Lab-Dup	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	0.50	6524472			
Tetrachloroethylene	ug/L	ND	ND	0.20	6524472			
Toluene	ug/L	ND	ND	0.20	6524472			
1,1,1-Trichloroethane	ug/L	ND	ND	0.20	6524472			
1,1,2-Trichloroethane	ug/L	ND	ND	0.50	6524472			
Trichloroethylene	ug/L	ND	ND	0.20	6524472			
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	0.50	6524472			
Vinyl Chloride	ug/L	ND	ND	0.20	6524472			
p+m-Xylene	ug/L	ND	ND	0.20	6524472			
o-Xylene	ug/L	ND	ND	0.20	6524472			
Total Xylenes	ug/L	ND	ND	0.20	6524472			
F1 (C6-C10)	ug/L	ND	ND	25	6524472			
F1 (C6-C10) - BTEX	ug/L	ND	ND	25	6524472			
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	100	6528868	ND	100	6528868
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	200	6528868	ND	200	6528868
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	200	6528868	ND	200	6528868
Reached Baseline at C50	ug/L	Yes	Yes		6528868	Yes		6528868
Surrogate Recovery (%)								
o-Terphenyl	%	92	92		6528868	92		6528868
4-Bromofluorobenzene	%	97	98		6524472			
D4-1,2-Dichloroethane	%	110	112		6524472			
D8-Toluene	%	102	100		6524472			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRU271	LRU272	LRU273		
Sampling Date		2020/01/03 13:20	2020/01/03 13:20	2020/01/03 14:32		
COC Number		748246-01-01	748246-01-01	748246-01-01		
	UNITS	GW-11205379-20-010320-JC-007	GW-11205379-20-010320-JC-008	GW-11205379-20-010320-JC-009	RDL	QC Batch
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	ND	0.50	6523754
Volatile Organics						
Acetone (2-Propanone)	ug/L	ND	ND	ND	10	6524472
Benzene	ug/L	ND	ND	ND	0.20	6524472
Bromodichloromethane	ug/L	ND	ND	ND	0.50	6524472
Bromoform	ug/L	ND	ND	ND	1.0	6524472
Bromomethane	ug/L	ND	ND	ND	0.50	6524472
Carbon Tetrachloride	ug/L	ND	ND	ND	0.20	6524472
Chlorobenzene	ug/L	ND	ND	ND	0.20	6524472
Chloroform	ug/L	ND	ND	ND	0.20	6524472
Dibromochloromethane	ug/L	ND	ND	ND	0.50	6524472
1,2-Dichlorobenzene	ug/L	ND	ND	ND	0.50	6524472
1,3-Dichlorobenzene	ug/L	ND	ND	ND	0.50	6524472
1,4-Dichlorobenzene	ug/L	ND	ND	ND	0.50	6524472
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	ND	1.0	6524472
1,1-Dichloroethane	ug/L	ND	ND	ND	0.20	6524472
1,2-Dichloroethane	ug/L	ND	ND	ND	0.50	6524472
1,1-Dichloroethylene	ug/L	ND	ND	ND	0.20	6524472
cis-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.50	6524472
trans-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.50	6524472
1,2-Dichloropropane	ug/L	ND	ND	ND	0.20	6524472
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	0.30	6524472
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	0.40	6524472
Ethylbenzene	ug/L	ND	ND	ND	0.20	6524472
Ethylene Dibromide	ug/L	ND	ND	ND	0.20	6524472
Hexane	ug/L	ND	ND	ND	1.0	6524472
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	ND	2.0	6524472
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	ND	10	6524472
Methyl Isobutyl Ketone	ug/L	ND	ND	ND	5.0	6524472
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	ND	0.50	6524472
Styrene	ug/L	ND	ND	ND	0.50	6524472
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	0.50	6524472
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	0.50	6524472

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		LRU271	LRU272	LRU273		
Sampling Date		2020/01/03 13:20	2020/01/03 13:20	2020/01/03 14:32		
COC Number		748246-01-01	748246-01-01	748246-01-01		
	UNITS	GW-11205379-20-010320-JC-007	GW-11205379-20-010320-JC-008	GW-11205379-20-010320-JC-009	RDL	QC Batch
Tetrachloroethylene	ug/L	ND	ND	ND	0.20	6524472
Toluene	ug/L	0.36	0.35	ND	0.20	6524472
1,1,1-Trichloroethane	ug/L	ND	ND	ND	0.20	6524472
1,1,2-Trichloroethane	ug/L	ND	ND	ND	0.50	6524472
Trichloroethylene	ug/L	ND	ND	ND	0.20	6524472
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	ND	0.50	6524472
Vinyl Chloride	ug/L	ND	ND	ND	0.20	6524472
p+m-Xylene	ug/L	0.39	0.41	ND	0.20	6524472
o-Xylene	ug/L	ND	ND	ND	0.20	6524472
Total Xylenes	ug/L	0.39	0.41	ND	0.20	6524472
F1 (C6-C10)	ug/L	ND	ND	ND	25	6524472
F1 (C6-C10) - BTEX	ug/L	ND	ND	ND	25	6524472
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	ND	100	6528868
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	ND	200	6528868
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	ND	200	6528868
Reached Baseline at C50	ug/L	Yes	Yes	Yes		6528868
Surrogate Recovery (%)						
o-Terphenyl	%	92	93	91		6528868
4-Bromofluorobenzene	%	98	98	96		6524472
D4-1,2-Dichloroethane	%	107	107	109		6524472
D8-Toluene	%	102	102	101		6524472

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

TEST SUMMARY

BV Labs ID: LRU269
Sample ID: GW-11205379-20-010320-JC-005
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6523753	N/A	2020/01/09	Automated Statchk
1,3-Dichloropropene Sum	CALC	6523754	N/A	2020/01/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6524800	N/A	2020/01/07	Alina Dobreanu
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le
Free (WAD) Cyanide	SKAL/CN	6524778	N/A	2020/01/06	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6528868	2020/01/08	2020/01/09	Prabhjot Gulati
Mercury	CV/AA	6526055	2020/01/07	2020/01/07	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6524459	N/A	2020/01/07	Arefa Dabhad
OC Pesticides (Selected) & PCB	GC/ECD	6526179	2020/01/07	2020/01/08	Li Peng
OC Pesticides Summed Parameters	CALC	6523752	N/A	2020/01/07	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6528865	2020/01/08	2020/01/08	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

BV Labs ID: LRU269 Dup
Sample ID: GW-11205379-20-010320-JC-005
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	6524778	N/A	2020/01/06	Gnana Thomas

BV Labs ID: LRU270
Sample ID: GW-11205379-20-010320-JC-006
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6523753	N/A	2020/01/09	Automated Statchk
1,3-Dichloropropene Sum	CALC	6523754	N/A	2020/01/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6524800	N/A	2020/01/07	Alina Dobreanu
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le
Free (WAD) Cyanide	SKAL/CN	6524778	N/A	2020/01/06	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6528868	2020/01/08	2020/01/09	Prabhjot Gulati
Mercury	CV/AA	6526055	2020/01/07	2020/01/07	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6524459	N/A	2020/01/07	Arefa Dabhad
OC Pesticides (Selected) & PCB	GC/ECD	6526179	2020/01/07	2020/01/08	Li Peng
OC Pesticides Summed Parameters	CALC	6523752	N/A	2020/01/07	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6528865	2020/01/08	2020/01/09	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

BV Labs ID: LRU270 Dup
Sample ID: GW-11205379-20-010320-JC-006
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le

TEST SUMMARY

BV Labs ID: LRU270 Dup
Sample ID: GW-11205379-20-010320-JC-006
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6528868	2020/01/08	2020/01/09	Prabhjot Gulati
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6528865	2020/01/08	2020/01/09	Mitesh Raj

BV Labs ID: LRU271
Sample ID: GW-11205379-20-010320-JC-007
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6523753	N/A	2020/01/09	Automated Statchk
1,3-Dichloropropene Sum	CALC	6523754	N/A	2020/01/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6524800	N/A	2020/01/07	Alina Dobreanu
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le
Free (WAD) Cyanide	SKAL/CN	6524778	N/A	2020/01/06	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6528868	2020/01/08	2020/01/09	Prabhjot Gulati
Mercury	CV/AA	6526055	2020/01/07	2020/01/07	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6524459	N/A	2020/01/07	Arefa Dabhad
OC Pesticides (Selected) & PCB	GC/ECD	6526179	2020/01/07	2020/01/08	Li Peng
OC Pesticides Summed Parameters	CALC	6523752	N/A	2020/01/07	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6528865	2020/01/08	2020/01/09	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

BV Labs ID: LRU272
Sample ID: GW-11205379-20-010320-JC-008
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6523753	N/A	2020/01/09	Automated Statchk
1,3-Dichloropropene Sum	CALC	6523754	N/A	2020/01/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6524800	N/A	2020/01/07	Alina Dobreanu
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le
Free (WAD) Cyanide	SKAL/CN	6524778	N/A	2020/01/06	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6528868	2020/01/08	2020/01/09	Prabhjot Gulati
Mercury	CV/AA	6526055	2020/01/07	2020/01/07	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6524459	N/A	2020/01/07	Arefa Dabhad
OC Pesticides (Selected) & PCB	GC/ECD	6526179	2020/01/07	2020/01/08	Li Peng
OC Pesticides Summed Parameters	CALC	6523752	N/A	2020/01/07	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6528865	2020/01/08	2020/01/09	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: LRU272 Dup
Sample ID: GW-11205379-20-010320-JC-008
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
OC Pesticides (Selected) & PCB	GC/ECD	6526179	2020/01/07	2020/01/08	Li Peng

BV Labs ID: LRU273
Sample ID: GW-11205379-20-010320-JC-009
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6523753	N/A	2020/01/09	Automated Statchk
1,3-Dichloropropene Sum	CALC	6523754	N/A	2020/01/08	Automated Statchk
Chloride by Automated Colourimetry	KONE	6524800	N/A	2020/01/07	Alina Dobreanu
Chromium (VI) in Water	IC	6525538	N/A	2020/01/07	Lang Le
Free (WAD) Cyanide	SKAL/CN	6524778	N/A	2020/01/06	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6528868	2020/01/08	2020/01/09	Prabhjot Gulati
Mercury	CV/AA	6526055	2020/01/07	2020/01/07	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6524459	N/A	2020/01/07	Arefa Dabhad
OC Pesticides (Selected) & PCB	GC/ECD	6526179	2020/01/07	2020/01/08	Li Peng
OC Pesticides Summed Parameters	CALC	6523752	N/A	2020/01/07	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6528865	2020/01/08	2020/01/09	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6524472	N/A	2020/01/07	Denis Reid

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.3°C
Package 2	2.3°C

Revised report (2020/01/15): Organochlorine parameter list has been revised to include Reg. 153 parameters only.

Sample LRU269 [GW-11205379-20-010320-JC-005] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample LRU270 [GW-11205379-20-010320-JC-006] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample LRU273 [GW-11205379-20-010320-JC-009] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6524472	4-Bromofluorobenzene	2020/01/07	98	70 - 130	98	70 - 130	96	%		
6524472	D4-1,2-Dichloroethane	2020/01/07	111	70 - 130	106	70 - 130	108	%		
6524472	D8-Toluene	2020/01/07	103	70 - 130	104	70 - 130	103	%		
6526179	2,4,5,6-Tetrachloro-m-xylene	2020/01/08	79 (6)	50 - 130	79	50 - 130	78	%		
6526179	Decachlorobiphenyl	2020/01/08	108 (6)	50 - 130	123	50 - 130	123	%		
6528865	D10-Anthracene	2020/01/08	104 (10)	50 - 130	104	50 - 130	108	%		
6528865	D14-Terphenyl (FS)	2020/01/08	95 (10)	50 - 130	101	50 - 130	103	%		
6528865	D8-Acenaphthylene	2020/01/08	94 (10)	50 - 130	93	50 - 130	86	%		
6528868	o-Terphenyl	2020/01/09	94 (12)	60 - 130	95	60 - 130	93	%		
6524459	Dissolved Antimony (Sb)	2020/01/07	108	80 - 120	98	80 - 120	ND, RDL=0.50	ug/L	8.6 (1)	20
6524459	Dissolved Arsenic (As)	2020/01/07	101	80 - 120	98	80 - 120	ND, RDL=1.0	ug/L	NC (1)	20
6524459	Dissolved Barium (Ba)	2020/01/07	99	80 - 120	98	80 - 120	ND, RDL=2.0	ug/L	0.35 (1)	20
6524459	Dissolved Beryllium (Be)	2020/01/07	109	80 - 120	96	80 - 120	ND, RDL=0.50	ug/L	NC (1)	20
6524459	Dissolved Boron (B)	2020/01/07	104	80 - 120	95	80 - 120	ND, RDL=10	ug/L	1.1 (1)	20
6524459	Dissolved Cadmium (Cd)	2020/01/07	101	80 - 120	97	80 - 120	ND, RDL=0.10	ug/L	NC (1)	20
6524459	Dissolved Chromium (Cr)	2020/01/07	97	80 - 120	96	80 - 120	ND, RDL=5.0	ug/L	NC (1)	20
6524459	Dissolved Cobalt (Co)	2020/01/07	100	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	0 (1)	20
6524459	Dissolved Copper (Cu)	2020/01/07	107	80 - 120	100	80 - 120	ND, RDL=1.0	ug/L	14 (1)	20
6524459	Dissolved Lead (Pb)	2020/01/07	92	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	NC (1)	20
6524459	Dissolved Molybdenum (Mo)	2020/01/07	109	80 - 120	100	80 - 120	ND, RDL=0.50	ug/L	2.7 (1)	20
6524459	Dissolved Nickel (Ni)	2020/01/07	92	80 - 120	96	80 - 120	ND, RDL=1.0	ug/L	8.9 (1)	20
6524459	Dissolved Selenium (Se)	2020/01/07	97	80 - 120	99	80 - 120	ND, RDL=2.0	ug/L	NC (1)	20
6524459	Dissolved Silver (Ag)	2020/01/07	96	80 - 120	96	80 - 120	ND, RDL=0.10	ug/L	NC (1)	20
6524459	Dissolved Sodium (Na)	2020/01/07	NC	80 - 120	98	80 - 120	ND, RDL=100	ug/L	1.3 (1)	20
6524459	Dissolved Thallium (Tl)	2020/01/07	94	80 - 120	98	80 - 120	ND, RDL=0.050	ug/L	NC (1)	20
6524459	Dissolved Uranium (U)	2020/01/07	96	80 - 120	98	80 - 120	ND, RDL=0.10	ug/L	0.96 (1)	20
6524459	Dissolved Vanadium (V)	2020/01/07	102	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	3.8 (1)	20
6524459	Dissolved Zinc (Zn)	2020/01/07	93	80 - 120	96	80 - 120	ND, RDL=5.0	ug/L	NC (1)	20
6524472	1,1,1,2-Tetrachloroethane	2020/01/07	98	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	1,1,1-Trichloroethane	2020/01/07	88	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6524472	1,1,2,2-Tetrachloroethane	2020/01/07	106	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	1,1,2-Trichloroethane	2020/01/07	107	70 - 130	107	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	1,1-Dichloroethane	2020/01/07	94	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	1,1-Dichloroethylene	2020/01/07	99	70 - 130	110	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	1,2-Dichlorobenzene	2020/01/07	91	70 - 130	96	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	1,2-Dichloroethane	2020/01/07	104	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	1,2-Dichloropropane	2020/01/07	93	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	1,3-Dichlorobenzene	2020/01/07	89	70 - 130	95	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	1,4-Dichlorobenzene	2020/01/07	97	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	Acetone (2-Propanone)	2020/01/07	98	60 - 140	85	60 - 140	ND, RDL=10	ug/L	NC (1)	30
6524472	Benzene	2020/01/07	91	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	Bromodichloromethane	2020/01/07	92	70 - 130	94	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	Bromoform	2020/01/07	99	70 - 130	98	70 - 130	ND, RDL=1.0	ug/L	NC (1)	30
6524472	Bromomethane	2020/01/07	84	60 - 140	99	60 - 140	ND, RDL=0.50	ug/L	NC (1)	30
6524472	Carbon Tetrachloride	2020/01/07	85	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	Chlorobenzene	2020/01/07	89	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	Chloroform	2020/01/07	88	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	cis-1,2-Dichloroethylene	2020/01/07	89	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	cis-1,3-Dichloropropene	2020/01/07	98	70 - 130	93	70 - 130	ND, RDL=0.30	ug/L	NC (1)	30
6524472	Dibromochloromethane	2020/01/07	101	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	Dichlorodifluoromethane (FREON 12)	2020/01/07	62	60 - 140	80	60 - 140	ND, RDL=1.0	ug/L	NC (1)	30
6524472	Ethylbenzene	2020/01/07	89	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	Ethylene Dibromide	2020/01/07	103	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	F1 (C6-C10) - BTEX	2020/01/07					ND, RDL=25	ug/L	NC (1)	30
6524472	F1 (C6-C10)	2020/01/07	91	60 - 140	95	60 - 140	ND, RDL=25	ug/L	NC (1)	30
6524472	Hexane	2020/01/07	94	70 - 130	103	70 - 130	ND, RDL=1.0	ug/L	NC (1)	30
6524472	Methyl Ethyl Ketone (2-Butanone)	2020/01/07	105	60 - 140	90	60 - 140	ND, RDL=10	ug/L	NC (1)	30
6524472	Methyl Isobutyl Ketone	2020/01/07	105	70 - 130	96	70 - 130	ND, RDL=5.0	ug/L	NC (1)	30
6524472	Methyl t-butyl ether (MTBE)	2020/01/07	90	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	Methylene Chloride(Dichloromethane)	2020/01/07	91	70 - 130	96	70 - 130	ND, RDL=2.0	ug/L	NC (1)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6524472	o-Xylene	2020/01/07	91	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	p+m-Xylene	2020/01/07	94	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	0 (1)	30
6524472	Styrene	2020/01/07	89	70 - 130	96	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	Tetrachloroethylene	2020/01/07	81	70 - 130	90	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	Toluene	2020/01/07	88	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	1.4 (1)	30
6524472	Total Xylenes	2020/01/07					ND, RDL=0.20	ug/L	0 (1)	30
6524472	trans-1,2-Dichloroethylene	2020/01/07	90	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	trans-1,3-Dichloropropene	2020/01/07	112	70 - 130	101	70 - 130	ND, RDL=0.40	ug/L	NC (1)	30
6524472	Trichloroethylene	2020/01/07	87	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524472	Trichlorofluoromethane (FREON 11)	2020/01/07	91	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6524472	Vinyl Chloride	2020/01/07	87	70 - 130	105	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6524778	WAD Cyanide (Free)	2020/01/06	98 (2)	80 - 120	101	80 - 120	ND,RDL=1	ug/L	NC (3)	20
6524800	Dissolved Chloride (Cl-)	2020/01/07	NC	80 - 120	104	80 - 120	ND, RDL=1.0	mg/L	1.4 (1)	20
6525538	Chromium (VI)	2020/01/07	100 (4)	80 - 120	103	80 - 120	ND, RDL=0.50	ug/L	NC (5)	20
6526055	Mercury (Hg)	2020/01/07	92	75 - 125	97	80 - 120	ND, RDL=0.1	ug/L	NC (1)	20
6526179	a-Chlordane	2020/01/08	94 (6)	50 - 130	88	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	Aldrin	2020/01/08	73 (6)	50 - 130	75	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	Aroclor 1242	2020/01/08					ND, RDL=0.05	ug/L	NC (9)	30
6526179	Aroclor 1248	2020/01/08					ND, RDL=0.05	ug/L	NC (9)	30
6526179	Aroclor 1254	2020/01/08					ND, RDL=0.05	ug/L	NC (9)	30
6526179	Aroclor 1260	2020/01/08					ND, RDL=0.05	ug/L	NC (9)	30
6526179	Dieldrin	2020/01/08	113 (6)	50 - 130	114	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	Endosulfan I (alpha)	2020/01/08	77 (6)	50 - 130	79	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	Endosulfan II (beta)	2020/01/08	87 (6)	50 - 130	89	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	Endrin	2020/01/08	86 (6)	50 - 130	87	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	g-Chlordane	2020/01/08	93 (6)	50 - 130	89	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	Heptachlor epoxide	2020/01/08	85 (6)	50 - 130	84	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	Heptachlor	2020/01/08	11 (7,6)	50 - 130	68	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	Hexachlorobenzene	2020/01/08	85 (6)	50 - 130	89	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	Hexachlorobutadiene	2020/01/08	75 (6)	50 - 130	85	50 - 130	ND, RDL=0.009	ug/L	NC (9)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6526179	Hexachloroethane	2020/01/08	67 (6)	50 - 130	74	50 - 130	ND, RDL=0.01	ug/L	NC (9)	30
6526179	Lindane	2020/01/08	75 (6)	50 - 130	81	50 - 130	ND, RDL=0.003	ug/L	NC (9)	30
6526179	Methoxychlor	2020/01/08	63 (6)	50 - 130	80	50 - 130	ND, RDL=0.01	ug/L	NC (9)	30
6526179	o,p-DDD	2020/01/08	110 (6)	50 - 130	97	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	o,p-DDE	2020/01/08	94 (6)	50 - 130	85	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	o,p-DDT	2020/01/08	75 (6)	50 - 130	72	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	p,p-DDD	2020/01/08	109 (6)	50 - 130	96	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	p,p-DDE	2020/01/08	83 (6)	50 - 130	77	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6526179	p,p-DDT	2020/01/08	77 (6)	50 - 130	80	50 - 130	ND, RDL=0.005	ug/L	NC (9)	30
6528865	1-Methylnaphthalene	2020/01/09	112 (10)	50 - 130	101	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	2-Methylnaphthalene	2020/01/09	101 (10)	50 - 130	90	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Acenaphthene	2020/01/09	100 (10)	50 - 130	97	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Acenaphthylene	2020/01/09	94 (10)	50 - 130	91	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Anthracene	2020/01/09	95 (10)	50 - 130	98	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Benzo(a)anthracene	2020/01/09	90 (10)	50 - 130	103	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Benzo(a)pyrene	2020/01/09	87 (10)	50 - 130	101	50 - 130	ND, RDL=0.010	ug/L	NC (11)	30
6528865	Benzo(b/j)fluoranthene	2020/01/09	87 (10)	50 - 130	100	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Benzo(g,h,i)perylene	2020/01/09	85 (10)	50 - 130	99	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Benzo(k)fluoranthene	2020/01/09	88 (10)	50 - 130	102	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Chrysene	2020/01/09	87 (10)	50 - 130	99	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Dibenzo(a,h)anthracene	2020/01/09	86 (10)	50 - 130	103	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Fluoranthene	2020/01/09	100 (10)	50 - 130	104	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Fluorene	2020/01/09	94 (10)	50 - 130	94	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Indeno(1,2,3-cd)pyrene	2020/01/09	89 (10)	50 - 130	103	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Naphthalene	2020/01/09	96 (10)	50 - 130	75	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528865	Phenanthrene	2020/01/09	95 (10)	50 - 130	97	50 - 130	ND, RDL=0.030	ug/L	NC (11)	30
6528865	Pyrene	2020/01/09	98 (10)	50 - 130	102	50 - 130	ND, RDL=0.050	ug/L	NC (11)	30
6528868	F2 (C10-C16 Hydrocarbons)	2020/01/09	91 (12)	50 - 130	92	60 - 130	ND, RDL=100	ug/L	NC (11)	30
6528868	F3 (C16-C34 Hydrocarbons)	2020/01/09	84 (12)	50 - 130	87	60 - 130	ND, RDL=200	ug/L	NC (11)	30

