Phase Two Environmental Site Assessment

770 and 774 Bronson Avenue and 557 Cambridge Street, Ottawa, Ontario

Client:

Katasa Groupe

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Prepared By:
Leah Wells, P.Eng.

Reviewed By:
Mark McCalla, P.Geo.

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, Ontario K2B 8H6
t: +1.613.688.1899
f: +1.613.225.7337

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Executive Summary

EXP Services Inc. (EXP) was retained by Katasa Group to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 770 and 774 Bronson Avenue and 557 Cambridge Street in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was occupied by a vacant former gas station and parking lot.

The objective of the Phase Two ESA investigation was to assess the conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. The most recent use of the property was for commercial, and the proposed future property use will be residential and commercial. Consequently, in accordance with Regulation 153/04, as amended, a Record of Site Condition (RSC) must be filed

The Phase Two property has the municipal addresses of 770 Bronson Avenue, 774 Bronson Avenue, and 557 Cambridge Street in Ottawa, Ontario. The Phase Two property is irregular is shape and has a total area of approximately 0.45 hectares.

The property at 770 Bronson Avenue is occupied by a vacant gas station. It is legally described as Part Lots 1 and 2, Registered Plan 28, City of Ottawa. The property identification number (PIN) is 04103-0205. The property at 774 Bronson Avenue is vacant and currently used as a parking lot. It is legally described as Lots 3 and 4, Registered Plan 28, City of Ottawa. The PIN is 04103-0125. The property at 557 Cambridge Street is vacant and currently used as a parking lot. It is legally described as Lot 37 and Part Lot 38, Registered Plan 28, Part 4 Registered Plan 5R14360, City of Ottawa. The PIN is 04103-0215.

The most recent use of the property was commercial. The proposed future use of the property is residential and commercial. A new building will be constructed at the Phase Two property. The building will have one or two levels of underground parking, ground level commercial space, and upper-level residential units. Since the past use of the property was commercial land use, an RSC must be filed, per Ontario Regulation 153/04.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area has a well that is being used or is intended for use as a source of potable water. Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

Based on the Phase Two ESA investigation, the Phase Two property is a shallow soil property as defined in Section 43.1 of the regulation. There are no waterbodies on the Phase Two property, and the Phase Two is not located within 30 m of a waterbody.

Beneath any fill, the surficial geology of the subject site is characterised by Champlain Sea deposits of plain till. The bedrock geology underlying the site consists of limestone with some shaley partings of the Ottawa Formation. The depth to rock in the area is typically 5 m below surface grade or less. Based on previous investigation, bedrock was identified between 0.8 and 3.1 metres below ground surface the Phase Two property. Topographically, the Phase Two study area slopes towards the southwest.

The groundwater flow direction is anticipated to be to the southeast towards Dow's Lake on the south part of the Phase Two property and towards the north on the north part of the Phase Two property.

The Phase Two property, and surrounding area are serviced by municipal water, storm and sanitary sewers, natural gas, hydro and telecommunication. There were no utilities present on the south part of the Phase Two property.

Since the water table is within the bedrock, the presence of utilities is not expected to affect possible migration of contaminants once buildings are constructed on the Phase Two property.

The following on-site potentially contaminating activities (PCA) were identified:

- **PCA 2** – 770 Bronson Avenue (Phase Two property) – Former gas station with three USTs, former garage (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks, PCA 10 – Commercial Autobody Shops);
- **PCA 7** – 774 Bronson Avenue (Phase Two property) – Former heating oil AST in the north residential building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 8** – 774 Bronson Avenue (Phase Two property) – Former heating oil AST in the south residential building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 9** – 774 Bronson Avenue (Phase Two property) – Former heating oil AST in the commercial building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 10** – 770 Bronson Avenue (Phase Two property) – Former heating oil AST in the west side of the garage building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 11** – 557 Cambridge Street (Phase Two property) – Former heating oil AST in the north office building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 12** – 557 Cambridge Street (Phase Two property) – Former heating oil AST in the middle office building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 13** – 557 Cambridge Street (Phase Two property) – Former heating oil AST in the south office building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 15** – 770 Bronson Avenue (Phase Two property) – Former motor oil AST along the west interior wall of the garage building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 16** – 770 Bronson Avenue (Phase Two property) – Former waste oil AST along the south exterior wall of the garage building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 17** – Entire Phase Two property – Impacted fill material identified in previous investigations (PCA #30 – Importation of Fill Material of Unknown Quantity);
- **PCA 18** – 557 Cambridge Avenue (Phase Two property) – Western part of the site was historically used for wood treating (PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products).
- **PCA 20** – 557 Cambridge Street (Phase Two property) – Former contractor's yard (PCA #Other – Registered waste generator).

By definition, all of the above PCA have resulted in APEC on the Phase Two property.

The following PCA have been identified in the Phase Two study area:

- **PCA 1** – Between Cambridge Street and Dows Lake (150 m southwest) – Rail spur lines at the Fraserfield Lumber Yard in 1912 and 1922 (PCA #46 – Rail Yards, Tracks and Spurs; PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products);
- **PCA 3** – 735 Carling Avenue (225 m west) – Former gas station with three USTs (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 4** – 400 Bell Street (125 m west) – Former garage with UST (PCA 10 – Commercial Autobody Shops, PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);

- **PCA 5** – 277 Carling Avenue (40 m northeast) – Hydro sub station (PCA #55 – Transformer Manufacturing, Processing and Use);
- **PCA 6** – 786-788 Bronson Street (20 m south) – Former dry cleaner (PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used);
- **PCA 14** – 784 Bronson Avenue (15 m south) – Former commercial printing operation (PCA #Other – Commercial printing operation).
- **PCA 19** – 748 Bronson Avenue (now 265 Carling Avenue) (60 m north) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks).

The former gas station at 735 Carling Avenue, the former lumber yard and rail spur lines at Fraserfield Lumber yard, and the former garage at 400 Bell Street were all located over 150 m from the Phase Two property. Due to the separation distance from the Phase Two property, these operations were not considered to result in APECs.

The former dry-cleaning operation and commercial printing operation were located approximately 20 m and 40 m south of the Phase Two property respectively. Previous investigations at the Phase Two property have identified the groundwater flow on the south part of the Phase Two property to be to the southwest. Therefor, these operations were located cross-gradient of the Phase Two property and was determined not to result in APECs.

The former gas station at 265 Carling Avenue and the hydro substation at 277 Carling Avenue are located approximately 60 m north and 40 m northeast respectively. Previous investigations at the Phase Two property have identified the groundwater flow on the north part of the Phase Two property to be to the north. Therefor, these operations were located cross/down-gradient of the Phase Two property and was determined not to result in APECs.

Therefore, none of the off-site APEC were determined to result in APECs.

Ontario Regulation 153/04 defines an APEC as an area on a property where one or more contaminants are potentially present. The following APEC were identified on the Phase Two property, as shown in Table EX-1:

Table EX-1: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
1. Former gas station at 770 Bronson Avenue	Northeast part of the Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC	Soil and groundwater
2. Former automotive garage at 770 Bronson Avenue	Garage building footprint	PCA #10 – Commercial autobody shop	On-Site	BTEX, PHC, VOC	Soil and groundwater
3. Former heating oil AST at 770 Bronson Avenue	Along south exterior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
4. Former waste oil AST at 770 Bronson Avenue	Along south exterior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH, metals	Soil and groundwater

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
5. Former motor oil AST at 770 Bronson Avenue	Along west interior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC	Soil and groundwater
6. Former heating oil AST in the north residential building at 774 Bronson Avenue	Former building footprint at northeast corner of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
7. Former heating oil AST in the south residential building at 774 Bronson Avenue	Former building footprint on east side of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
8. Former heating oil AST in the commercial building at 774 Bronson Avenue	Former building footprint at southeast corner of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
9. Former heating oil AST in the south commercial building at 557 Cambridge Street	Former building footprint at southwest corner of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
10. Former heating oil AST in the centre commercial building at 557 Cambridge Street	Former building footprint on the west side of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
11. Former heating oil AST in the north commercial building at 557 Cambridge Street	Former building footprint at northwest corner of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
12. Poor quality fill at 557 Cambridge Street and 774 Bronson Avenue	Entire Phase One property	PCA #30 – Importation of Fill Material of Unknown Quality	On-site	BTEX, PHC, PAH, metals	Soil

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
13. Former contractors' yard at 557 Cambridge Street	West part of the Phase One property	PCA #Other – Registered waste generator	On-site	BTEX, PHC	Soil and groundwater
14. Former treated lumber storage at 557 Cambridge Street	West part of the Phase One property	PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	On-site	PAH	Soil

In 2015, five boreholes were advanced at 770 Bronson Avenue, all of which were completed as monitoring wells. All of the wells were installed in the bedrock, which was present between 2.4 and 3.1 metres below ground surface (m bgs). Surficial soil generally consisted of sand and gravel fill material. No native soil was identified on the site. Groundwater was not present in the overburden. The groundwater flow direction was observed to be to the north towards Carling Avenue. It was inferred that utilities along Carling Avenue were influencing the direction of local groundwater flow.