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6528868	F4 (C34-C50 Hydrocarbons)	2020/01/09	78 (12)	50 - 130	80	60 - 130	ND, RDL=200	ug/L	NC (11)	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [LRU269-05]

(3) Duplicate Parent ID [LRU269-05]

(4) Matrix Spike Parent ID [LRU270-03]

(5) Duplicate Parent ID [LRU270-03]

(6) Matrix Spike Parent ID [LRU271-01]

(7) The recovery was below the lower control limit. This may represent a low bias in some results for flagged analytes.

(8) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(9) Duplicate Parent ID [LRU272-01]

(10) Matrix Spike Parent ID [LRU269-07]

(11) Duplicate Parent ID [LRU270-07]

(12) Matrix Spike Parent ID [LRU271-07]

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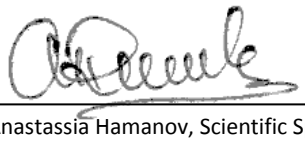
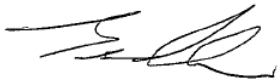
VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist



Brad Newman, Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 GHD Limited	Company Name:		Quotation #:	B90001	BV Labs Job #:	Bottle Order #: 748246
Attention:	Laura Ermeta (AP-735)	Attention:		P.O. #:	73518145		
Address:	455 Phillip St Waterloo ON N2L 3X2	Address:		Project:	11205379-20	COC #: C#748246-01-01	Project Manager: Ema Gitej
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Project Name:			
Email:	APinvoices-735@ghd.com	Email:		Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☒ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558. ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg	O.Reg 153 OC Pesticides	# of Bottles	Comments
1	GW-1120537	9-010320-JC-005	JAN 3 2020	9:35	GW	X	X	X	X	X		
2	GW-11205379-	010320-JC-006	JAN 3 2020	12:30	GW	X	X	X	X	X		
3	GW-11205379-	010320-JC-007	JAN 3 2020	13:20	GW	X	X	X	X	X		
4	GW-11205379-	010320-JC-008	JAN 3 2020	13:20	GW	X	X	X	X	X		
5	GW-11205379-	010320-JC-009	JAN 3 2020	14:32	GW	X	X	X	X	X		
6												
7												
8												
9						JC						
10												

03-Jan-20 16:15
Ema Gitej
C002002
WVL ENV-1182

on ice

RECEIVED IN OTTAWA

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
JACQUELYN CURPHEY	20/01/03	16:10	Serge Léger	20/01/03	16:15	
			DIPIKA SINGH	20/01/04	08:13	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	2,3,5 / 2,2,3	Present		
		Intact	X	

Custody Seal Intact

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

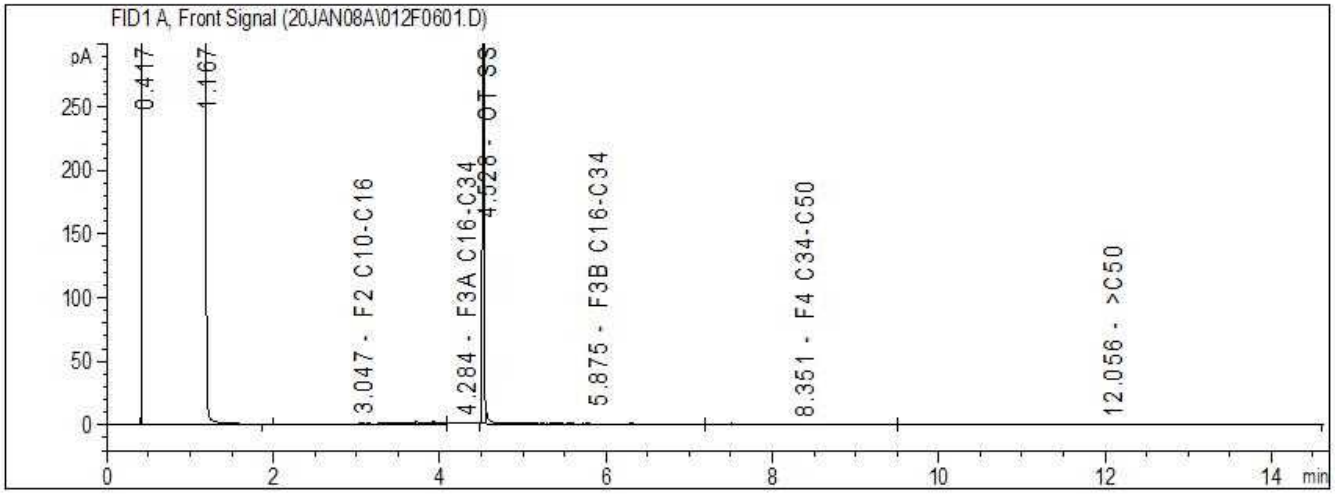
** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

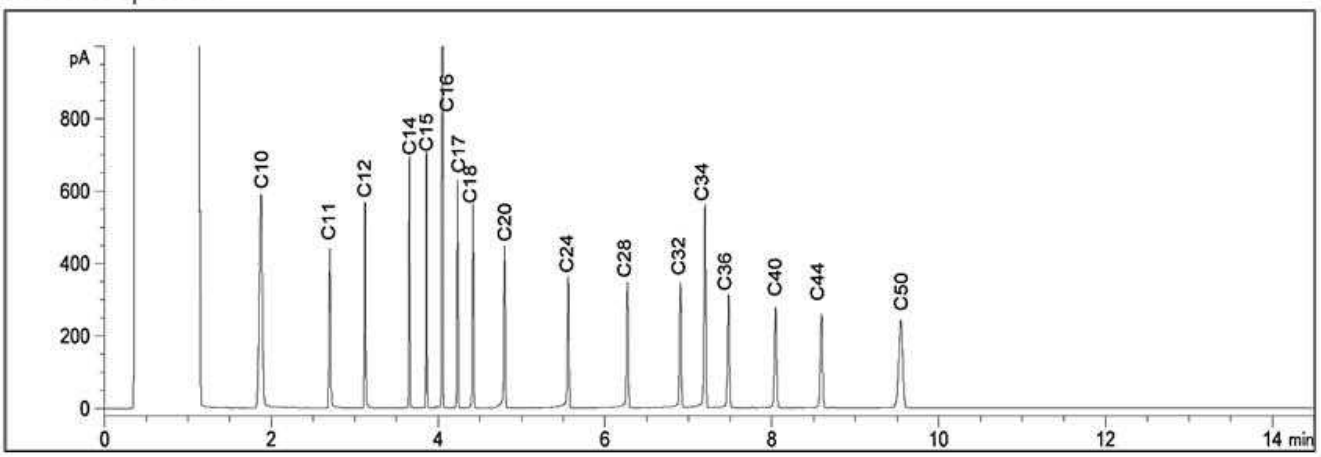
White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum

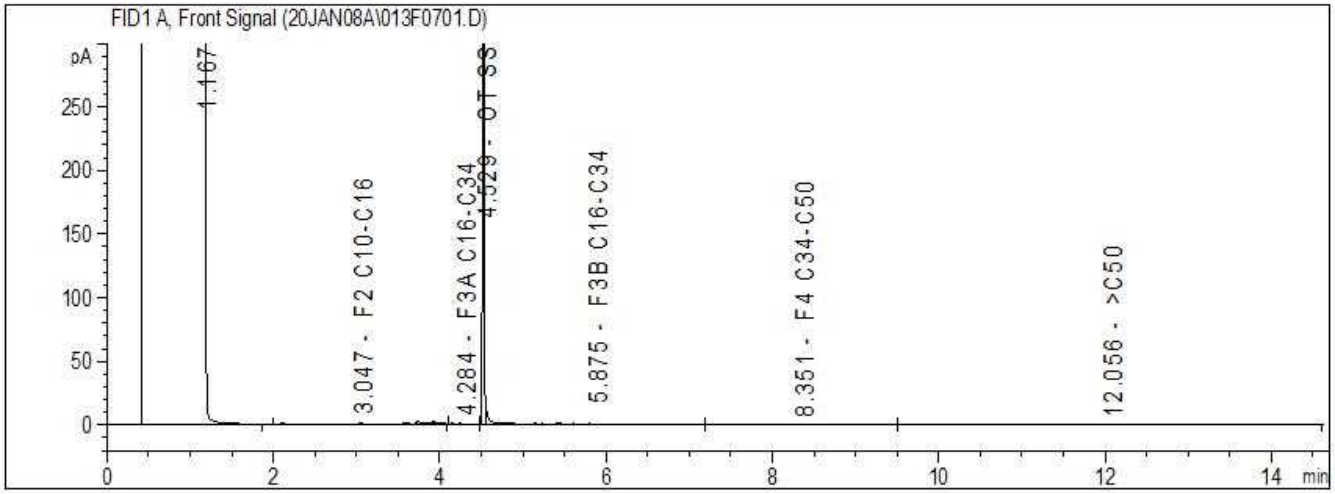


TYPICAL PRODUCT CARBON NUMBER RANGES

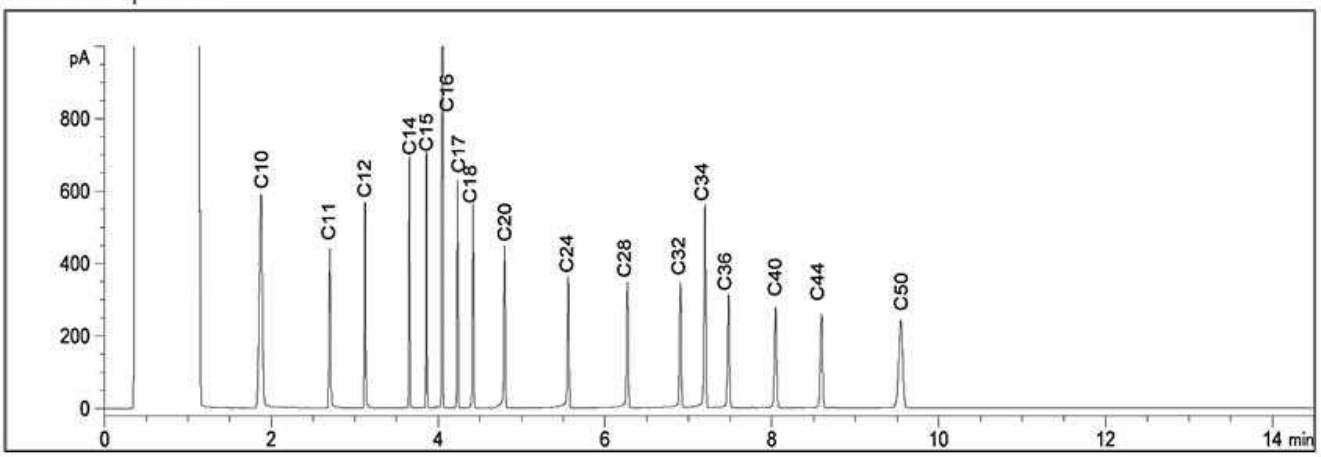
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



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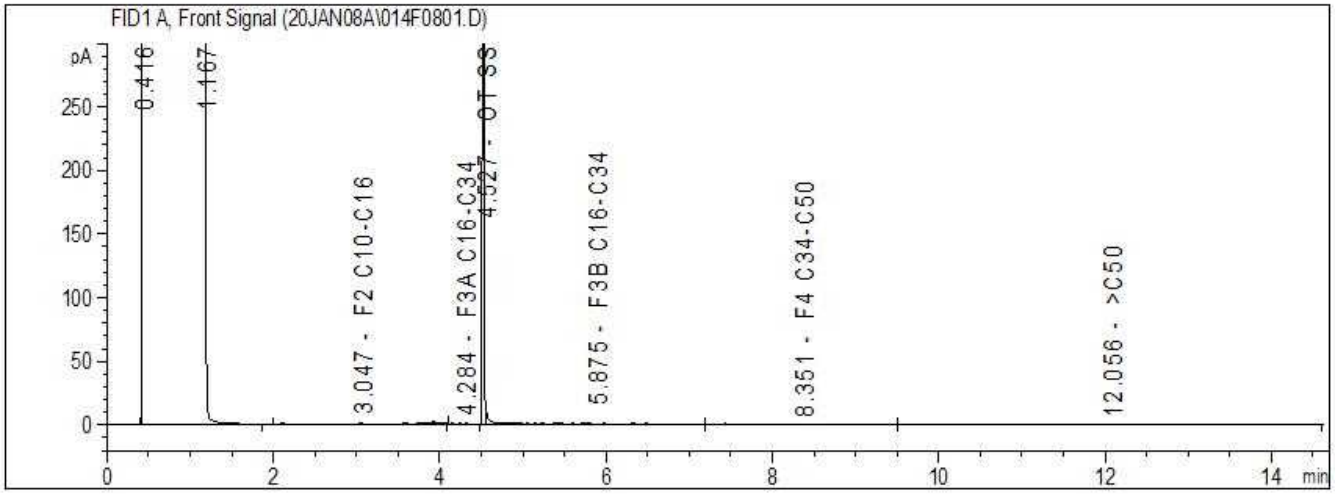
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

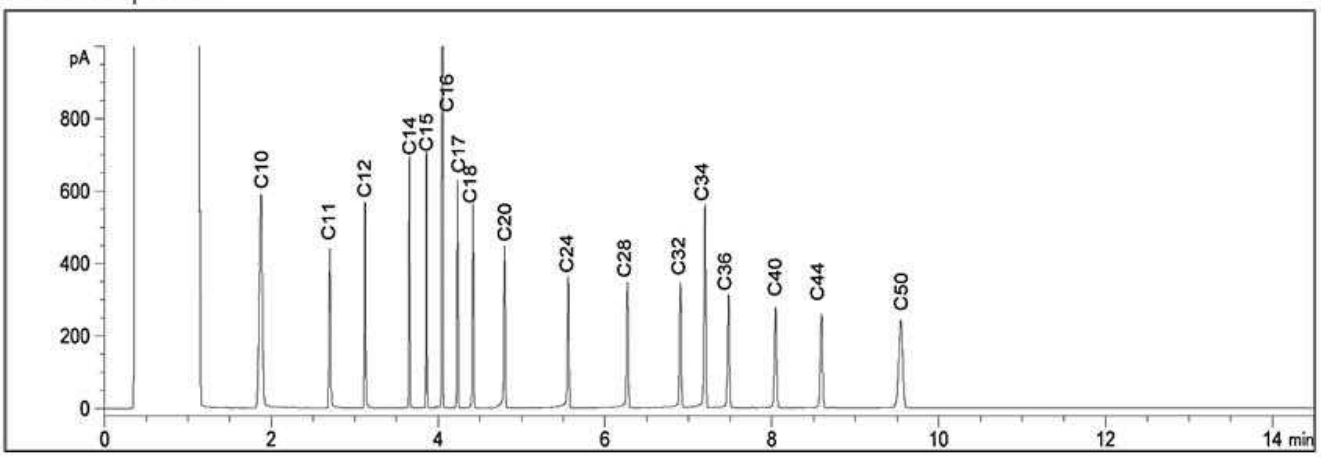
BV Labs Job #: C002002
Report Date: 2020/01/15
BV Labs Sample: LRU270 Lab-Dup

GHD Limited
Client Project #: 11205379-20
Client ID: GW-11205379-20-010320-JC-006

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

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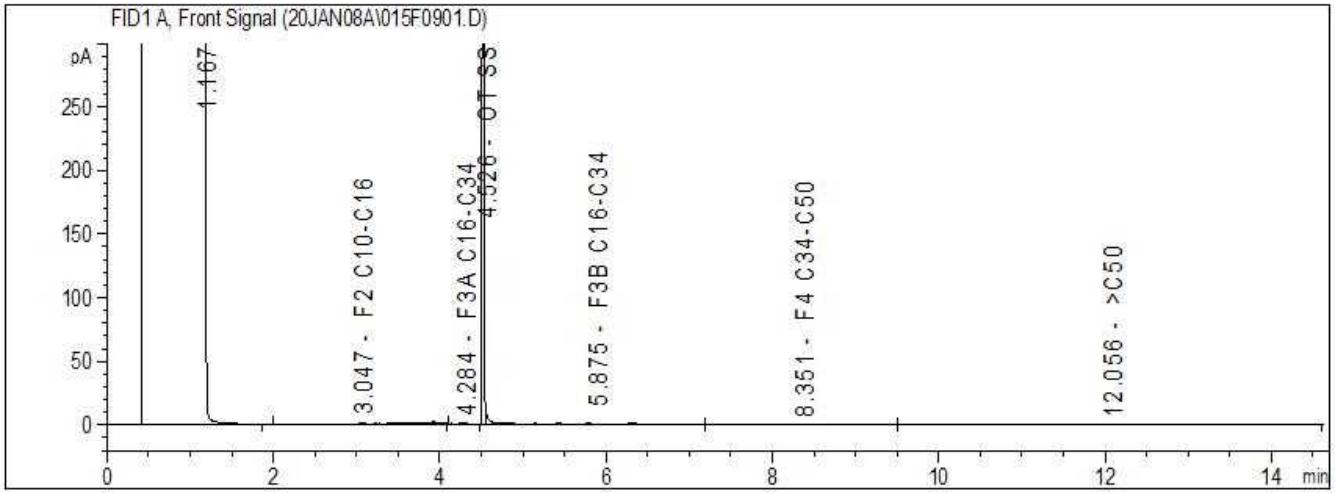
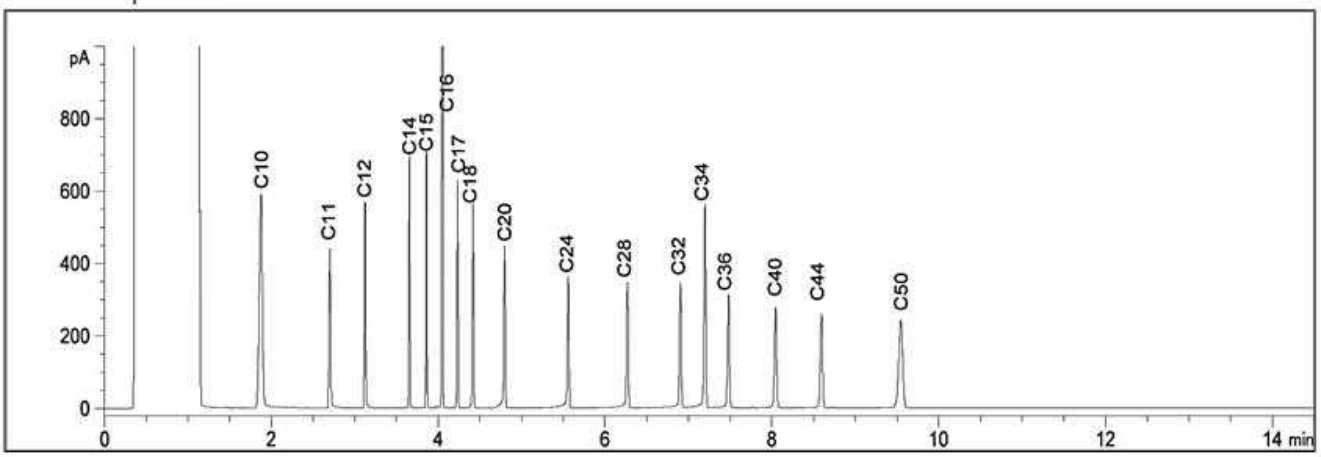
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



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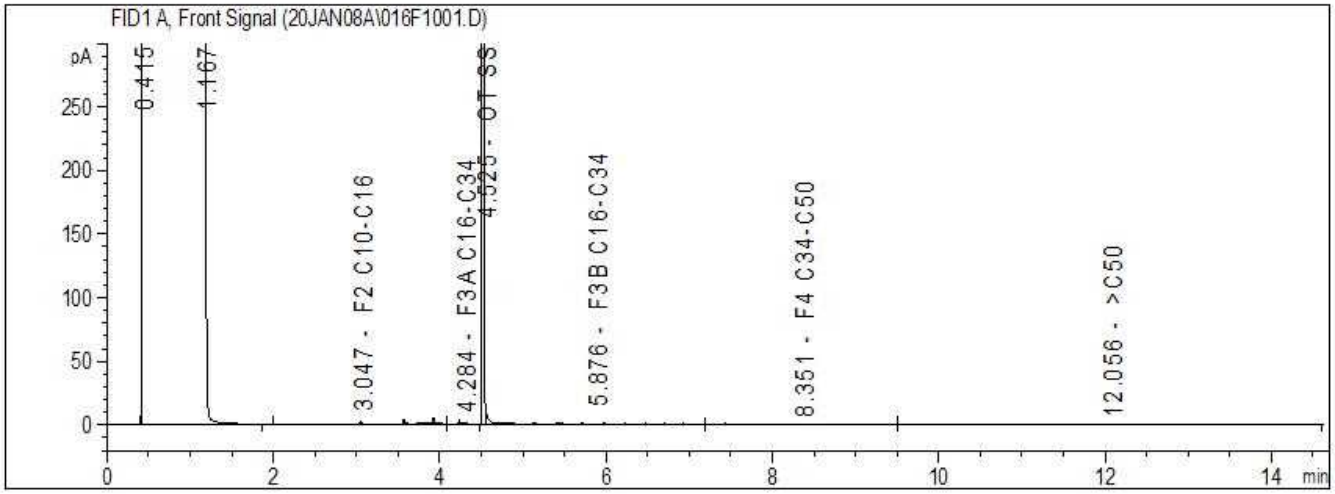
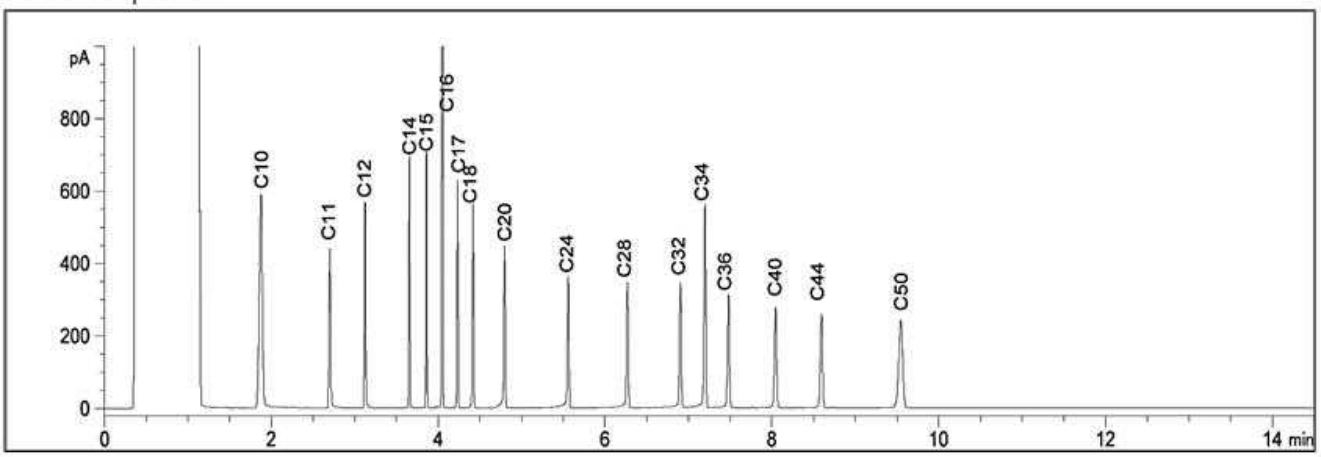
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



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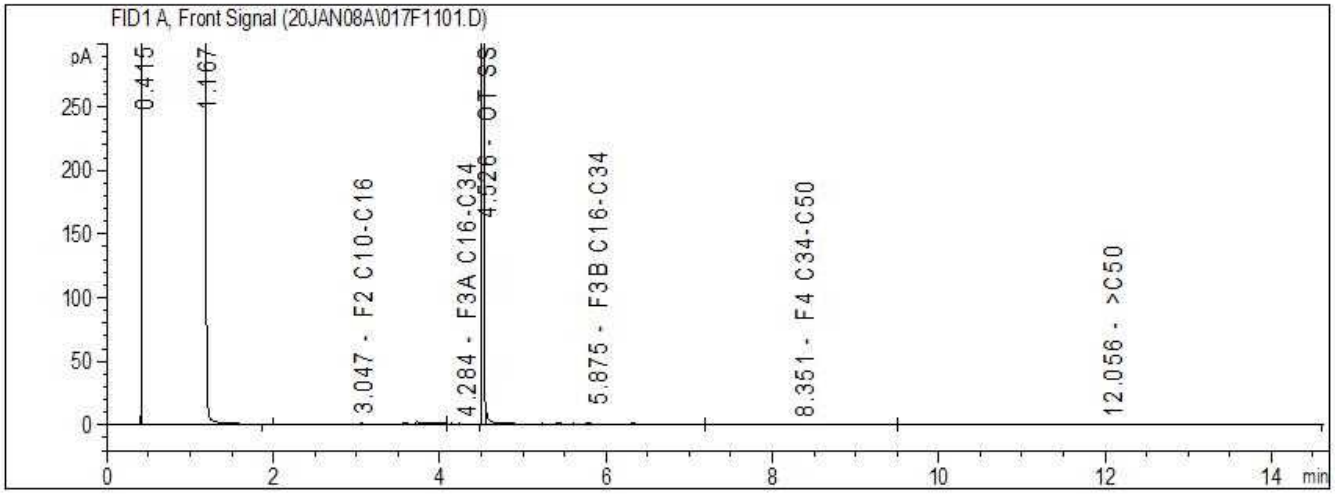
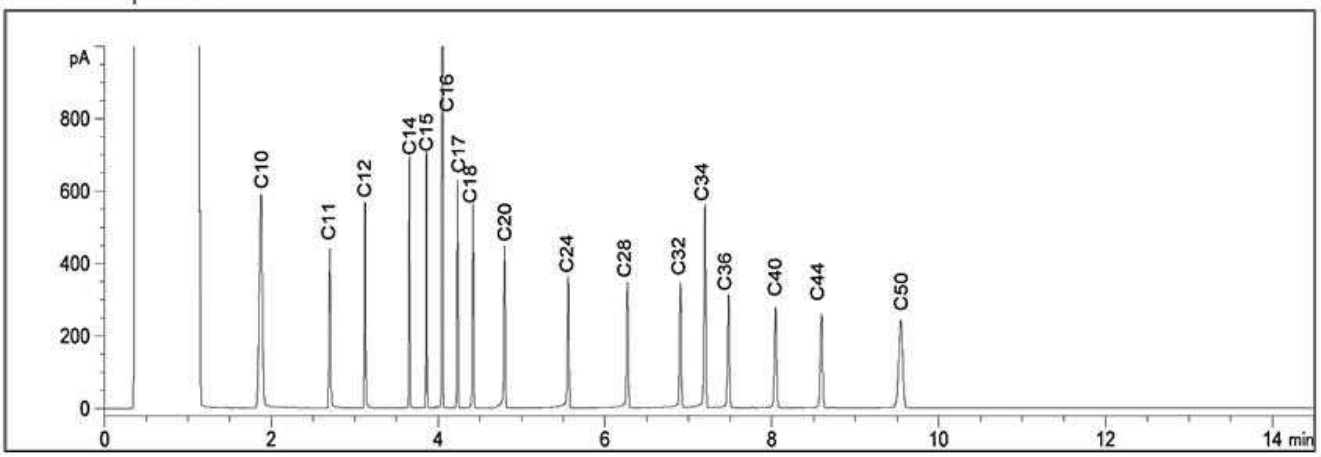
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



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Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your P.O. #: 73518145
Your Project #: 11205379-20
Your C.O.C. #: na

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/01/24
Report #: R6048866
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C015707
Received: 2020/01/20, 11:59

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Conductivity	9	N/A	2020/01/21	CAM SOP-00414	SM 23 2510 m
pH	9	2020/01/21	2020/01/21	CAM SOP-00413	SM 4500H+ B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 73518145
Your Project #: 11205379-20
Your C.O.C. #: na

Attention: 11205379-20-PO-73518145

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/01/24
Report #: R6048866
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C015707
Received: 2020/01/20, 11:59

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829
==========
This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C015707
Report Date: 2020/01/24

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

BV Labs ID		LUS425	LUS426	LUS427	LUS427		
Sampling Date		2020/01/02 10:32	2020/01/02 11:52	2020/01/02 13:30	2020/01/02 13:30		
COC Number		na	na	na	na		
	UNITS	GW-11205379-20-010220-JC-001	GW-11205379-20-010220-JC-002	GW-11205379-20-010220-JC-003	GW-11205379-20-010220-JC-003 Lab-Dup	RDL	QC Batch
Inorganics							
Conductivity	mS/cm	23.6	51.3	19.4	19.4	0.001	6548090
pH	pH	7.54	7.68	7.61	7.64		6548091

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		LUS428	LUS429	LUS430	LUS431		
Sampling Date		2020/01/02 14:07	2020/01/03 09:35	2020/01/03 12:30	2020/01/03 13:20		
COC Number		na	na	na	na		
	UNITS	GW-11205379-20-010220-JC-004	GW-11205379-20-010320-JC-005	GW-11205379-20-010320-JC-006	GW-11205379-20-010320-JC-007	RDL	QC Batch
Inorganics							
Conductivity	mS/cm	14.4	18.5	29.3	8.21	0.001	6548090
pH	pH	7.74	7.48	7.68	7.74		6548091

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		LUS432	LUS433		
Sampling Date		2020/01/03 13:20	2020/01/03 14:32		
COC Number		na	na		
	UNITS	GW-11205379-20-010320-JC-008	GW-11205379-20-010320-JC-009	RDL	QC Batch
Inorganics					
Conductivity	mS/cm	8.24	26.1	0.001	6548090
pH	pH	7.80	7.69		6548091

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C015707
Report Date: 2020/01/24

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

TEST SUMMARY

BV Labs ID: LUS425
Sample ID: GW-11205379-20-010220-JC-001
Matrix: Water
Collected: 2020/01/02
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

BV Labs ID: LUS426
Sample ID: GW-11205379-20-010220-JC-002
Matrix: Water
Collected: 2020/01/02
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

BV Labs ID: LUS427
Sample ID: GW-11205379-20-010220-JC-003
Matrix: Water
Collected: 2020/01/02
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

BV Labs ID: LUS427 Dup
Sample ID: GW-11205379-20-010220-JC-003
Matrix: Water
Collected: 2020/01/02
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

BV Labs ID: LUS428
Sample ID: GW-11205379-20-010220-JC-004
Matrix: Water
Collected: 2020/01/02
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

BV Labs ID: LUS429
Sample ID: GW-11205379-20-010320-JC-005
Matrix: Water
Collected: 2020/01/03
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C015707
Report Date: 2020/01/24

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

TEST SUMMARY

BV Labs ID: LUS430
Sample ID: GW-11205379-20-010320-JC-006
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

BV Labs ID: LUS431
Sample ID: GW-11205379-20-010320-JC-007
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

BV Labs ID: LUS432
Sample ID: GW-11205379-20-010320-JC-008
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

BV Labs ID: LUS433
Sample ID: GW-11205379-20-010320-JC-009
Matrix: Water

Collected: 2020/01/03
Shipped:
Received: 2020/01/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity	AT	6548090	N/A	2020/01/21	Surinder Rai
pH	AT	6548091	2020/01/21	2020/01/21	Surinder Rai

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C015707
Report Date: 2020/01/24

QUALITY ASSURANCE REPORT

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6548090	Conductivity	2020/01/21	101	85 - 115	ND, RDL=0.001	mS/cm	0.24 (1)	25
6548091	pH	2020/01/21	102	98 - 103			0.32 (1)	N/A

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

(1) Duplicate Parent ID [LUS427-01]

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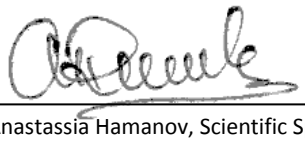
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C015707
Report Date: 2020/01/24

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 73518145-1
Your Project #: 11205379-20
Your C.O.C. #: 759999-01-01

Attention: 11205379-20-PO-73518145-1

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/03/09
Report #: R6103959
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C052740
Received: 2020/02/26, 16:13

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	7	N/A	2020/03/04	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	8	N/A	2020/03/02		EPA 8260C m
Chloride by Automated Colourimetry	7	N/A	2020/03/02	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	7	N/A	2020/02/28	CAM SOP-00414	SM 23 2510 m
Chromium (VI) in Water	7	N/A	2020/03/02	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide	7	N/A	2020/02/28	CAM SOP-00457	OMOE E3015 m
Petroleum Hydrocarbons F2-F4 in Water (1)	7	2020/03/03	2020/03/04	CAM SOP-00316	CCME PHC-CWS m
Mercury	5	2020/02/28	2020/02/28	CAM SOP-00453	EPA 7470A m
Mercury	2	2020/03/02	2020/03/02	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	6	N/A	2020/02/29	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	1	N/A	2020/03/02	CAM SOP-00447	EPA 6020B m
OC Pesticides (Selected) & PCB (2)	7	2020/03/04	2020/03/05	CAM SOP-00307	EPA 8081A/8082B m
OC Pesticides Summed Parameters	7	N/A	2020/02/28	CAM SOP-00307	EPA 8081A/8082B m
PAH Compounds in Water by GC/MS (SIM)	7	2020/03/03	2020/03/04	CAM SOP-00318	EPA 8270D m
pH	7	2020/02/28	2020/02/28	CAM SOP-00413	SM 4500H+ B m
Volatile Organic Compounds and F1 PHCs	8	N/A	2020/02/29	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope

Your P.O. #: 73518145-1
Your Project #: 11205379-20
Your C.O.C. #: 759999-01-01

Attention: 11205379-20-PO-73518145-1

GHD Limited
455 Phillip St
Waterloo, ON
CANADA N2L 3X2

Report Date: 2020/03/09
Report #: R6103959
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C052740
Received: 2020/02/26, 16:13

dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(2) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ema Gitej, Senior Project Manager
Email: Ema.Gitej@bvlabs.com
Phone# (905)817-5829

==========

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BV Labs Job #: C052740
Report Date: 2020/03/09

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

BV Labs ID		MCQ778	MCQ779	MCQ780	MCQ781		
Sampling Date		2020/02/26 09:32	2020/02/25 11:40	2020/02/25 12:48	2020/02/26 10:58		
COC Number		759999-01-01	759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-001	GW-11205379-022620-JC-002	GW-11205379-022520-JC-003	GW-11205379-022620-JC-008	RDL	QC Batch
Inorganics							
Conductivity	mS/cm	75.0	10.2	35.3	20.0	0.001	6611442
pH	pH	7.56	8.00	7.54	7.67		6611446

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		MCQ782	MCQ783	MCQ784		
Sampling Date		2020/02/26 12:26	2020/02/26 13:15	2020/02/26 13:15		
COC Number		759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-009	GW-11205379-022620-JC-010	GW-11205379-022620-JC-011	RDL	QC Batch
Inorganics						
Conductivity	mS/cm	19.4	22.9	23.2	0.001	6611442
pH	pH	7.51	7.61	7.62		6611446

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID		MCQ785		
Sampling Date		2019/11/07		
COC Number		759999-01-01		
	UNITS	TRIP-001	RDL	QC Batch
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/L	ND	0.50	6608994
Volatile Organics				
Acetone (2-Propanone)	ug/L	ND	10	6607529
Benzene	ug/L	ND	0.20	6607529
Bromodichloromethane	ug/L	ND	0.50	6607529
Bromoform	ug/L	ND	1.0	6607529
Bromomethane	ug/L	ND	0.50	6607529
Carbon Tetrachloride	ug/L	ND	0.20	6607529
Chlorobenzene	ug/L	ND	0.20	6607529
Chloroform	ug/L	ND	0.20	6607529
Dibromochloromethane	ug/L	ND	0.50	6607529
1,2-Dichlorobenzene	ug/L	ND	0.50	6607529
1,3-Dichlorobenzene	ug/L	ND	0.50	6607529
1,4-Dichlorobenzene	ug/L	ND	0.50	6607529
Dichlorodifluoromethane (FREON 12)	ug/L	ND	1.0	6607529
1,1-Dichloroethane	ug/L	ND	0.20	6607529
1,2-Dichloroethane	ug/L	ND	0.50	6607529
1,1-Dichloroethylene	ug/L	ND	0.20	6607529
cis-1,2-Dichloroethylene	ug/L	ND	0.50	6607529
trans-1,2-Dichloroethylene	ug/L	ND	0.50	6607529
1,2-Dichloropropane	ug/L	ND	0.20	6607529
cis-1,3-Dichloropropene	ug/L	ND	0.30	6607529
trans-1,3-Dichloropropene	ug/L	ND	0.40	6607529
Ethylbenzene	ug/L	ND	0.20	6607529
Ethylene Dibromide	ug/L	ND	0.20	6607529
Hexane	ug/L	ND	1.0	6607529
Methylene Chloride(Dichloromethane)	ug/L	ND	2.0	6607529
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	10	6607529
Methyl Isobutyl Ketone	ug/L	ND	5.0	6607529
Methyl t-butyl ether (MTBE)	ug/L	ND	0.50	6607529
Styrene	ug/L	ND	0.50	6607529
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	6607529
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	6607529
Tetrachloroethylene	ug/L	ND	0.20	6607529

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID		MCQ785		
Sampling Date		2019/11/07		
COC Number		759999-01-01		
	UNITS	TRIP-001	RDL	QC Batch
Toluene	ug/L	ND	0.20	6607529
1,1,1-Trichloroethane	ug/L	ND	0.20	6607529
1,1,2-Trichloroethane	ug/L	ND	0.50	6607529
Trichloroethylene	ug/L	ND	0.20	6607529
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.50	6607529
Vinyl Chloride	ug/L	ND	0.20	6607529
p+m-Xylene	ug/L	ND	0.20	6607529
o-Xylene	ug/L	ND	0.20	6607529
Total Xylenes	ug/L	ND	0.20	6607529
F1 (C6-C10)	ug/L	ND	25	6607529
F1 (C6-C10) - BTEX	ug/L	ND	25	6607529
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	86		6607529
D4-1,2-Dichloroethane	%	105		6607529
D8-Toluene	%	96		6607529