Soil and groundwater samples were submitted for analysis of volatile organic compounds (VOC), petroleum hydrocarbons (PHC), and polycyclic aromatic hydrocarbons (PAH). Soil and groundwater samples were compared to the Table 3 site condition standards (SCS) for non-potable groundwater and residential land use.

One of the soil samples exceeded Table 3 SCS for PHC F3. The remainder of the soil samples and all of the groundwater samples were within the Table 3 SCS. Approximately 150 m^3 of PHC impacted soil was identified in the northeast corner of the site. No impact was identified below 1.5 m bgs, and no groundwater contamination was identified. It was recommended that the impacted soil be excavated and sent to a landfill.

In 2016, six boreholes were advanced at 557 Cambridge Street and 774 Bronson Avenue, four of which were completed as monitoring wells. All of the wells were installed as nested wells. Surficial geology generally consisted of 1 to 2 metres of fill material overlying limestone bedrock. Bedrock was encountered in all boreholes between 0.8 and 2.2 m bgs. Two hydrogeologic units were identified at the site, the shallow overburden/weather bedrock aquifer, and the deeper bedrock aquifer. Groundwater flow direction was determined to be to the southwest in both the shallow and deep aquifer.

Soil and groundwater were submitted for analysis of VOC, PHC, PAH, and/or metals. Soil and groundwater results were compared to the Table 7 SCS for shallow bedrock and non-potable groundwater and residential land use.

Four of the soil samples exceeded the Table 7 SCS for metals (lead, nickel, and mercury), cyanide, and/or select PAH. One of the groundwater samples slightly exceeded the Table 7 SCS for benzene. However, this location was subsequently re-sampled twice, and benzene was below the detection limits in both samples. Chloroform exceedances were detected in all five of the monitoring wells installed in the bedrock.

To facilitate bedrock drilling municipal water was likely used to cool the drill bits. Chloroform is generated at municipal water treatment plants when chlorine is used to kill bacteria in the water. Its is likely that the source of the chloroform was the municipal water used for drilling.

On August 11, 2022, EXP conducted an additional round of groundwater sampling of the monitoring wells at 770 Bronson Avenue. None of the monitoring wells installed at 774 Bronson Avenue or 557 Cambridge Street were still present. Four groundwater samples, plus a field duplicate, were submitted for analysis of PHC, VOC, and PAH. BH15-4 could not be sampled due to insufficient sample volume. All of the samples were within the Tables 7 SCS for all parameters analysed.

During the Golder March 2015 investigation, eight soil samples were submitted for analysis of PHC, VOC and PAH. All of the samples met the Table 7 SCS for all parameters analysed, with the exception of one sample from BH15-4 which exceeded the SCS for PHC F3. The sample which exceeded the Table 7 SCS was taken from 0.3 to 0.8 m bgs. A sample taken from the same borehole, but deeper (1.5 to 2.1 m bgs) met the Table 7 SCS. It was inferred that the source of the exceedance was likely a surface spill.

During the WSP January 2016 investigation, three soil samples and a duplicate were submitted for analysis of PHC and VOC, PAH, and metals. Two samples (BH15-4 and BH15-6) exceeded the SCS for lead, one sample (BH15-5) exceeded the SCS for nickel, and one sample (BH15-4) exceeded the SCS for mercury and cyanide. One sample (BH15-1) exceeded the SCS for multiple PAHs. The remaining samples met the Table 7 SCS for all parameters analysed.

All groundwater samples were collected via a low flow sampling technique. Water quality parameters (such as water level, temperature, dissolved oxygen, conductivity, salinity, pH, oxygen reduction potential and turbidity) were monitored in order to ensure that the samples collected were representative of actual groundwater conditions.

In March 2015, groundwater sampling was conducted at 770 Bronson Avenue by Golder. Four groundwater samples (BH15-1 to BH15-4), and a duplicate were collected and submitted for analysis of PHC, VOC, and PAH. A groundwater sample was not collected from BH15-5, as that well was installed for geotechnical/hydrogeological purposes. One of the groundwater samples (BH15-2) exceeded the Table 7 SCS for benzene, and three groundwater samples (BH15-1, BH15-2, BH15-3) and the duplicate exceeded the Table 7 SCS for chloroform.