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		MCQ778			MCQ778		
Sampling Date		2020/02/26 09:32			2020/02/26 09:32		
COC Number		759999-01-01			759999-01-01		
	UNITS	GW-11205379-022620-JC-001	RDL	QC Batch	GW-11205379-022620-JC-001 Lab-Dup	RDL	QC Batch
Inorganics							
WAD Cyanide (Free)	ug/L	6	1	6611563			
Dissolved Chloride (Cl-)	mg/L	29000	300	6611535			
Metals							
Chromium (VI)	ug/L	ND	2.5	6609975			
Mercury (Hg)	ug/L	ND	0.1	6611399	ND	0.1	6611399
Dissolved Antimony (Sb)	ug/L	ND	5.0	6611197			
Dissolved Arsenic (As)	ug/L	ND	10	6611197			
Dissolved Barium (Ba)	ug/L	240	20	6611197			
Dissolved Beryllium (Be)	ug/L	ND	5.0	6611197			
Dissolved Boron (B)	ug/L	120	100	6611197			
Dissolved Cadmium (Cd)	ug/L	1.2	1.0	6611197			
Dissolved Chromium (Cr)	ug/L	ND	50	6611197			
Dissolved Cobalt (Co)	ug/L	12	5.0	6611197			
Dissolved Copper (Cu)	ug/L	ND	10	6611197			
Dissolved Lead (Pb)	ug/L	ND	5.0	6611197			
Dissolved Molybdenum (Mo)	ug/L	16	5.0	6611197			
Dissolved Nickel (Ni)	ug/L	31	10	6611197			
Dissolved Selenium (Se)	ug/L	ND	20	6611197			
Dissolved Silver (Ag)	ug/L	ND	1.0	6611197			
Dissolved Sodium (Na)	ug/L	18000000	5000	6611197			
Dissolved Thallium (Tl)	ug/L	ND	0.50	6611197			
Dissolved Uranium (U)	ug/L	22	1.0	6611197			
Dissolved Vanadium (V)	ug/L	ND	5.0	6611197			
Dissolved Zinc (Zn)	ug/L	ND	50	6611197			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C052740
Report Date: 2020/03/09

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		MCQ779			MCQ779		
Sampling Date		2020/02/25 11:40			2020/02/25 11:40		
COC Number		759999-01-01			759999-01-01		
	UNITS	GW-11205379-022620 -JC-002	RDL	QC Batch	GW-11205379-022620 -JC-002 Lab-Dup	RDL	QC Batch
Inorganics							
WAD Cyanide (Free)	ug/L	1	1	6611563			
Dissolved Chloride (Cl-)	mg/L	3000	40	6611535			
Metals							
Chromium (VI)	ug/L	ND	0.50	6609975	ND	0.50	6609975
Mercury (Hg)	ug/L	ND	0.1	6611399			
Dissolved Antimony (Sb)	ug/L	ND	0.50	6611211			
Dissolved Arsenic (As)	ug/L	ND	1.0	6611211			
Dissolved Barium (Ba)	ug/L	670	2.0	6611211			
Dissolved Beryllium (Be)	ug/L	ND	0.50	6611211			
Dissolved Boron (B)	ug/L	410	10	6611211			
Dissolved Cadmium (Cd)	ug/L	ND	0.10	6611211			
Dissolved Chromium (Cr)	ug/L	ND	5.0	6611211			
Dissolved Cobalt (Co)	ug/L	ND	0.50	6611211			
Dissolved Copper (Cu)	ug/L	ND	1.0	6611211			
Dissolved Lead (Pb)	ug/L	ND	0.50	6611211			
Dissolved Molybdenum (Mo)	ug/L	ND	0.50	6611211			
Dissolved Nickel (Ni)	ug/L	ND	1.0	6611211			
Dissolved Selenium (Se)	ug/L	3.5	2.0	6611211			
Dissolved Silver (Ag)	ug/L	ND	0.10	6611211			
Dissolved Sodium (Na)	ug/L	1700000	500	6611211			
Dissolved Thallium (Tl)	ug/L	ND	0.050	6611211			
Dissolved Uranium (U)	ug/L	ND	0.10	6611211			
Dissolved Vanadium (V)	ug/L	ND	0.50	6611211			
Dissolved Zinc (Zn)	ug/L	ND	5.0	6611211			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C052740
Report Date: 2020/03/09

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		MCQ780			MCQ781		
Sampling Date		2020/02/25 12:48			2020/02/26 10:58		
COC Number		759999-01-01			759999-01-01		
	UNITS	GW-11205379-022520 -JC-003	RDL	QC Batch	GW-11205379-022620 -JC-008	RDL	QC Batch
Inorganics							
WAD Cyanide (Free)	ug/L	1	1	6611563	ND	1	6609304
Dissolved Chloride (Cl-)	mg/L	12000	100	6611535	5700	60	6611535
Metals							
Chromium (VI)	ug/L	ND	2.5	6609975	ND	2.5	6609975
Mercury (Hg)	ug/L	ND	0.1	6611399	ND	0.1	6611399
Dissolved Antimony (Sb)	ug/L	ND	5.0	6611211	ND	2.5	6611211
Dissolved Arsenic (As)	ug/L	ND	10	6611211	ND	5.0	6611211
Dissolved Barium (Ba)	ug/L	130	20	6611211	69	10	6611211
Dissolved Beryllium (Be)	ug/L	ND	5.0	6611211	ND	2.5	6611211
Dissolved Boron (B)	ug/L	170	100	6611211	430	50	6611211
Dissolved Cadmium (Cd)	ug/L	ND	1.0	6611211	ND	0.50	6611211
Dissolved Chromium (Cr)	ug/L	ND	50	6611211	ND	25	6611211
Dissolved Cobalt (Co)	ug/L	ND	5.0	6611211	4.5	2.5	6611211
Dissolved Copper (Cu)	ug/L	ND	10	6611211	ND	5.0	6611211
Dissolved Lead (Pb)	ug/L	ND	5.0	6611211	ND	2.5	6611211
Dissolved Molybdenum (Mo)	ug/L	7.5	5.0	6611211	14	2.5	6611211
Dissolved Nickel (Ni)	ug/L	ND	10	6611211	13	5.0	6611211
Dissolved Selenium (Se)	ug/L	ND	20	6611211	ND	10	6611211
Dissolved Silver (Ag)	ug/L	ND	1.0	6611211	ND	0.50	6611211
Dissolved Sodium (Na)	ug/L	7700000	5000	6611211	3700000	1000	6611211
Dissolved Thallium (Tl)	ug/L	ND	0.50	6611211	ND	0.25	6611211
Dissolved Uranium (U)	ug/L	3.9	1.0	6611211	24	0.50	6611211
Dissolved Vanadium (V)	ug/L	ND	5.0	6611211	ND	2.5	6611211
Dissolved Zinc (Zn)	ug/L	ND	50	6611211	ND	25	6611211

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		MCQ782		MCQ783			MCQ783		
Sampling Date		2020/02/26 12:26		2020/02/26 13:15			2020/02/26 13:15		
COC Number		759999-01-01		759999-01-01			759999-01-01		
	UNITS	GW-11205379-022620 -JC-009	RDL	GW-11205379-022620 -JC-010	RDL	QC Batch	GW-11205379-022620 -JC-010 Lab-Dup	RDL	QC Batch
Inorganics									
WAD Cyanide (Free)	ug/L	ND	1	ND	1	6609304			
Dissolved Chloride (Cl-)	mg/L	6200	70	6800	80	6611535			
Metals									
Chromium (VI)	ug/L	ND	2.5	ND	0.50	6609975			
Mercury (Hg)	ug/L	ND	0.1	ND	0.1	6613951			
Dissolved Antimony (Sb)	ug/L	ND	2.5	ND	2.5	6611211	ND	2.5	6611211
Dissolved Arsenic (As)	ug/L	ND	5.0	ND	5.0	6611211	ND	5.0	6611211
Dissolved Barium (Ba)	ug/L	110	10	430	10	6611211	420	10	6611211
Dissolved Beryllium (Be)	ug/L	ND	2.5	ND	2.5	6611211	ND	2.5	6611211
Dissolved Boron (B)	ug/L	590	50	450	50	6611211	430	50	6611211
Dissolved Cadmium (Cd)	ug/L	ND	0.50	ND	0.50	6611211	ND	0.50	6611211
Dissolved Chromium (Cr)	ug/L	ND	25	ND	25	6611211	ND	25	6611211
Dissolved Cobalt (Co)	ug/L	13	2.5	ND	2.5	6611211	ND	2.5	6611211
Dissolved Copper (Cu)	ug/L	ND	5.0	ND	5.0	6611211	ND	5.0	6611211
Dissolved Lead (Pb)	ug/L	ND	2.5	ND	2.5	6611211	ND	2.5	6611211
Dissolved Molybdenum (Mo)	ug/L	19	2.5	ND	2.5	6611211	ND	2.5	6611211
Dissolved Nickel (Ni)	ug/L	29	5.0	ND	5.0	6611211	ND	5.0	6611211
Dissolved Selenium (Se)	ug/L	ND	10	ND	10	6611211	ND	10	6611211
Dissolved Silver (Ag)	ug/L	ND	0.50	ND	0.50	6611211	ND	0.50	6611211
Dissolved Sodium (Na)	ug/L	2800000	500	3500000	1000	6611211	3500000	1000	6611211
Dissolved Thallium (Tl)	ug/L	ND	0.25	ND	0.25	6611211	ND	0.25	6611211
Dissolved Uranium (U)	ug/L	9.7	0.50	2.8	0.50	6611211	3.1	0.50	6611211
Dissolved Vanadium (V)	ug/L	ND	2.5	ND	2.5	6611211	ND	2.5	6611211
Dissolved Zinc (Zn)	ug/L	ND	25	ND	25	6611211	ND	25	6611211

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 METALS & INORGANICS PKG (WTR)

BV Labs ID		MCQ784		
Sampling Date		2020/02/26 13:15		
COC Number		759999-01-01		
	UNITS	GW-11205379-022620 -JC-011	RDL	QC Batch
Inorganics				
WAD Cyanide (Free)	ug/L	ND	1	6609304
Dissolved Chloride (Cl-)	mg/L	7100	80	6611535
Metals				
Chromium (VI)	ug/L	ND	0.50	6609975
Mercury (Hg)	ug/L	ND	0.1	6611399
Dissolved Antimony (Sb)	ug/L	ND	2.5	6611211
Dissolved Arsenic (As)	ug/L	ND	5.0	6611211
Dissolved Barium (Ba)	ug/L	430	10	6611211
Dissolved Beryllium (Be)	ug/L	ND	2.5	6611211
Dissolved Boron (B)	ug/L	460	50	6611211
Dissolved Cadmium (Cd)	ug/L	ND	0.50	6611211
Dissolved Chromium (Cr)	ug/L	ND	25	6611211
Dissolved Cobalt (Co)	ug/L	ND	2.5	6611211
Dissolved Copper (Cu)	ug/L	ND	5.0	6611211
Dissolved Lead (Pb)	ug/L	ND	2.5	6611211
Dissolved Molybdenum (Mo)	ug/L	ND	2.5	6611211
Dissolved Nickel (Ni)	ug/L	ND	5.0	6611211
Dissolved Selenium (Se)	ug/L	ND	10	6611211
Dissolved Silver (Ag)	ug/L	ND	0.50	6611211
Dissolved Sodium (Na)	ug/L	3500000	1000	6611211
Dissolved Thallium (Tl)	ug/L	ND	0.25	6611211
Dissolved Uranium (U)	ug/L	3.0	0.50	6611211
Dissolved Vanadium (V)	ug/L	ND	2.5	6611211
Dissolved Zinc (Zn)	ug/L	ND	25	6611211

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

BV Labs Job #: C052740
Report Date: 2020/03/09

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		MCQ778	MCQ779	MCQ780	MCQ781		
Sampling Date		2020/02/26 09:32	2020/02/25 11:40	2020/02/25 12:48	2020/02/26 10:58		
COC Number		759999-01-01	759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-001	GW-11205379-022620-JC-002	GW-11205379-022520-JC-003	GW-11205379-022620-JC-008	RDL	QC Batch
Calculated Parameters							
Chlordane (Total)	ug/L	ND	ND	ND	ND	0.005	6608942
o,p-DDD + p,p-DDD	ug/L	ND	ND	ND	ND	0.005	6608942
o,p-DDE + p,p-DDE	ug/L	ND	ND	ND	ND	0.005	6608942
o,p-DDT + p,p-DDT	ug/L	ND	ND	ND	ND	0.005	6608942
Total Endosulfan	ug/L	ND	ND	ND	ND	0.005	6608942
Total PCB	ug/L	ND	ND	ND	ND	0.05	6608942
Pesticides & Herbicides							
Aldrin	ug/L	ND	ND	ND	ND	0.005	6618158
Dieldrin	ug/L	ND	ND	ND	ND	0.005	6618158
a-Chlordane	ug/L	ND	ND	ND	ND	0.005	6618158
g-Chlordane	ug/L	ND	ND	ND	ND	0.005	6618158
o,p-DDD	ug/L	ND	ND	ND	ND	0.005	6618158
p,p-DDD	ug/L	ND	ND	ND	ND	0.005	6618158
o,p-DDE	ug/L	ND	ND	ND	ND	0.005	6618158
p,p-DDE	ug/L	ND	ND	ND	ND	0.005	6618158
o,p-DDT	ug/L	ND	ND	ND	ND	0.005	6618158
p,p-DDT	ug/L	ND	ND	ND	ND	0.005	6618158
Lindane	ug/L	ND	ND	ND	ND	0.003	6618158
Endosulfan I (alpha)	ug/L	ND	ND	ND	ND	0.005	6618158
Endosulfan II (beta)	ug/L	ND	ND	ND	ND	0.005	6618158
Endrin	ug/L	ND	ND	ND	ND	0.005	6618158
Heptachlor	ug/L	ND	ND	ND	ND	0.005	6618158
Heptachlor epoxide	ug/L	ND	ND	ND	ND	0.005	6618158
Hexachlorobenzene	ug/L	ND	ND	ND	ND	0.005	6618158
Hexachlorobutadiene	ug/L	ND	ND	ND	ND	0.009	6618158
Hexachloroethane	ug/L	ND	ND	ND	ND	0.01	6618158
Methoxychlor	ug/L	ND	ND	ND	ND	0.01	6618158
Aroclor 1242	ug/L	ND	ND	ND	ND	0.05	6618158
Aroclor 1248	ug/L	ND	ND	ND	ND	0.05	6618158
Aroclor 1254	ug/L	ND	ND	ND	ND	0.05	6618158
Aroclor 1260	ug/L	ND	ND	ND	ND	0.05	6618158
Surrogate Recovery (%)							
2,4,5,6-Tetrachloro-m-xylene	%	65	63	90	60		6618158

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C052740
Report Date: 2020/03/09

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		MCQ778	MCQ779	MCQ780	MCQ781		
Sampling Date		2020/02/26 09:32	2020/02/25 11:40	2020/02/25 12:48	2020/02/26 10:58		
COC Number		759999-01-01	759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-001	GW-11205379-022620-JC-002	GW-11205379-022520-JC-003	GW-11205379-022620-JC-008	RDL	QC Batch
Decachlorobiphenyl	%	88	106	103	76		6618158

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		MCQ782	MCQ783	MCQ784		
Sampling Date		2020/02/26 12:26	2020/02/26 13:15	2020/02/26 13:15		
COC Number		759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-009	GW-11205379-022620-JC-010	GW-11205379-022620-JC-011	RDL	QC Batch
Calculated Parameters						
Chlordane (Total)	ug/L	ND	ND	ND	0.005	6608942
o,p-DDD + p,p-DDD	ug/L	ND	ND	ND	0.005	6608942
o,p-DDE + p,p-DDE	ug/L	ND	ND	ND	0.005	6608942
o,p-DDT + p,p-DDT	ug/L	ND	ND	ND	0.005	6608942
Total Endosulfan	ug/L	ND	ND	ND	0.005	6608942
Total PCB	ug/L	ND	ND	ND	0.05	6608942
Pesticides & Herbicides						
Aldrin	ug/L	ND	ND	ND	0.005	6618158
Dieldrin	ug/L	ND	ND	ND	0.005	6618158
a-Chlordane	ug/L	ND	ND	ND	0.005	6618158
g-Chlordane	ug/L	ND	ND	ND	0.005	6618158
o,p-DDD	ug/L	ND	ND	ND	0.005	6618158
p,p-DDD	ug/L	ND	ND	ND	0.005	6618158
o,p-DDE	ug/L	ND	ND	ND	0.005	6618158
p,p-DDE	ug/L	ND	ND	ND	0.005	6618158
o,p-DDT	ug/L	ND	ND	ND	0.005	6618158
p,p-DDT	ug/L	ND	ND	ND	0.005	6618158
Lindane	ug/L	ND	ND	ND	0.003	6618158
Endosulfan I (alpha)	ug/L	ND	ND	ND	0.005	6618158
Endosulfan II (beta)	ug/L	ND	ND	ND	0.005	6618158
Endrin	ug/L	ND	ND	ND	0.005	6618158
Heptachlor	ug/L	ND	ND	ND	0.005	6618158
Heptachlor epoxide	ug/L	ND	ND	ND	0.005	6618158
Hexachlorobenzene	ug/L	ND	ND	ND	0.005	6618158
Hexachlorobutadiene	ug/L	ND	ND	ND	0.009	6618158
Hexachloroethane	ug/L	ND	ND	ND	0.01	6618158
Methoxychlor	ug/L	ND	ND	ND	0.01	6618158
Aroclor 1242	ug/L	ND	ND	ND	0.05	6618158
Aroclor 1248	ug/L	ND	ND	ND	0.05	6618158
Aroclor 1254	ug/L	ND	ND	ND	0.05	6618158
Aroclor 1260	ug/L	ND	ND	ND	0.05	6618158
Surrogate Recovery (%)						
2,4,5,6-Tetrachloro-m-xylene	%	93	82	71		6618158

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 OC PESTICIDES (WATER)

BV Labs ID		MCQ782	MCQ783	MCQ784		
Sampling Date		2020/02/26 12:26	2020/02/26 13:15	2020/02/26 13:15		
COC Number		759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-009	GW-11205379-022620-JC-010	GW-11205379-022620-JC-011	RDL	QC Batch
Decachlorobiphenyl	%	88	100	90		6618158

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 PAHS (WATER)

BV Labs ID		MCQ778			MCQ778		
Sampling Date		2020/02/26 09:32			2020/02/26 09:32		
COC Number		759999-01-01			759999-01-01		
	UNITS	GW-11205379-022620-JC-001	RDL	QC Batch	GW-11205379-022620-JC-001 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	ND	0.071	6608905			
Polyaromatic Hydrocarbons							
Acenaphthene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Acenaphthylene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Anthracene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Benzo(a)anthracene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Benzo(a)pyrene	ug/L	ND	0.010	6616814	ND	0.010	6616814
Benzo(b/j)fluoranthene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Benzo(g,h,i)perylene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Benzo(k)fluoranthene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Chrysene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Dibenzo(a,h)anthracene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Fluoranthene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Fluorene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.050	6616814	ND	0.050	6616814
1-Methylnaphthalene	ug/L	ND	0.050	6616814	ND	0.050	6616814
2-Methylnaphthalene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Naphthalene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Phenanthrene	ug/L	ND	0.030	6616814	ND	0.030	6616814
Pyrene	ug/L	ND	0.050	6616814	ND	0.050	6616814
Surrogate Recovery (%)							
D10-Anthracene	%	104		6616814	104		6616814
D14-Terphenyl (FS)	%	103		6616814	99		6616814
D8-Acenaphthylene	%	93		6616814	93		6616814

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 PAHS (WATER)

BV Labs ID		MCQ779	MCQ780	MCQ781	MCQ782		
Sampling Date		2020/02/25 11:40	2020/02/25 12:48	2020/02/26 10:58	2020/02/26 12:26		
COC Number		759999-01-01	759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-002	GW-11205379-022520-JC-003	GW-11205379-022620-JC-008	GW-11205379-022620-JC-009	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	ND	ND	ND	ND	0.071	6608905
Polyaromatic Hydrocarbons							
Acenaphthene	ug/L	ND	ND	ND	ND	0.050	6616814
Acenaphthylene	ug/L	ND	ND	ND	ND	0.050	6616814
Anthracene	ug/L	ND	ND	ND	ND	0.050	6616814
Benzo(a)anthracene	ug/L	ND	ND	ND	ND	0.050	6616814
Benzo(a)pyrene	ug/L	ND	ND	ND	ND	0.010	6616814
Benzo(b/j)fluoranthene	ug/L	ND	ND	ND	ND	0.050	6616814
Benzo(g,h,i)perylene	ug/L	ND	ND	ND	ND	0.050	6616814
Benzo(k)fluoranthene	ug/L	ND	ND	ND	ND	0.050	6616814
Chrysene	ug/L	ND	ND	ND	ND	0.050	6616814
Dibenzo(a,h)anthracene	ug/L	ND	ND	ND	ND	0.050	6616814
Fluoranthene	ug/L	ND	ND	ND	ND	0.050	6616814
Fluorene	ug/L	ND	ND	ND	ND	0.050	6616814
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	ND	ND	0.050	6616814
1-Methylnaphthalene	ug/L	ND	ND	ND	ND	0.050	6616814
2-Methylnaphthalene	ug/L	ND	ND	ND	ND	0.050	6616814
Naphthalene	ug/L	ND	ND	ND	ND	0.050	6616814
Phenanthrene	ug/L	ND	ND	ND	ND	0.030	6616814
Pyrene	ug/L	ND	ND	ND	ND	0.050	6616814
Surrogate Recovery (%)							
D10-Anthracene	%	108	90	105	107		6616814
D14-Terphenyl (FS)	%	104	86	104	102		6616814
D8-Acenaphthylene	%	95	81	95	96		6616814

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 PAHS (WATER)

BV Labs ID		MCQ783	MCQ784		
Sampling Date		2020/02/26 13:15	2020/02/26 13:15		
COC Number		759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-010	GW-11205379-022620-JC-011	RDL	QC Batch
Calculated Parameters					
Methylnaphthalene, 2-(1-)	ug/L	ND	ND	0.071	6608905
Polyaromatic Hydrocarbons					
Acenaphthene	ug/L	ND	ND	0.050	6616814
Acenaphthylene	ug/L	ND	ND	0.050	6616814
Anthracene	ug/L	ND	ND	0.050	6616814
Benzo(a)anthracene	ug/L	ND	ND	0.050	6616814
Benzo(a)pyrene	ug/L	ND	ND	0.010	6616814
Benzo(b/j)fluoranthene	ug/L	ND	ND	0.050	6616814
Benzo(g,h,i)perylene	ug/L	ND	ND	0.050	6616814
Benzo(k)fluoranthene	ug/L	ND	ND	0.050	6616814
Chrysene	ug/L	ND	ND	0.050	6616814
Dibenzo(a,h)anthracene	ug/L	ND	ND	0.050	6616814
Fluoranthene	ug/L	ND	ND	0.050	6616814
Fluorene	ug/L	ND	ND	0.050	6616814
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	0.050	6616814
1-Methylnaphthalene	ug/L	ND	ND	0.050	6616814
2-Methylnaphthalene	ug/L	ND	ND	0.050	6616814
Naphthalene	ug/L	ND	ND	0.050	6616814
Phenanthrene	ug/L	ND	ND	0.030	6616814
Pyrene	ug/L	ND	ND	0.050	6616814
Surrogate Recovery (%)					
D10-Anthracene	%	100	105		6616814
D14-Terphenyl (FS)	%	97	101		6616814
D8-Acenaphthylene	%	93	97		6616814

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		MCQ778			MCQ778		
Sampling Date		2020/02/26 09:32			2020/02/26 09:32		
COC Number		759999-01-01			759999-01-01		
	UNITS	GW-11205379-022620-JC-001	RDL	QC Batch	GW-11205379-022620-JC-001 Lab-Dup	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	ND	0.50	6608994			
Volatile Organics							
Acetone (2-Propanone)	ug/L	ND	10	6607529			
Benzene	ug/L	ND	0.20	6607529			
Bromodichloromethane	ug/L	ND	0.50	6607529			
Bromoform	ug/L	ND	1.0	6607529			
Bromomethane	ug/L	ND	0.50	6607529			
Carbon Tetrachloride	ug/L	ND	0.20	6607529			
Chlorobenzene	ug/L	ND	0.20	6607529			
Chloroform	ug/L	ND	0.20	6607529			
Dibromochloromethane	ug/L	ND	0.50	6607529			
1,2-Dichlorobenzene	ug/L	ND	0.50	6607529			
1,3-Dichlorobenzene	ug/L	ND	0.50	6607529			
1,4-Dichlorobenzene	ug/L	ND	0.50	6607529			
Dichlorodifluoromethane (FREON 12)	ug/L	ND	1.0	6607529			
1,1-Dichloroethane	ug/L	ND	0.20	6607529			
1,2-Dichloroethane	ug/L	ND	0.50	6607529			
1,1-Dichloroethylene	ug/L	ND	0.20	6607529			
cis-1,2-Dichloroethylene	ug/L	ND	0.50	6607529			
trans-1,2-Dichloroethylene	ug/L	ND	0.50	6607529			
1,2-Dichloropropane	ug/L	ND	0.20	6607529			
cis-1,3-Dichloropropene	ug/L	ND	0.30	6607529			
trans-1,3-Dichloropropene	ug/L	ND	0.40	6607529			
Ethylbenzene	ug/L	ND	0.20	6607529			
Ethylene Dibromide	ug/L	ND	0.20	6607529			
Hexane	ug/L	ND	1.0	6607529			
Methylene Chloride(Dichloromethane)	ug/L	ND	2.0	6607529			
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	10	6607529			
Methyl Isobutyl Ketone	ug/L	ND	5.0	6607529			
Methyl t-butyl ether (MTBE)	ug/L	ND	0.50	6607529			
Styrene	ug/L	ND	0.50	6607529			
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	6607529			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		MCQ778			MCQ778		
Sampling Date		2020/02/26 09:32			2020/02/26 09:32		
COC Number		759999-01-01			759999-01-01		
	UNITS	GW-11205379-022620-JC-001	RDL	QC Batch	GW-11205379-022620-JC-001 Lab-Dup	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	6607529			
Tetrachloroethylene	ug/L	ND	0.20	6607529			
Toluene	ug/L	ND	0.20	6607529			
1,1,1-Trichloroethane	ug/L	ND	0.20	6607529			
1,1,2-Trichloroethane	ug/L	ND	0.50	6607529			
Trichloroethylene	ug/L	ND	0.20	6607529			
Trichlorofluoromethane (FREON 11)	ug/L	ND	0.50	6607529			
Vinyl Chloride	ug/L	ND	0.20	6607529			
p+m-Xylene	ug/L	ND	0.20	6607529			
o-Xylene	ug/L	ND	0.20	6607529			
Total Xylenes	ug/L	ND	0.20	6607529			
F1 (C6-C10)	ug/L	ND	25	6607529			
F1 (C6-C10) - BTEX	ug/L	ND	25	6607529			
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	ND	100	6616821	ND	100	6616821
F3 (C16-C34 Hydrocarbons)	ug/L	ND	200	6616821	ND	200	6616821
F4 (C34-C50 Hydrocarbons)	ug/L	ND	200	6616821	ND	200	6616821
Reached Baseline at C50	ug/L	Yes		6616821	Yes		6616821
Surrogate Recovery (%)							
o-Terphenyl	%	105		6616821	105		6616821
4-Bromofluorobenzene	%	89		6607529			
D4-1,2-Dichloroethane	%	109		6607529			
D8-Toluene	%	92		6607529			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		MCQ779	MCQ780	MCQ781		
Sampling Date		2020/02/25 11:40	2020/02/25 12:48	2020/02/26 10:58		
COC Number		759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-002	GW-11205379-022520-JC-003	GW-11205379-022620-JC-008	RDL	QC Batch
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	ND	0.50	6608994
Volatile Organics						
Acetone (2-Propanone)	ug/L	ND	ND	ND	10	6607529
Benzene	ug/L	ND	ND	ND	0.20	6607529
Bromodichloromethane	ug/L	ND	ND	ND	0.50	6607529
Bromoform	ug/L	ND	ND	ND	1.0	6607529
Bromomethane	ug/L	ND	ND	ND	0.50	6607529
Carbon Tetrachloride	ug/L	ND	ND	ND	0.20	6607529
Chlorobenzene	ug/L	ND	ND	ND	0.20	6607529
Chloroform	ug/L	ND	ND	ND	0.20	6607529
Dibromochloromethane	ug/L	ND	ND	ND	0.50	6607529
1,2-Dichlorobenzene	ug/L	ND	ND	ND	0.50	6607529
1,3-Dichlorobenzene	ug/L	ND	ND	ND	0.50	6607529
1,4-Dichlorobenzene	ug/L	ND	ND	ND	0.50	6607529
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	ND	1.0	6607529
1,1-Dichloroethane	ug/L	ND	ND	ND	0.20	6607529
1,2-Dichloroethane	ug/L	ND	ND	ND	0.50	6607529
1,1-Dichloroethylene	ug/L	ND	ND	ND	0.20	6607529
cis-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.50	6607529
trans-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.50	6607529
1,2-Dichloropropane	ug/L	ND	ND	ND	0.20	6607529
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	0.30	6607529
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	0.40	6607529
Ethylbenzene	ug/L	ND	ND	ND	0.20	6607529
Ethylene Dibromide	ug/L	ND	ND	ND	0.20	6607529
Hexane	ug/L	ND	ND	ND	1.0	6607529
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	ND	2.0	6607529
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	ND	10	6607529
Methyl Isobutyl Ketone	ug/L	ND	ND	ND	5.0	6607529
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	ND	0.50	6607529
Styrene	ug/L	ND	ND	ND	0.50	6607529
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	0.50	6607529
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	0.50	6607529

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		MCQ779	MCQ780	MCQ781		
Sampling Date		2020/02/25 11:40	2020/02/25 12:48	2020/02/26 10:58		
COC Number		759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-002	GW-11205379-022520-JC-003	GW-11205379-022620-JC-008	RDL	QC Batch
Tetrachloroethylene	ug/L	ND	ND	ND	0.20	6607529
Toluene	ug/L	0.32	ND	ND	0.20	6607529
1,1,1-Trichloroethane	ug/L	ND	ND	ND	0.20	6607529
1,1,2-Trichloroethane	ug/L	ND	ND	ND	0.50	6607529
Trichloroethylene	ug/L	ND	ND	ND	0.20	6607529
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	ND	0.50	6607529
Vinyl Chloride	ug/L	ND	ND	ND	0.20	6607529
p+m-Xylene	ug/L	0.23	ND	ND	0.20	6607529
o-Xylene	ug/L	ND	ND	ND	0.20	6607529
Total Xylenes	ug/L	0.23	ND	ND	0.20	6607529
F1 (C6-C10)	ug/L	ND	ND	ND	25	6607529
F1 (C6-C10) - BTEX	ug/L	ND	ND	ND	25	6607529
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	ND	100	6616821
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	ND	200	6616821
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	ND	200	6616821
Reached Baseline at C50	ug/L	Yes	Yes	Yes		6616821
Surrogate Recovery (%)						
o-Terphenyl	%	103	96	101		6616821
4-Bromofluorobenzene	%	87	88	87		6607529
D4-1,2-Dichloroethane	%	104	103	104		6607529
D8-Toluene	%	96	95	95		6607529

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		MCQ782	MCQ783	MCQ784		
Sampling Date		2020/02/26 12:26	2020/02/26 13:15	2020/02/26 13:15		
COC Number		759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-009	GW-11205379-022620-JC-010	GW-11205379-022620-JC-011	RDL	QC Batch
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	ND	0.50	6608994
Volatile Organics						
Acetone (2-Propanone)	ug/L	ND	ND	ND	10	6607529
Benzene	ug/L	ND	1.9	1.8	0.20	6607529
Bromodichloromethane	ug/L	ND	ND	ND	0.50	6607529
Bromoform	ug/L	ND	ND	ND	1.0	6607529
Bromomethane	ug/L	ND	ND	ND	0.50	6607529
Carbon Tetrachloride	ug/L	ND	ND	ND	0.20	6607529
Chlorobenzene	ug/L	ND	ND	ND	0.20	6607529
Chloroform	ug/L	ND	ND	ND	0.20	6607529
Dibromochloromethane	ug/L	ND	ND	ND	0.50	6607529
1,2-Dichlorobenzene	ug/L	ND	ND	ND	0.50	6607529
1,3-Dichlorobenzene	ug/L	ND	ND	ND	0.50	6607529
1,4-Dichlorobenzene	ug/L	ND	ND	ND	0.50	6607529
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	ND	1.0	6607529
1,1-Dichloroethane	ug/L	ND	ND	ND	0.20	6607529
1,2-Dichloroethane	ug/L	ND	ND	ND	0.50	6607529
1,1-Dichloroethylene	ug/L	ND	ND	ND	0.20	6607529
cis-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.50	6607529
trans-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.50	6607529
1,2-Dichloropropane	ug/L	ND	ND	ND	0.20	6607529
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	0.30	6607529
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	0.40	6607529
Ethylbenzene	ug/L	ND	0.22	0.21	0.20	6607529
Ethylene Dibromide	ug/L	ND	ND	ND	0.20	6607529
Hexane	ug/L	ND	ND	ND	1.0	6607529
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	ND	2.0	6607529
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	ND	10	6607529
Methyl Isobutyl Ketone	ug/L	ND	ND	ND	5.0	6607529
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	ND	0.50	6607529
Styrene	ug/L	ND	ND	ND	0.50	6607529
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	0.50	6607529
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	0.50	6607529

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		MCQ782	MCQ783	MCQ784		
Sampling Date		2020/02/26 12:26	2020/02/26 13:15	2020/02/26 13:15		
COC Number		759999-01-01	759999-01-01	759999-01-01		
	UNITS	GW-11205379-022620-JC-009	GW-11205379-022620-JC-010	GW-11205379-022620-JC-011	RDL	QC Batch
Tetrachloroethylene	ug/L	ND	ND	ND	0.20	6607529
Toluene	ug/L	0.41	0.53	0.52	0.20	6607529
1,1,1-Trichloroethane	ug/L	ND	ND	ND	0.20	6607529
1,1,2-Trichloroethane	ug/L	ND	ND	ND	0.50	6607529
Trichloroethylene	ug/L	ND	ND	ND	0.20	6607529
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	ND	0.50	6607529
Vinyl Chloride	ug/L	ND	ND	ND	0.20	6607529
p+m-Xylene	ug/L	0.36	1.7	1.6	0.20	6607529
o-Xylene	ug/L	0.30	0.54	0.52	0.20	6607529
Total Xylenes	ug/L	0.66	2.2	2.1	0.20	6607529
F1 (C6-C10)	ug/L	ND	31	31	25	6607529
F1 (C6-C10) - BTEX	ug/L	ND	26	26	25	6607529
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	ND	100	6616821
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	ND	200	6616821
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	ND	200	6616821
Reached Baseline at C50	ug/L	Yes	Yes	Yes		6616821
Surrogate Recovery (%)						
o-Terphenyl	%	103	102	106		6616821
4-Bromofluorobenzene	%	86	86	84		6607529
D4-1,2-Dichloroethane	%	104	105	106		6607529
D8-Toluene	%	96	97	96		6607529

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: MCQ778
Sample ID: GW-11205379-022620-JC-001
Matrix: Water

Collected: 2020/02/26
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6608905	N/A	2020/03/04	Automated Statchk
1,3-Dichloropropene Sum	CALC	6608994	N/A	2020/03/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	6611535	N/A	2020/03/02	Deonarine Ramnarine
Conductivity	AT	6611442	N/A	2020/02/28	Surinder Rai
Chromium (VI) in Water	IC	6609975	N/A	2020/03/02	Lang Le
Free (WAD) Cyanide	SKAL/CN	6611563	N/A	2020/02/28	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6616821	2020/03/03	2020/03/04	Prabhjot Gulati
Mercury	CV/AA	6611399	2020/02/28	2020/02/28	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6611197	N/A	2020/03/02	Prempal Bhatti
OC Pesticides (Selected) & PCB	GC/ECD	6618158	2020/03/04	2020/03/05	Li Peng
OC Pesticides Summed Parameters	CALC	6608942	N/A	2020/02/28	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6616814	2020/03/03	2020/03/04	Jiaxuan (Simon) Xi
pH	AT	6611446	2020/02/28	2020/02/28	Surinder Rai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6607529	N/A	2020/02/29	Anna Gabrielyan

BV Labs ID: MCQ778 Dup
Sample ID: GW-11205379-022620-JC-001
Matrix: Water

Collected: 2020/02/26
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6616821	2020/03/03	2020/03/04	Prabhjot Gulati
Mercury	CV/AA	6611399	2020/02/28	2020/02/28	Medhat Nasr
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6616814	2020/03/03	2020/03/04	Jiaxuan (Simon) Xi

BV Labs ID: MCQ779
Sample ID: GW-11205379-022620-JC-002
Matrix: Water

Collected: 2020/02/25
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6608905	N/A	2020/03/04	Automated Statchk
1,3-Dichloropropene Sum	CALC	6608994	N/A	2020/03/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	6611535	N/A	2020/03/02	Deonarine Ramnarine
Conductivity	AT	6611442	N/A	2020/02/28	Surinder Rai
Chromium (VI) in Water	IC	6609975	N/A	2020/03/02	Lang Le
Free (WAD) Cyanide	SKAL/CN	6611563	N/A	2020/02/28	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6616821	2020/03/03	2020/03/04	Prabhjot Gulati
Mercury	CV/AA	6611399	2020/02/28	2020/02/28	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6611211	N/A	2020/02/29	Prempal Bhatti
OC Pesticides (Selected) & PCB	GC/ECD	6618158	2020/03/04	2020/03/05	Li Peng
OC Pesticides Summed Parameters	CALC	6608942	N/A	2020/02/28	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6616814	2020/03/03	2020/03/04	Jiaxuan (Simon) Xi
pH	AT	6611446	2020/02/28	2020/02/28	Surinder Rai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6607529	N/A	2020/02/29	Anna Gabrielyan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: MCQ779 Dup
Sample ID: GW-11205379-022620-JC-002
Matrix: Water

Collected: 2020/02/25
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	6609975	N/A	2020/03/02	Lang Le

BV Labs ID: MCQ780
Sample ID: GW-11205379-022520-JC-003
Matrix: Water

Collected: 2020/02/25
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6608905	N/A	2020/03/04	Automated Statchk
1,3-Dichloropropene Sum	CALC	6608994	N/A	2020/03/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	6611535	N/A	2020/03/02	Deonarine Ramnarine
Conductivity	AT	6611442	N/A	2020/02/28	Surinder Rai
Chromium (VI) in Water	IC	6609975	N/A	2020/03/02	Lang Le
Free (WAD) Cyanide	SKAL/CN	6611563	N/A	2020/02/28	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6616821	2020/03/03	2020/03/04	Prabhjot Gulati
Mercury	CV/AA	6611399	2020/02/28	2020/02/28	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6611211	N/A	2020/02/29	Prempal Bhatti
OC Pesticides (Selected) & PCB	GC/ECD	6618158	2020/03/04	2020/03/05	Li Peng
OC Pesticides Summed Parameters	CALC	6608942	N/A	2020/02/28	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6616814	2020/03/03	2020/03/04	Jiaxuan (Simon) Xi
pH	AT	6611446	2020/02/28	2020/02/28	Surinder Rai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6607529	N/A	2020/02/29	Anna Gabrielyan

BV Labs ID: MCQ781
Sample ID: GW-11205379-022620-JC-008
Matrix: Water

Collected: 2020/02/26
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6608905	N/A	2020/03/04	Automated Statchk
1,3-Dichloropropene Sum	CALC	6608994	N/A	2020/03/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	6611535	N/A	2020/03/02	Deonarine Ramnarine
Conductivity	AT	6611442	N/A	2020/02/28	Surinder Rai
Chromium (VI) in Water	IC	6609975	N/A	2020/03/02	Lang Le
Free (WAD) Cyanide	SKAL/CN	6609304	N/A	2020/02/28	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6616821	2020/03/03	2020/03/04	Prabhjot Gulati
Mercury	CV/AA	6611399	2020/02/28	2020/02/28	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6611211	N/A	2020/02/29	Prempal Bhatti
OC Pesticides (Selected) & PCB	GC/ECD	6618158	2020/03/04	2020/03/05	Li Peng
OC Pesticides Summed Parameters	CALC	6608942	N/A	2020/02/28	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6616814	2020/03/03	2020/03/04	Jiaxuan (Simon) Xi
pH	AT	6611446	2020/02/28	2020/02/28	Surinder Rai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6607529	N/A	2020/02/29	Anna Gabrielyan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: MCQ782
Sample ID: GW-11205379-022620-JC-009
Matrix: Water

Collected: 2020/02/26
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6608905	N/A	2020/03/04	Automated Statchk
1,3-Dichloropropene Sum	CALC	6608994	N/A	2020/03/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	6611535	N/A	2020/03/02	Deonarine Ramnarine
Conductivity	AT	6611442	N/A	2020/02/28	Surinder Rai
Chromium (VI) in Water	IC	6609975	N/A	2020/03/02	Lang Le
Free (WAD) Cyanide	SKAL/CN	6609304	N/A	2020/02/28	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6616821	2020/03/03	2020/03/04	Prabhjot Gulati
Mercury	CV/AA	6613951	2020/03/02	2020/03/02	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6611211	N/A	2020/02/29	Prempal Bhatti
OC Pesticides (Selected) & PCB	GC/ECD	6618158	2020/03/04	2020/03/05	Li Peng
OC Pesticides Summed Parameters	CALC	6608942	N/A	2020/02/28	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6616814	2020/03/03	2020/03/04	Jiaxuan (Simon) Xi
pH	AT	6611446	2020/02/28	2020/02/28	Surinder Rai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6607529	N/A	2020/02/29	Anna Gabrielyan

BV Labs ID: MCQ783
Sample ID: GW-11205379-022620-JC-010
Matrix: Water

Collected: 2020/02/26
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6608905	N/A	2020/03/04	Automated Statchk
1,3-Dichloropropene Sum	CALC	6608994	N/A	2020/03/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	6611535	N/A	2020/03/02	Deonarine Ramnarine
Conductivity	AT	6611442	N/A	2020/02/28	Surinder Rai
Chromium (VI) in Water	IC	6609975	N/A	2020/03/02	Lang Le
Free (WAD) Cyanide	SKAL/CN	6609304	N/A	2020/02/28	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6616821	2020/03/03	2020/03/04	Prabhjot Gulati
Mercury	CV/AA	6613951	2020/03/02	2020/03/02	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6611211	N/A	2020/02/29	Prempal Bhatti
OC Pesticides (Selected) & PCB	GC/ECD	6618158	2020/03/04	2020/03/05	Li Peng
OC Pesticides Summed Parameters	CALC	6608942	N/A	2020/02/28	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6616814	2020/03/03	2020/03/04	Jiaxuan (Simon) Xi
pH	AT	6611446	2020/02/28	2020/02/28	Surinder Rai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6607529	N/A	2020/02/29	Anna Gabrielyan

BV Labs ID: MCQ783 Dup
Sample ID: GW-11205379-022620-JC-010
Matrix: Water

Collected: 2020/02/26
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	6611211	N/A	2020/02/29	Prempal Bhatti

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: MCQ784
Sample ID: GW-11205379-022620-JC-011
Matrix: Water

Collected: 2020/02/26
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	6608905	N/A	2020/03/04	Automated Statchk
1,3-Dichloropropene Sum	CALC	6608994	N/A	2020/03/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	6611535	N/A	2020/03/02	Deonarine Ramnarine
Conductivity	AT	6611442	N/A	2020/02/28	Surinder Rai
Chromium (VI) in Water	IC	6609975	N/A	2020/03/02	Lang Le
Free (WAD) Cyanide	SKAL/CN	6609304	N/A	2020/02/28	Gnana Thomas
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	6616821	2020/03/03	2020/03/04	Prabhjot Gulati
Mercury	CV/AA	6611399	2020/02/28	2020/02/28	Medhat Nasr
Dissolved Metals by ICPMS	ICP/MS	6611211	N/A	2020/02/29	Prempal Bhatti
OC Pesticides (Selected) & PCB	GC/ECD	6618158	2020/03/04	2020/03/05	Li Peng
OC Pesticides Summed Parameters	CALC	6608942	N/A	2020/02/28	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	6616814	2020/03/03	2020/03/04	Jiaxuan (Simon) Xi
pH	AT	6611446	2020/02/28	2020/02/28	Surinder Rai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6607529	N/A	2020/02/29	Anna Gabrielyan

BV Labs ID: MCQ785
Sample ID: TRIP-001
Matrix: Water

Collected: 2019/11/07
Shipped:
Received: 2020/02/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	6608994	N/A	2020/03/02	Automated Statchk
Volatile Organic Compounds and F1 PHCs	GC/MSFD	6607529	N/A	2020/02/29	Anna Gabrielyan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.3°C
Package 2	3.0°C

Revised report (2020/03/09): Reg.153 parameter list for Dissolved ICPMS Metals is included as requested.