An additional round of groundwater sampling was conducted at these wells in August 2022 by EXP. Four groundwater samples (BH15-1, BH15-2, BH15-3, and BH15-5) and a duplicate were submitted for analysis of PHC, VOC and PAH. All of the samples were within the Tables 7 SCS for all parameters analysed.

In January, February and March 2016, groundwater sampling was conducted by WSP at 557 Cambridge Street and 774 Bronson Avenue. Groundwater sampling was conducted over multiple days due to limited sampled volume. Groundwater samples were submitted for analysis of BTEX, PHC, VOC, PAH, and/or metals. Additional samples were submitted for analysis of VOC to address chloroform exceedances present in the first round of groundwater sampling.

Benzene was detected in the initial groundwater sample from BH15-3A. As the exceedance was very close to the Table 7 SCS criteria for benzene (0.83 ug/L vs 0.5 ug/L), and additional two rounds of samples were conducted at this location. Neither of the subsequent groundwater samples from BH15-3A had

All of the chloroform exceedances were detected in monitoring wells installed in the bedrock. To facilitate drilling in the bedrock, municipal water was used to cool the drill bits. Chloroform is generated at municipal water treatment plants when chlorine is used to kill bacteria in the water. In accordance with Regulation 153/04 it is the opinion of the Qualified Person that the source of chloroform in these monitoring wells. In addition, subsequent groundwater sampling events at all of the wells with chloroform exceedances were within the Table 7 SCS.

Therefore, in accordance with Section 49.1 of Regulation 153/04, chloroform is not considered to exceed the SCS. Analytical results are included in Tables 4 to 6 in Appendix E and are shown in plan view on Figures 13 to 15 and on cross-sections on Figures 16 to 18 in Appendix A.

PAH and metals impacted soil has been identified on the south part of the Phase Two property. As there were no groundwater exceedances identified on the Phase Twp property, the contamination does not appear to be migrating.

It is recommended that the impacted soil be removed from the Phase Two property when the property is re-developed.

The Qualified Person can confirm that the Phase Two Environmental Site Assessment was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices.

This executive summary is a brief synopsis of the report and should not be read in lieu of reading the report in its entirety.

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1.0 Introduction

EXP Services Inc. (EXP) was retained by Katasa Group to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 770 and 774 Bronson Avenue and 557 Cambridge Street in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was occupied by a vacant former gas station and parking lot.

The objective of the Phase Two ESA investigation was to assess the conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. The most recent use of the property was for commercial, and the proposed future property use will be residential and commercial. Consequently, in accordance with Regulation 153/04, as amended, a Record of Site Condition (RSC) must be filed.

This report has been prepared in accordance with the Phase Two ESA standard as defined by Ontario Regulation 153/04 (as amended), and in accordance with generally accepted professional practices. Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

1.1 Site Description

The Phase Two property has the municipal addresses of 770 Bronson Avenue, 774 Bronson Avenue, and 557 Cambridge Street in Ottawa, Ontario. The Phase Two property is irregular is shape and has a total area of approximately 0.45 hectares. A Site Location Plan is provided as Figure 1 in Appendix A.

The property at 770 Bronson Avenue is occupied by a vacant gas station. It is legally described as Part Lots 1 and 2, Registered Plan 28, City of Ottawa. The property identification number (PIN) is 04103-0205.

The property at 774 Bronson Avenue is vacant and currently used as a parking lot. It is legally described as Lots 3 and 4, Registered Plan 28, City of Ottawa. The PIN is 04103-0125.

The property at 557 Cambridge Street is vacant and currently used as a parking lot. It is legally described as Lot 37 and Part Lot 38, Registered Plan 28, Part 4 Registered Plan 5R14360, City of Ottawa. The PIN is 04103-0215.

Table 1.1: Site Identification Details

Civic Address	770 and 774 Bronson Avenue, 557 Cambridge Street, Ottawa, Ontario
Current Land Use	Commercial
Proposed Future Land Use	Commercial and Residential
Property Identification Number	04103-0205, 04103-0125, 04103-0215
UTM Coordinates	NAD83 18T 445213 m E and 5027661 m N
Site Area	0.45 hectares
Property Owner	10467855 Canada Inc.

A survey plan of the Phase Two property was completed by Annis, O'Sullivan, and Vollebekk Ltd. in November 2015. A copy of the survey plan is provided in Appendix B.