Samples analyzed for pH and Conductivity as per client request.

Sample MCQ778 [GW-11205379-022620-JC-001] : Metals Analysis: Due to the sample matrix, the sample required dilution. Detection limits were adjusted accordingly.
Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample MCQ780 [GW-11205379-022520-JC-003] : Metals Analysis: Due to the sample matrix, the sample required dilution. Detection limits were adjusted accordingly.
Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample MCQ781 [GW-11205379-022620-JC-008] : Metals Analysis: Due to the sample matrix, the sample required dilution. Detection limits were adjusted accordingly.
Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample MCQ782 [GW-11205379-022620-JC-009] : Metals Analysis: Due to the sample matrix, the sample required dilution. Detection limits were adjusted accordingly.
Hexavalent Chromium: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample MCQ783 [GW-11205379-022620-JC-010] : Metals Analysis: Due to the sample matrix, the sample required dilution. Detection limits were adjusted accordingly.

Sample MCQ784 [GW-11205379-022620-JC-011] : Metals Analysis: Due to the sample matrix, the sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6607529	4-Bromofluorobenzene	2020/02/28	96	70 - 130	95	70 - 130	88	%		
6607529	D4-1,2-Dichloroethane	2020/02/28	101	70 - 130	103	70 - 130	103	%		
6607529	D8-Toluene	2020/02/28	107	70 - 130	105	70 - 130	95	%		
6616814	D10-Anthracene	2020/03/04	103	50 - 130	103	50 - 130	104	%		
6616814	D14-Terphenyl (FS)	2020/03/04	106	50 - 130	103	50 - 130	113	%		
6616814	D8-Acenaphthylene	2020/03/04	96	50 - 130	95	50 - 130	93	%		
6616821	o-Terphenyl	2020/03/03	107 (10)	60 - 130	107	60 - 130	102	%		
6618158	2,4,5,6-Tetrachloro-m-xylene	2020/03/05	60	50 - 130	77	50 - 130	71	%		
6618158	Decachlorobiphenyl	2020/03/05	71	50 - 130	110	50 - 130	97	%		
6607529	1,1,1,2-Tetrachloroethane	2020/02/29	99	70 - 130	107	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	1,1,1-Trichloroethane	2020/02/29	95	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	1,1,2,2-Tetrachloroethane	2020/02/29	95	70 - 130	108	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	1,1,2-Trichloroethane	2020/02/29	99	70 - 130	107	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	1,1-Dichloroethane	2020/02/29	98	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	1,1-Dichloroethylene	2020/02/29	106	70 - 130	108	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	1,2-Dichlorobenzene	2020/02/29	89	70 - 130	95	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	1,2-Dichloroethane	2020/02/29	94	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	1,2-Dichloropropane	2020/02/29	90	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	1,3-Dichlorobenzene	2020/02/29	92	70 - 130	94	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	1,4-Dichlorobenzene	2020/02/29	97	70 - 130	100	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	Acetone (2-Propanone)	2020/02/29	99	60 - 140	109	60 - 140	ND, RDL=10	ug/L	NC (1)	30
6607529	Benzene	2020/02/29	96	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	Bromodichloromethane	2020/02/29	92	70 - 130	99	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	Bromoform	2020/02/29	89	70 - 130	101	70 - 130	ND, RDL=1.0	ug/L	NC (1)	30
6607529	Bromomethane	2020/02/29	89	60 - 140	100	60 - 140	ND, RDL=0.50	ug/L	NC (1)	30
6607529	Carbon Tetrachloride	2020/02/29	94	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	Chlorobenzene	2020/02/29	90	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	Chloroform	2020/02/29	92	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	cis-1,2-Dichloroethylene	2020/02/29	88	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	cis-1,3-Dichloropropene	2020/02/29	80	70 - 130	85	70 - 130	ND, RDL=0.30	ug/L	NC (1)	30

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6607529	Dibromochloromethane	2020/02/29	95	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	Dichlorodifluoromethane (FREON 12)	2020/02/29	101	60 - 140	106	60 - 140	ND, RDL=1.0	ug/L	NC (1)	30
6607529	Ethylbenzene	2020/02/29	85	70 - 130	87	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	Ethylene Dibromide	2020/02/29	91	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	F1 (C6-C10) - BTEX	2020/02/29					ND, RDL=25	ug/L	NC (1)	30
6607529	F1 (C6-C10)	2020/02/29	90	60 - 140	93	60 - 140	ND, RDL=25	ug/L	NC (1)	30
6607529	Hexane	2020/02/29	107	70 - 130	108	70 - 130	ND, RDL=1.0	ug/L	NC (1)	30
6607529	Methyl Ethyl Ketone (2-Butanone)	2020/02/29	91	60 - 140	102	60 - 140	ND, RDL=10	ug/L	NC (1)	30
6607529	Methyl Isobutyl Ketone	2020/02/29	88	70 - 130	100	70 - 130	ND, RDL=5.0	ug/L	NC (1)	30
6607529	Methyl t-butyl ether (MTBE)	2020/02/29	80	70 - 130	84	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	Methylene Chloride(Dichloromethane)	2020/02/29	100	70 - 130	106	70 - 130	ND, RDL=2.0	ug/L	NC (1)	30
6607529	o-Xylene	2020/02/29	88	70 - 130	91	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	p+m-Xylene	2020/02/29	91	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	Styrene	2020/02/29	83	70 - 130	92	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	Tetrachloroethylene	2020/02/29	92	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	Toluene	2020/02/29	93	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	Total Xylenes	2020/02/29					ND, RDL=0.20	ug/L	NC (1)	30
6607529	trans-1,2-Dichloroethylene	2020/02/29	104	70 - 130	106	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	trans-1,3-Dichloropropene	2020/02/29	87	70 - 130	93	70 - 130	ND, RDL=0.40	ug/L	NC (1)	30
6607529	Trichloroethylene	2020/02/29	97	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6607529	Trichlorofluoromethane (FREON 11)	2020/02/29	104	70 - 130	107	70 - 130	ND, RDL=0.50	ug/L	NC (1)	30
6607529	Vinyl Chloride	2020/02/29	120	70 - 130	115	70 - 130	ND, RDL=0.20	ug/L	NC (1)	30
6609304	WAD Cyanide (Free)	2020/02/27	89	80 - 120	92	80 - 120	ND,RDL=1	ug/L	NC (1)	20
6609975	Chromium (VI)	2020/03/02	98 (2)	80 - 120	103	80 - 120	ND, RDL=0.50	ug/L	NC (3)	20
6611197	Dissolved Antimony (Sb)	2020/02/29	107	80 - 120	96	80 - 120	ND, RDL=0.50	ug/L		
6611197	Dissolved Arsenic (As)	2020/02/29	107	80 - 120	96	80 - 120	ND, RDL=1.0	ug/L		
6611197	Dissolved Barium (Ba)	2020/02/29	102	80 - 120	97	80 - 120	ND, RDL=2.0	ug/L		
6611197	Dissolved Beryllium (Be)	2020/02/29	100	80 - 120	88	80 - 120	ND, RDL=0.50	ug/L		
6611197	Dissolved Boron (B)	2020/02/29	93	80 - 120	85	80 - 120	ND, RDL=10	ug/L		
6611197	Dissolved Cadmium (Cd)	2020/02/29	102	80 - 120	94	80 - 120	ND, RDL=0.10	ug/L		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6611197	Dissolved Chromium (Cr)	2020/02/29	103	80 - 120	93	80 - 120	ND, RDL=5.0	ug/L		
6611197	Dissolved Cobalt (Co)	2020/02/29	106	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L		
6611197	Dissolved Copper (Cu)	2020/02/29	105	80 - 120	97	80 - 120	ND, RDL=1.0	ug/L		
6611197	Dissolved Lead (Pb)	2020/02/29	102	80 - 120	94	80 - 120	ND, RDL=0.50	ug/L	NC (1)	20
6611197	Dissolved Molybdenum (Mo)	2020/02/29	105	80 - 120	92	80 - 120	ND, RDL=0.50	ug/L		
6611197	Dissolved Nickel (Ni)	2020/02/29	103	80 - 120	97	80 - 120	ND, RDL=1.0	ug/L		
6611197	Dissolved Selenium (Se)	2020/02/29	103	80 - 120	96	80 - 120	ND, RDL=2.0	ug/L		
6611197	Dissolved Silver (Ag)	2020/02/29	101	80 - 120	94	80 - 120	ND, RDL=0.10	ug/L		
6611197	Dissolved Sodium (Na)	2020/02/29	NC	80 - 120	97	80 - 120	ND, RDL=100	ug/L		
6611197	Dissolved Thallium (Tl)	2020/02/29	99	80 - 120	93	80 - 120	ND, RDL=0.050	ug/L		
6611197	Dissolved Uranium (U)	2020/02/29	108	80 - 120	99	80 - 120	ND, RDL=0.10	ug/L		
6611197	Dissolved Vanadium (V)	2020/02/29	105	80 - 120	94	80 - 120	ND, RDL=0.50	ug/L		
6611197	Dissolved Zinc (Zn)	2020/02/29	104	80 - 120	96	80 - 120	ND, RDL=5.0	ug/L		
6611211	Dissolved Antimony (Sb)	2020/02/29	106 (4)	80 - 120	95	80 - 120	ND, RDL=0.50	ug/L	NC (6)	20
6611211	Dissolved Arsenic (As)	2020/02/29	104 (4)	80 - 120	97	80 - 120	ND, RDL=1.0	ug/L	NC (6)	20
6611211	Dissolved Barium (Ba)	2020/02/29	101 (4)	80 - 120	97	80 - 120	ND, RDL=2.0	ug/L	1.6 (6)	20
6611211	Dissolved Beryllium (Be)	2020/02/29	95 (4)	80 - 120	100	80 - 120	ND, RDL=0.50	ug/L	NC (6)	20
6611211	Dissolved Boron (B)	2020/02/29	88 (4)	80 - 120	97	80 - 120	ND, RDL=10	ug/L	3.6 (6)	20
6611211	Dissolved Cadmium (Cd)	2020/02/29	101 (4)	80 - 120	95	80 - 120	ND, RDL=0.10	ug/L	NC (6)	20
6611211	Dissolved Chromium (Cr)	2020/02/29	101 (4)	80 - 120	95	80 - 120	ND, RDL=5.0	ug/L	NC (6)	20
6611211	Dissolved Cobalt (Co)	2020/02/29	102 (4)	80 - 120	99	80 - 120	ND, RDL=0.50	ug/L	NC (6)	20
6611211	Dissolved Copper (Cu)	2020/02/29	103 (4)	80 - 120	96	80 - 120	ND, RDL=1.0	ug/L	NC (6)	20
6611211	Dissolved Lead (Pb)	2020/02/29	96 (4)	80 - 120	98	80 - 120	ND, RDL=0.50	ug/L	NC (6)	20
6611211	Dissolved Molybdenum (Mo)	2020/02/29	103 (4)	80 - 120	94	80 - 120	ND, RDL=0.50	ug/L	NC (6)	20
6611211	Dissolved Nickel (Ni)	2020/02/29	100 (4)	80 - 120	96	80 - 120	ND, RDL=1.0	ug/L	NC (6)	20
6611211	Dissolved Selenium (Se)	2020/02/29	84 (4)	80 - 120	100	80 - 120	ND, RDL=2.0	ug/L	NC (6)	20
6611211	Dissolved Silver (Ag)	2020/02/29	72 (5,4)	80 - 120	87	80 - 120	ND, RDL=0.10	ug/L	NC (6)	20
6611211	Dissolved Sodium (Na)	2020/02/29	NC (4)	80 - 120	101	80 - 120	140, RDL=100	ug/L	1.9 (6)	20
6611211	Dissolved Thallium (Tl)	2020/02/29	95 (4)	80 - 120	100	80 - 120	ND, RDL=0.050	ug/L	NC (6)	20
6611211	Dissolved Uranium (U)	2020/02/29	104 (4)	80 - 120	100	80 - 120	ND, RDL=0.10	ug/L	7.8 (6)	20

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6611211	Dissolved Vanadium (V)	2020/02/29	104 (4)	80 - 120	95	80 - 120	ND, RDL=0.50	ug/L	NC (6)	20
6611211	Dissolved Zinc (Zn)	2020/02/29	101 (4)	80 - 120	97	80 - 120	ND, RDL=5.0	ug/L	NC (6)	20
6611399	Mercury (Hg)	2020/02/28	95 (7)	75 - 125	97	80 - 120	ND, RDL=0.1	ug/L	NC (8)	20
6611442	Conductivity	2020/02/28			102	85 - 115	ND, RDL=0.001	mS/cm	0.16 (1)	25
6611446	pH	2020/02/28			102	98 - 103			0.16 (1)	N/A
6611535	Dissolved Chloride (Cl-)	2020/03/02	NC	80 - 120	105	80 - 120	ND, RDL=1.0	mg/L	1.0 (1)	20
6611563	WAD Cyanide (Free)	2020/02/28	101	80 - 120	97	80 - 120	ND,RDL=1	ug/L	NC (1)	20
6613951	Mercury (Hg)	2020/03/02	100	75 - 125	99	80 - 120	ND, RDL=0.1	ug/L	NC (1)	20
6616814	1-Methylnaphthalene	2020/03/04	112	50 - 130	113	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	2-Methylnaphthalene	2020/03/04	103	50 - 130	103	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Acenaphthene	2020/03/04	97	50 - 130	110	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Acenaphthylene	2020/03/04	105	50 - 130	105	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Anthracene	2020/03/04	109	50 - 130	111	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Benzo(a)anthracene	2020/03/04	111	50 - 130	114	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Benzo(a)pyrene	2020/03/04	108	50 - 130	113	50 - 130	ND, RDL=0.010	ug/L	NC (9)	30
6616814	Benzo(b/j)fluoranthene	2020/03/04	106	50 - 130	107	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Benzo(g,h,i)perylene	2020/03/04	109	50 - 130	113	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Benzo(k)fluoranthene	2020/03/04	98	50 - 130	108	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Chrysene	2020/03/04	104	50 - 130	106	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Dibenzo(a,h)anthracene	2020/03/04	103	50 - 130	105	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Fluoranthene	2020/03/04	119	50 - 130	124	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Fluorene	2020/03/04	97	50 - 130	102	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Indeno(1,2,3-cd)pyrene	2020/03/04	115	50 - 130	117	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Naphthalene	2020/03/04	98	50 - 130	98	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616814	Phenanthrene	2020/03/04	109	50 - 130	110	50 - 130	ND, RDL=0.030	ug/L	NC (9)	30
6616814	Pyrene	2020/03/04	114	50 - 130	120	50 - 130	ND, RDL=0.050	ug/L	NC (9)	30
6616821	F2 (C10-C16 Hydrocarbons)	2020/03/04	100 (10)	50 - 130	98	60 - 130	ND, RDL=100	ug/L	NC (9)	30
6616821	F3 (C16-C34 Hydrocarbons)	2020/03/04	NC (10)	50 - 130	97	60 - 130	ND, RDL=200	ug/L	NC (9)	30
6616821	F4 (C34-C50 Hydrocarbons)	2020/03/04	95 (10)	50 - 130	94	60 - 130	ND, RDL=200	ug/L	NC (9)	30
6618158	a-Chlordane	2020/03/05	65	50 - 130	92	50 - 130	ND, RDL=0.005	ug/L	8.9 (1)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6618158	Aldrin	2020/03/05	56	50 - 130	69	50 - 130	ND, RDL=0.005	ug/L	18 (1)	30
6618158	Aroclor 1242	2020/03/05					ND, RDL=0.05	ug/L		
6618158	Aroclor 1248	2020/03/05					ND, RDL=0.05	ug/L		
6618158	Aroclor 1254	2020/03/05					ND, RDL=0.05	ug/L		
6618158	Aroclor 1260	2020/03/05					ND, RDL=0.05	ug/L		
6618158	Dieldrin	2020/03/05	74	50 - 130	110	50 - 130	ND, RDL=0.005	ug/L	25 (1)	30
6618158	Endosulfan I (alpha)	2020/03/05	68	50 - 130	81	50 - 130	ND, RDL=0.005	ug/L	3.5 (1)	30
6618158	Endosulfan II (beta)	2020/03/05	59	50 - 130	86	50 - 130	ND, RDL=0.005	ug/L	3.5 (1)	30
6618158	Endrin	2020/03/05	53	50 - 130	99	50 - 130	ND, RDL=0.005	ug/L	19 (1)	30
6618158	g-Chlordane	2020/03/05	68	50 - 130	99	50 - 130	ND, RDL=0.005	ug/L	18 (1)	30
6618158	Heptachlor epoxide	2020/03/05	69	50 - 130	90	50 - 130	ND, RDL=0.005	ug/L	4.4 (1)	30
6618158	Heptachlor	2020/03/05	60	50 - 130	72	50 - 130	ND, RDL=0.005	ug/L	0.89 (1)	30
6618158	Hexachlorobenzene	2020/03/05	54	50 - 130	88	50 - 130	ND, RDL=0.005	ug/L	10 (1)	30
6618158	Hexachlorobutadiene	2020/03/05	64	50 - 130	77	50 - 130	ND, RDL=0.009	ug/L	24 (1)	30
6618158	Hexachloroethane	2020/03/05	70	50 - 130	78	50 - 130	ND, RDL=0.01	ug/L	21 (1)	30
6618158	Lindane	2020/03/05	65	50 - 130	85	50 - 130	ND, RDL=0.003	ug/L	NC (1)	30
6618158	Methoxychlor	2020/03/05	82	50 - 130	103	50 - 130	ND, RDL=0.01	ug/L	29 (1)	30
6618158	o,p-DDD	2020/03/05	68	50 - 130	97	50 - 130	ND, RDL=0.005	ug/L	11 (1)	30
6618158	o,p-DDE	2020/03/05	73	50 - 130	88	50 - 130	ND, RDL=0.005	ug/L	13 (1)	30
6618158	o,p-DDT	2020/03/05	84	50 - 130	103	50 - 130	ND, RDL=0.005	ug/L	25 (1)	30
6618158	p,p-DDD	2020/03/05	70	50 - 130	94	50 - 130	ND, RDL=0.005	ug/L	9.0 (1)	30
6618158	p,p-DDE	2020/03/05	70	50 - 130	79	50 - 130	ND, RDL=0.005	ug/L	2.4 (1)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6618158	p,p-DDT	2020/03/05	80	50 - 130	102	50 - 130	ND, RDL=0.005	ug/L	30 (1)	30

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [MCQ779-04]

(3) Duplicate Parent ID [MCQ779-04]

(4) Matrix Spike Parent ID [MCQ783-06]

(5) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(6) Duplicate Parent ID [MCQ783-06]

(7) Matrix Spike Parent ID [MCQ778-03]

(8) Duplicate Parent ID [MCQ778-03]

(9) Duplicate Parent ID [MCQ778-07]

(10) Matrix Spike Parent ID [MCQ779-07]

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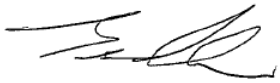
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C052740
Report Date: 2020/03/09

GHD Limited
Client Project #: 11205379-20
Your P.O. #: 73518145-1
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Brad Newman, Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

26-Feb-20 16:13

Ema Gitej

C052740

GID ENV-1184

Presence of Visible Particulate/Sediment

Maxxam Analytics
CAM FCD-01013/5
Page 1 of 1

When there is >1cm of visible particulate/sediment, the amount will be recorded in the field below

Bottle Types

			Inorganics					Organics										Hydrocarbons							Volatiles				Other
	Sample ID	All	CrVI	CN	General	Hg	Metals (Diss.)	Organic 1 of 2	Organic 2 of 2	PCB 1 of 2	PCB 2 of 2	Pest/ Herb 1 of 2	Pest/ Herb 2 of 2	SVOC/ ABN 1 of 2	SVOC/ ABN 2 of 2	PAH 1 of 2	PAH 2 of 2	Dioxin /Furan	F1 Vial 1	F1 Vial 2	F1 Vial 3	F1 Vial 4	F2-F4 1 of 2	F2-F4 2 of 2	F4G	VOC Vial 1	VOC Vial 2	VOC Vial 3	VOC Vial 4	
1	GW-1120 5379-022620-IC-001	TS																											
2	GW-1120 5379-022620-IC-008	TS																											
3																													
4																													
5																													
6																													
7																													
8																													
9	—																												
10																													

Comments: EXCEPT DHG, DISM, CRVI

Legend:	
P	Suspended Particulate
TS	Trace Settled Sediment (just covers bottom of container or less)
S	Sediment greater than (>) Trace, but less than (<) 1 cm

Recorded By: (signature/print) [illegible]

Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 GHD Limited	Company Name:		Quotation #:	B90001	BV Labs Job #:	Bottle Order #:
Attention:	Jennifer Balkwill (AP-735)	Attention:	11205379 Distribuiton list	P.O. #:	73518145-1		759999
Address:	455 Phillip St. Waterloo ON N2L 3X2	Address:		Project:	11205379-04	COC #:	Project Manager:
Tel:	(519) 884-0510 Fax: (519) 725-1394	Tel:	Fax:	Project Name:		C#759999-01-01	Ema Gitej
Email:	APinvoices-735@ghd.com	Email:	Jennifer.Balkwill@ghd.com; Aditya.Khandekar@ghd.co	Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☐ Res/Park ☐ Medium/Fine	☐ CCME ☐ Sanitary Sewer Bylaw	
☐ Table 2 ☐ Ind/Comm ☐ Coarse	☐ Reg 558. ☐ Storm Sewer Bylaw	
☐ Table 3 ☐ Agri/Other ☐ For RSC	☐ MISA Municipality	
☐ Table ___	☐ PWQO	
	☐ Other	

Include Criteria on Certificate of Analysis (Y/N)? ____

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Cr VI	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 Metals & Inorganics Pkg	Dissolved Metals by ICPMS (Full Scan)	O.Reg 153 PAHs	O.Reg 153 OC Pesticides (Incl PCB)	pH	Conductivity (mS/cm)	O.REG 153 VOCs by HS			# of Bottles	Comments
1	GW-1120537	9-022620-JC-001	FEB 26 2020	9:32	GW	X	X	X	X	X	X	6.68	75.0				12	
2	GW-1120537	9-022620-JC-002	FEB 25 2020	11:40	GW	X	X	X	X	X	X	7.37	9.78				12	
3	GW-1120537	9-022620-JC-003	FEB 25 2020	12:48	GW	X	X	X	X	X	X	6.92	34.5				12	
4	GW-1120537	9-022620-JC-008	FEB 26 2020	10:58	GW	X	X	X	X	X	X	6.91	15.3				12	
5	GW-1120537	9-022620-JC-009	FEB 26 2020	12:26	GW	X	X	X	X	X	X	6.77	19.2				12	
6	GW-1120537	9-022620-JC-010	FEB 26 2020	13:15	GW	X	X	X	X	X	X	6.80	25.1				12	
7	GW-1120537	9-022620-JC-011	FEB 26 2020	13:15	GW	X	X	X	X	X	X	6.80	25.1				12	
8	TRIP-001		NOV 7 2019	/	/	JC						/	/	X			2	
9																		2 COOLERS
10																		on ice

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: X
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ____ Time Required: ____
Rush Confirmation Number: ____ *(call lab for #)*

26-Feb-20 16:13
Ema Gitej
C052740
GID ENV-1184

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
JACQUELYN CHAPHEY	20/02/26	16:11	[illegible]	20/02/26	16:13	
			[illegible]	20/02/27	08:00	

Laboratory Use Only				
Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	1,3,6 / 3,3,3 / 2,3,2 / 4,3,3 / 0,4,2	Present	Y	
		Intact	Y	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

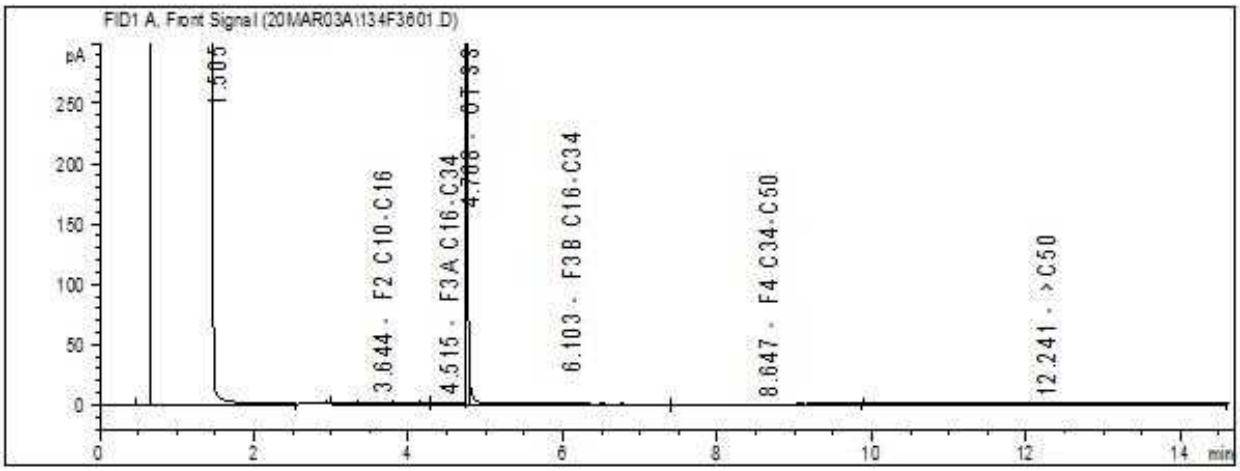
** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

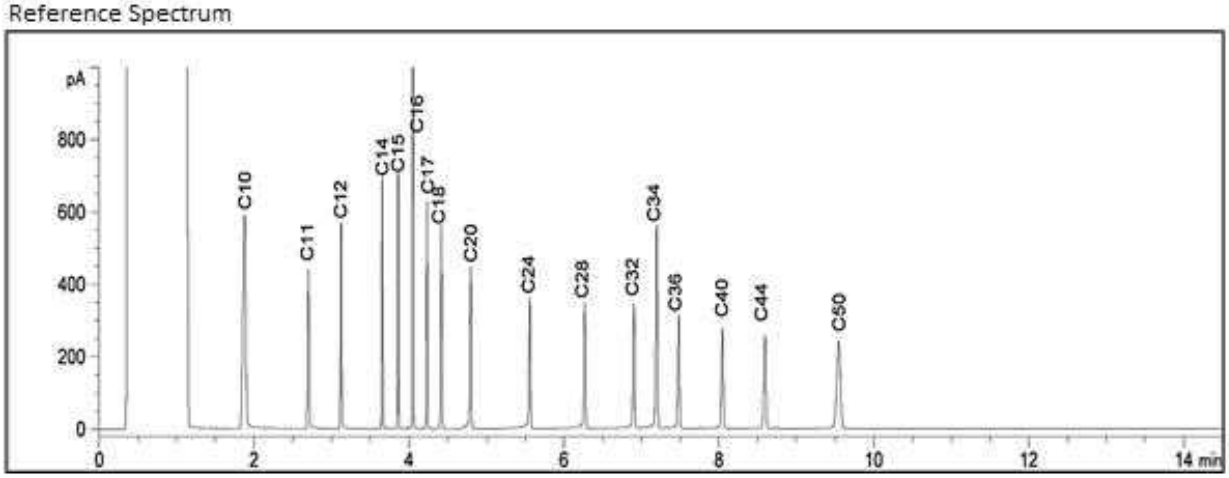
White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

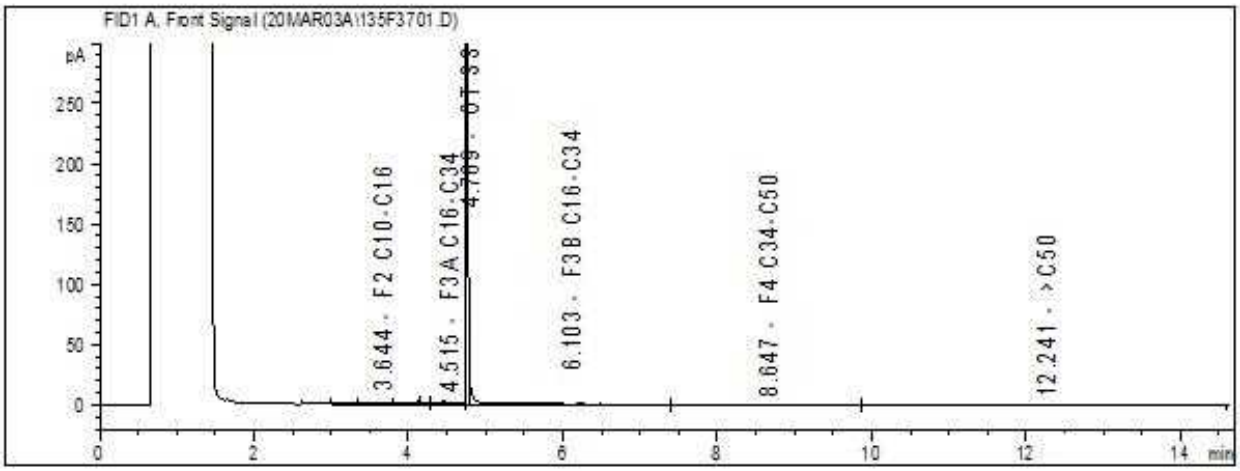
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

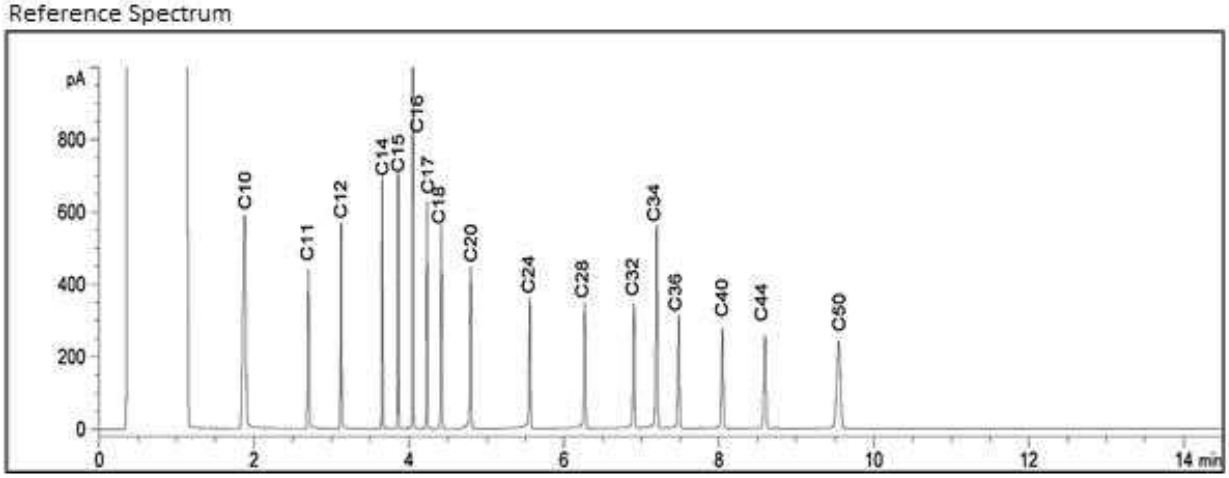
BV Labs Job #: C052740
Report Date: 2020/03/09
BV Labs Sample: MCQ778 Lab-Dup

GHD Limited
Client Project #: 11205379-20
Client ID: GW-11205379-022620-JC-001

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum

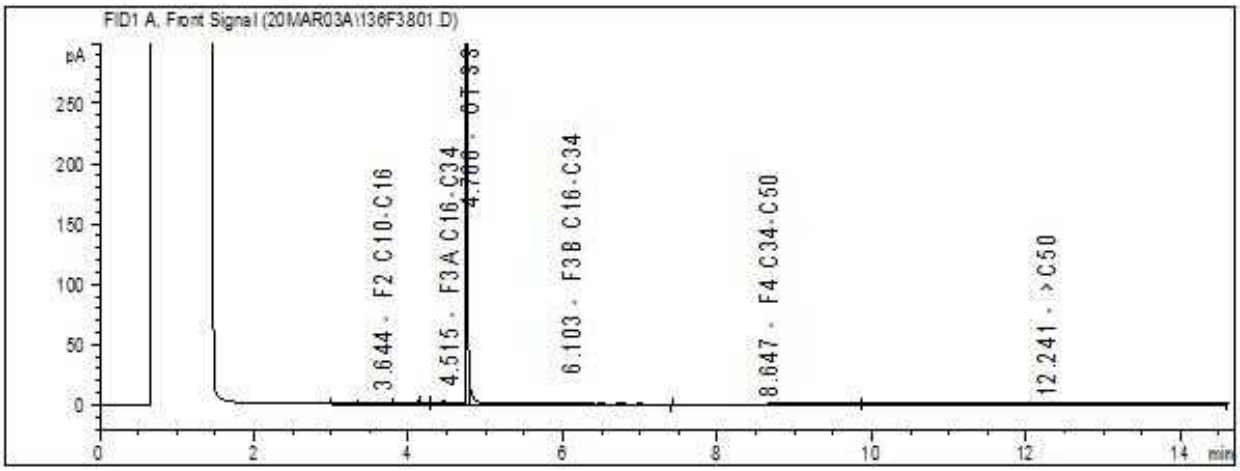


TYPICAL PRODUCT CARBON NUMBER RANGES

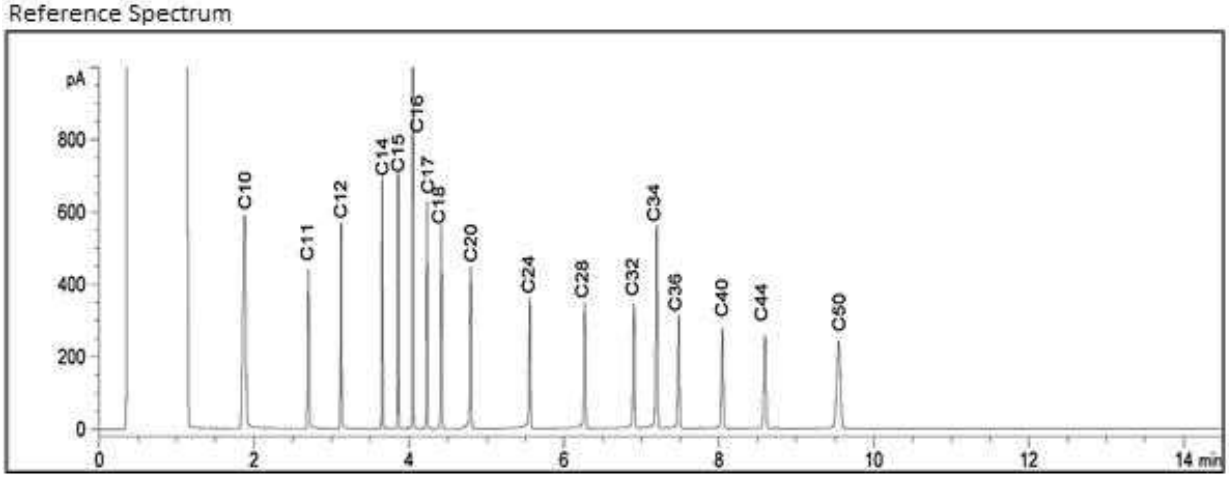
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

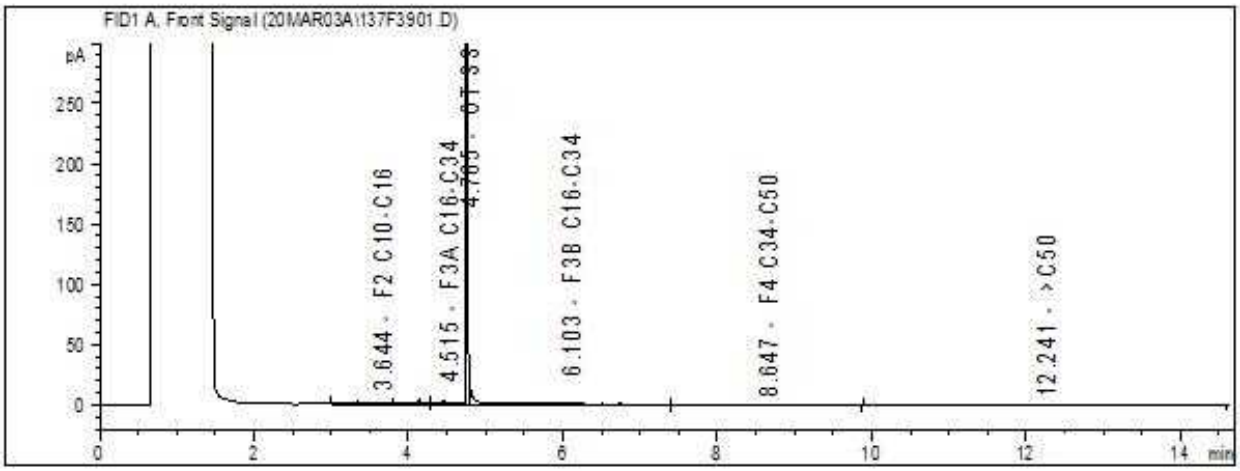
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

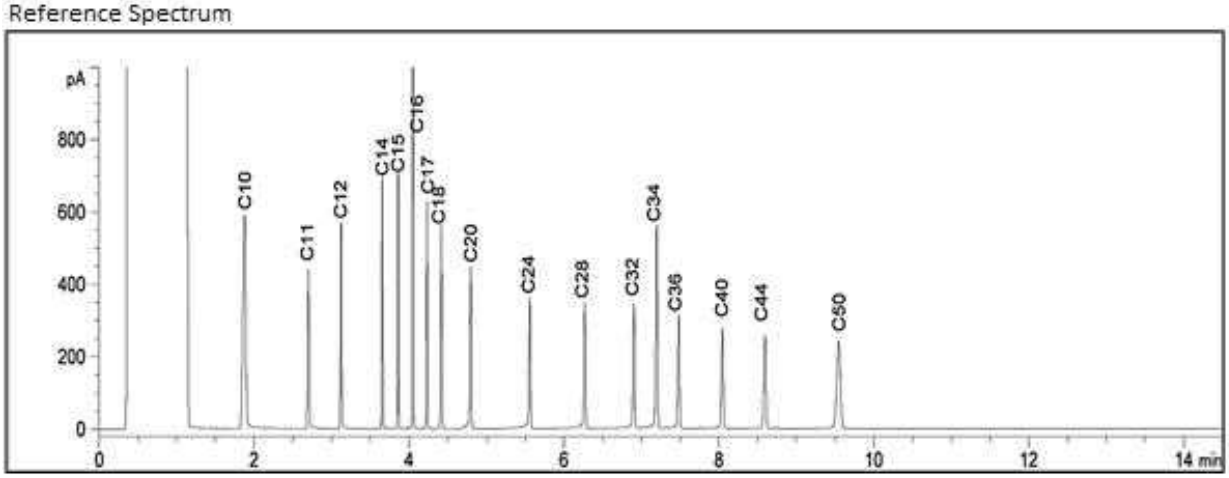
BV Labs Job #: C052740
Report Date: 2020/03/09
BV Labs Sample: MCQ780

GHD Limited
Client Project #: 11205379-20
Client ID: GW-11205379-022520-JC-003

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

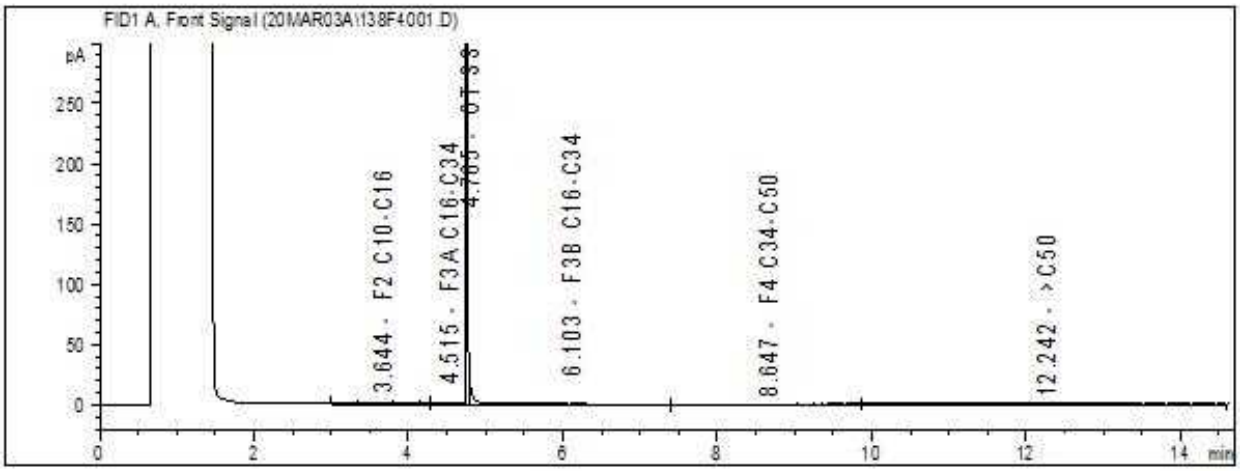
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

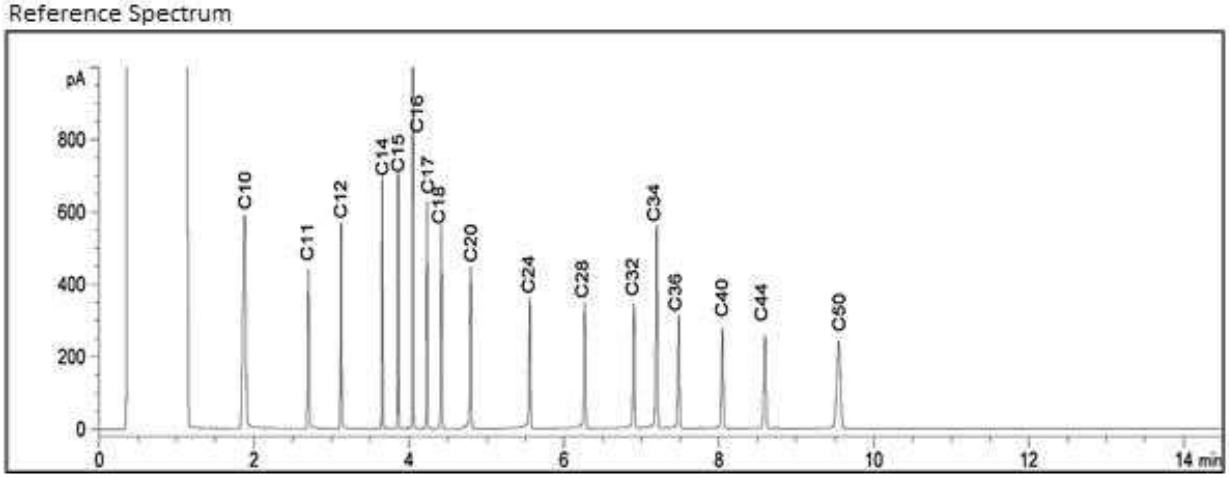
BV Labs Job #: C052740
Report Date: 2020/03/09
BV Labs Sample: MCQ781

GHD Limited
Client Project #: 11205379-20
Client ID: GW-11205379-022620-JC-008

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

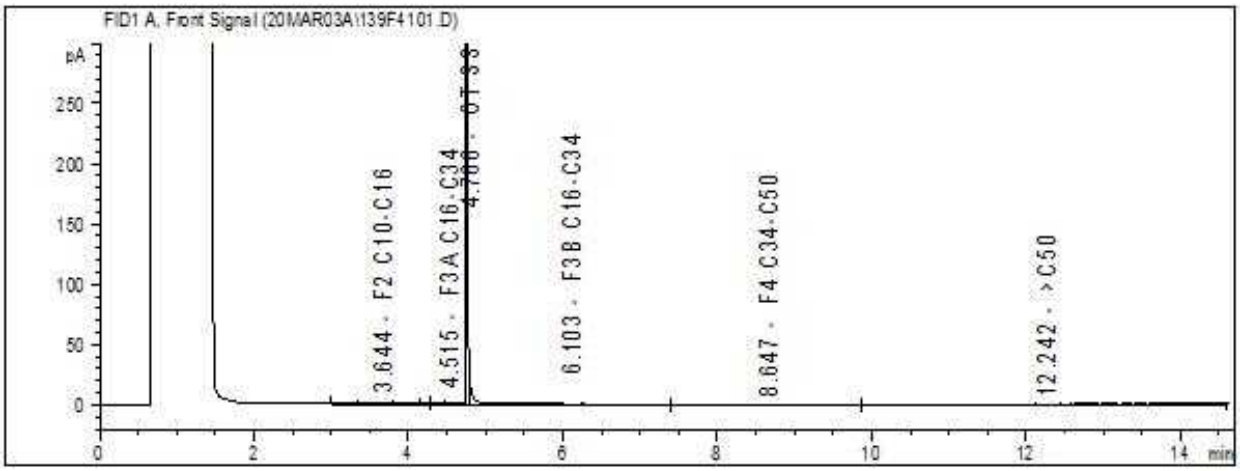
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

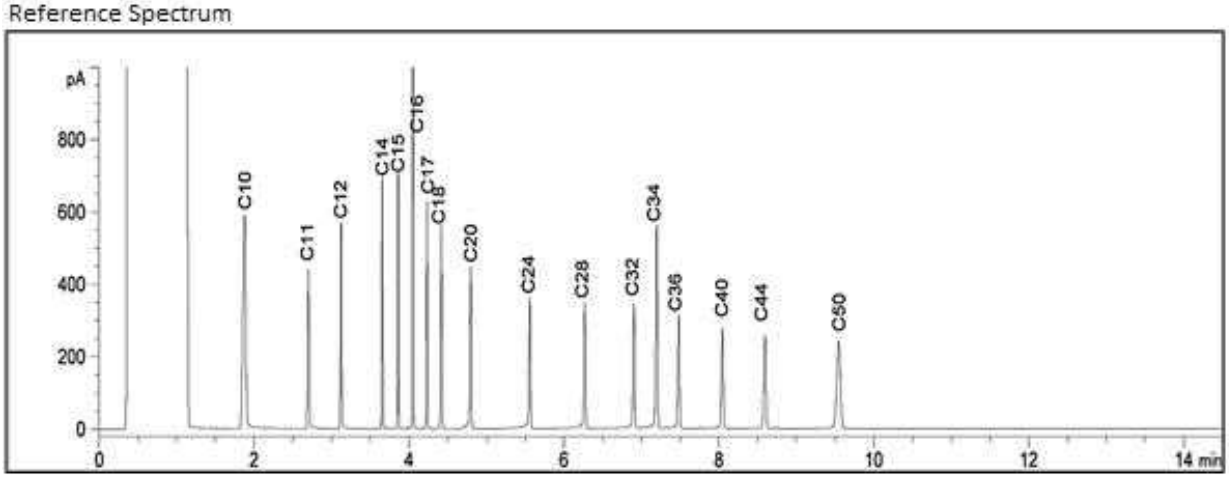
BV Labs Job #: C052740
Report Date: 2020/03/09
BV Labs Sample: MCQ782

GHD Limited
Client Project #: 11205379-20
Client ID: GW-11205379-022620-JC-009

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum

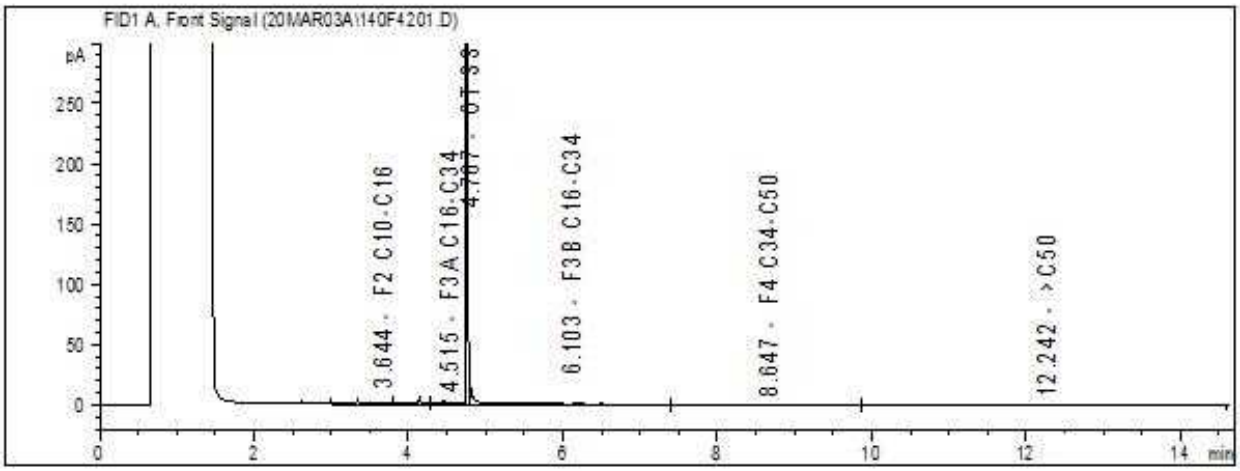


TYPICAL PRODUCT CARBON NUMBER RANGES

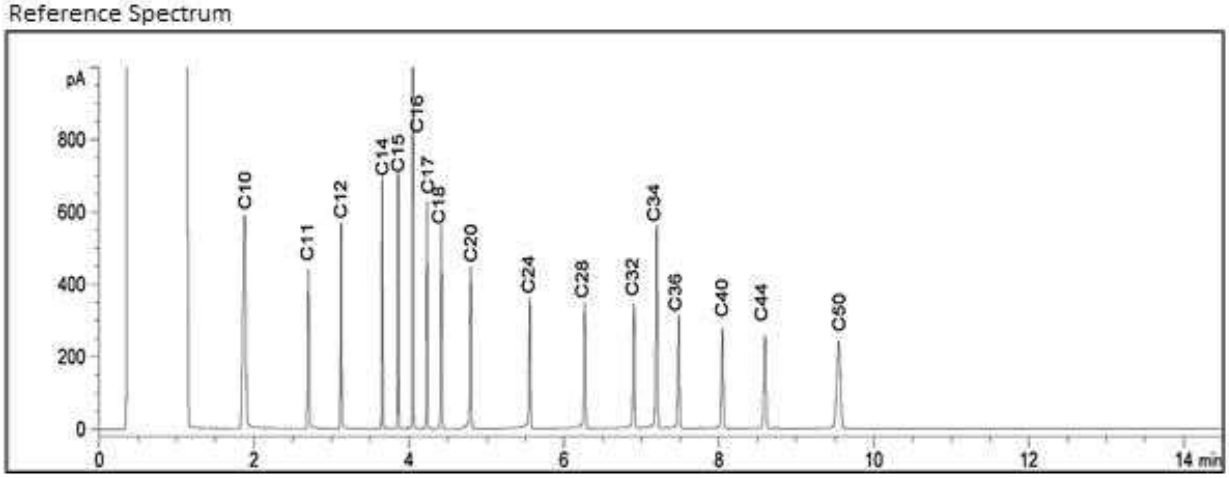
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

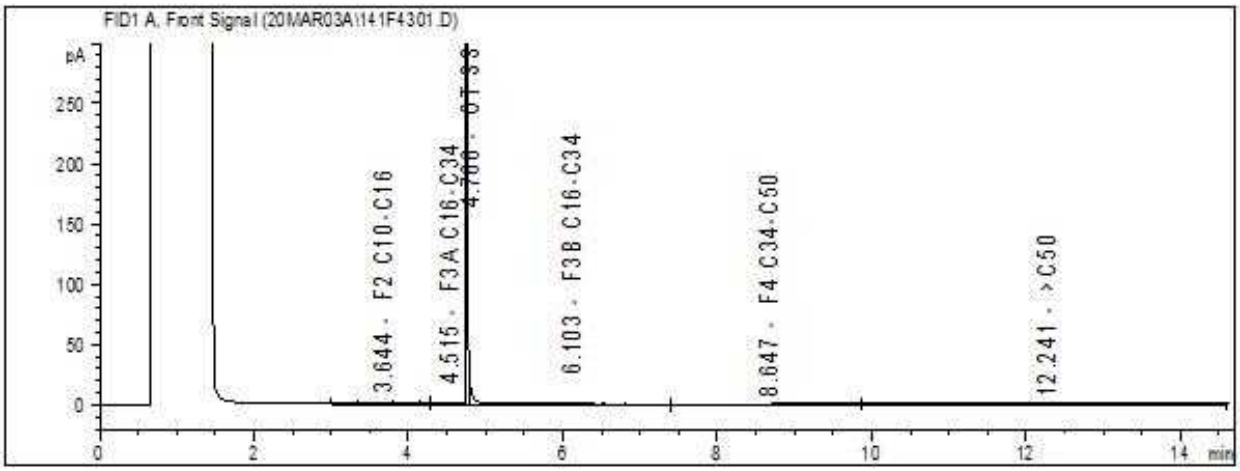
Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

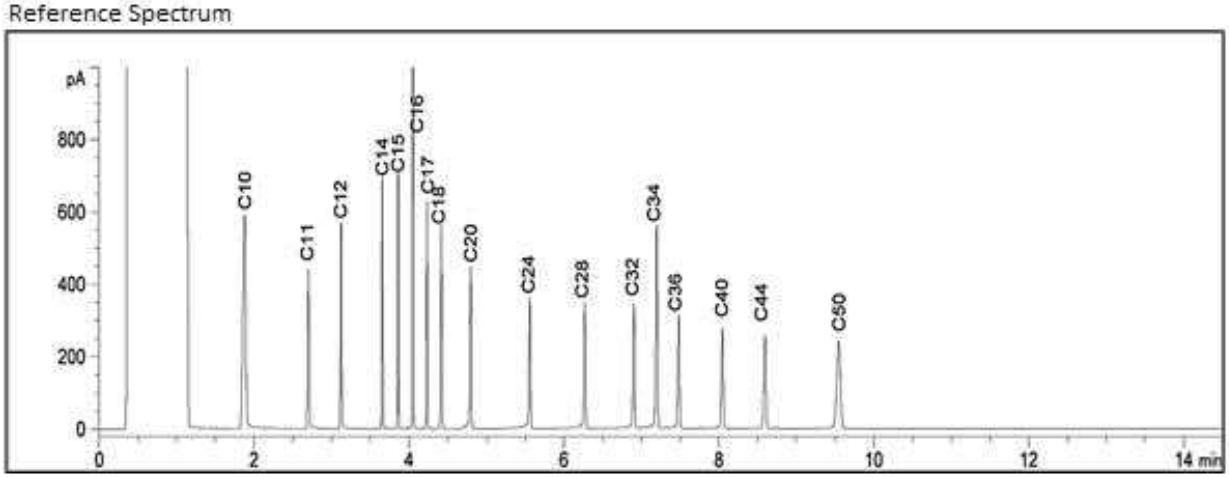
BV Labs Job #: C052740
Report Date: 2020/03/09
BV Labs Sample: MCQ784

GHD Limited
Client Project #: 11205379-20
Client ID: GW-11205379-022620-JC-011

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Reference Spectrum



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: **C6 - C12**	Diesel: **C10 - C24**	Jet Fuels: **C6 - C16**
Varsol: **C8 - C12**	Fuel Oils: **C6 - C32**	Creosote: **C10 - C26**
Kerosene: **C8 - C16**	Motor Oils: **C16 - C50**	Asphalt: **C18 - C50+**

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Appendix D
Waste Disposal Records

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement.

Equivalency Certificate No. SU8885

Doc: E17077 BO: 129842

Equivalency Certificate No. SU11003
Equivalency Certificate No. SU11176

CE11857-9

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifeste

A Generator / consignor / Producteur / expéditeur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: ON0055800

Company name / Nom de l'entreprise: CHILDREN'S HOSPITAL OF EASTERN ONTARIO

Mailing address / Adresse postale: 401 SMYTH RD, OTTAWA, ON K1H 8L1

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Shipping site address / Adresse du lieu de l'expédition: 401 Smyth Rd

City / Ville: OTTAWA | Province: ON | Postal code / Code postal: K1H 8L1

Intended Receiver / consignee / Réceptionnaire / destinataire prévu 2

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: A460716

TOMLINSON ENVIRONMENTAL SERVICES

Mailing address / Adresse postale: 5555 POWER ROAD OTTAWA, ON K1G 3N4

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. (613-822-2700)

Receiving site address / Adresse du lieu de destination: 5555 POWER ROAD

City / Ville: OTTAWA, ON K1G 3N4 | Province | Postal code / Code postal

B Carrier / Transporteur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: A860156

Company name / Nom de l'entreprise: TOMLINSON ENVIRONMENTAL SERVICES

Mailing address / Adresse postale: 5555 POWER ROAD, OTTAWA, ON K1G 3N4

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. (613-822-2700)

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Railcar No. 1 / 1e remorque / wagon	405 8PX	ON
Trailer - Railcar No. 2 / 2e remorque / wagon		

Port of entry / Point d'entrée: International use only | Port of exit / Point de sortie: International use only 25

Carrier Certification : *I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct.* 26
Attestation du transporteur : *J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.*

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): Matthew Bachinskie | Tel. No. / N° de tél. 613-822-2700 ( )

Date / Year / Année: 2020 | Month / Mois: 01S | Day / Jour: 011 | Signature:

C Receiver / consignee / Réceptionnaire / destinataire

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 28

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire sont les mêmes qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception — Year / Année | Month / Mois | Day / Jour | Time / Heure 29 ☐ A.M ☐ P.M

If waste or recyclable material to be transferred, specify intended company name/ Si les déchets ou matières recyclables doivent être transférés, préciser le nom du destinataire 30

Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

(i)	Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe 5	Sub. class(es) / Classe(s) sub.	UN No. / N° NU 6	Packing / risk gr. / Gr. d'emballage / de risque 7	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités 8	Packaging / Contenant No. / N°	Codes	Phys state / État phys. 10
(i)	146L	NON REGULATED LIQUID WASTE (purge water)	NR		NR	NR	1600	L	8	01	L
(ii)											
(iii)											
(iv)											

	Notice No. / N° de notification 11	Notice Line No / N° de ligne de la notification	Shipment / Envoi 12	Of / De	D or R code / Code D ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays: Export / Exportation 18	Import / Importation	Customs code(s) / Code(s) de douanes 19
(i)												
(ii)												
(iii)												
(iv)												

International use only

Quantity received / Quantité reçue	Units / L or / ou kg / Unités 31	Comments / Commentaires 32	Handling Code / Code de manutention 33	Shipment / Envoi 34 Accepted / Accepté	Refused / Refusé	Decont. 35 Pack. Cont.	Veh. Véh.

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

Receiver / consignee certification : *I certify that the information contained in Part C is correct and complete. /* ***Attestation du réceptionnaire / destinataire :*** *J'atteste que tous les renseignements à la partie C sont exacts et complets.*

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie) 37

Signature | Tel. No. / N° de tél. ( )

Generator / consignor certification: *I certify that the information contained in Part A is correct and complete. I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.*
Attestation du producteur / expéditeur: *J'atteste que tous les renseignements à la partie A sont exacts et complets. Je déclare que le contenu de ce chargement est décrit ci-dessus de façon complète et exacte par la désignation officielle de transport et qu'il est convenablement classé, emballé, marqué, étiqueté, muni de plaques-étiquettes et à tous égards bien conditionné pour être transporté conformément aux réglementations internationales et nationales applicables.*

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): Matthew Bachinskie | Tel. No. / N° de tél. 6138222700 20

Signature

Special handling / Manutention spéciale 22
☐ Attached /Ci-joint: ☑ As follows/ Ci-contre: Canutec 24 hours 613-996-6666

21 Date shipped / Date d'expédition — Year / Année: 2020 | Month / Mois: 01S | Day / Jour: 011 | Time / Heure ☐ A.M. ☐ P.M: 12:30 | Scheduled arrival date / Date d'arrivée prévue — Year / Année: 2020 | Month / Mois: 01S | Day / Jour: 011

Retained by Consignor / Gardée par l'expéditeur

Copy / Copie 2 (green / verte)

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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warren.croft@ghd.com
416.866.2359

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