1.2 Property Ownership

The registered owner of the Phase One property is 10467855 Canada Inc. Authorization to proceed with this investigation on behalf of the property owner was provided by Ms. Tanya Chowieri, Acquisition and Project Development for Katasa Groupe. Contact information is 301-69 rue Jean-Proulx, Gatineau, Quebec, J8Z 1W2.

1.3 Current and Proposed Future Use

The most recent use of the property was commercial. The proposed future use of the property is residential and commercial. A new building will be constructed at the Phase Two property. The building will have one or two levels of underground parking, ground level commercial space, and upper-level residential units. Since the past use of the property was commercial land use, an RSC must be filed, per Ontario Regulation 153/04.

1.4 Applicable Site Condition Standards

Analytical results obtained for soil and groundwater samples were compared to Site Condition Standards (SCS) established under subsection 169.4(1) of the Environmental Protection Act, and presented in the document entitled *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, 2011. This document provides tabulated background SCS (Table 1) applicable to environmentally sensitive sites and effects-based generic SCS (Tables 2 to 9) applicable to non-environmentally sensitive sites. The effects-based SCS (Tables 2 to 9) are protective of human health and the environment for different groundwater conditions (potable and non-potable), land use scenarios (residential, parkland, institutional, commercial, industrial, community and agricultural/other), soil texture (coarse or medium/fine) and restoration depth (full or stratified).

Table 1 to 9 SCS are summarized as follows:

- Table 1 – applicable to sites where background concentrations must be met (full depth), such as sensitive sites where site-specific criteria have not been derived
- Table 2 – applicable to sites with potable groundwater and full depth restoration
- Table 3 – applicable to sites with non-potable groundwater and full depth restoration
- Table 4 – applicable to sites with potable groundwater and stratified restoration
- Table 5 – applicable to sites with non-potable groundwater and stratified restoration
- Table 6 – applicable to sites with potable groundwater and shallow soils (bedrock encountered at depths of 2 metres or less across one-third or more of the site)
- Table 7 – applicable to sites with non-potable groundwater and shallow soils (bedrock encountered at depths of 2 metres or less across one-third or more of the site)
- Table 8 – applicable to sites with potable groundwater and that are within 30 m of a water body
- Table 9 – applicable to sites with non-potable groundwater and that are within 30 m of a water body

Application of the generic or background SCS to a specific site is based on a consideration of site conditions related to soil pH, thickness and extent of overburden material, and proximity to an area of environmental sensitivity or of natural significance. For some chemical parameters, consideration is also given to soil textural classification with SCS having been derived for both coarse and medium-fine textured soil conditions.

For assessment purposes, EXP selected the 2011 Table 7 SCS in a non-potable groundwater condition for residential/parkland/institutional property use.

The selection of these categories was based on the following factors:

- Bedrock is less than 2 metres below grade across the subject property;
- The Phase Two property is not located within 30 m of a waterbody;
- The Phase Two property is not located within an area of natural significance, does not include nor is adjacent to an area of natural significance, and does not include land that is within 30 metres of an area of natural significance;
- Potable water for the Phase Two property is provided by the City of Ottawa through its water distribution system;
- The Phase Two property is not located in an area designated in a municipal official plan as a well-head protection area;
- The proposed building is planned for residential and commercial use; and
- It is the opinion of the Qualified Person who oversaw this work that the Phase Two property is not a sensitive site.

2.0 Background Information

2.1 Physical Setting

The Phase Two property has the municipal addresses 770 and 774 Bronson Avenue, and 557 Cambridge Street in Ottawa, Ontario. The Phase Two property is located in a residential/commercial area near the intersection of Carling Avenue and Bronson Avenue. The Phase Two property is irregular in shape has an area of approximately 0.45 hectares. At the time of the current investigation, the north part of the property was occupied by a vacant former garage, and the south part of the property was a parking lot. A site plan showing the Phase Two property is presented as Figure 2 in Appendix A.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area have a well that is being used or is intended for use as a source of potable water. Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

Based on the Phase Two ESA investigation, the Phase Two property is a shallow soil property as defined in Section 43.1 of the regulation. There are no waterbodies on the Phase Two property, and the Phase Two is not located within 30 m of a waterbody.

Beneath any fill, the surficial geology of the subject site is characterised by Champlain Sea deposits of plain till. The bedrock geology underlying the site consists of limestone with some shaley partings of the Ottawa Formation. The depth to rock in the area is typically 5 m below surface grade or less. Based on previous investigation, bedrock was identified between 0.8 and 3.1 metres below ground surface the Phase Two property. Topographically, the Phase Two study area slopes towards the southwest.

The groundwater flow direction is anticipated to be to the southeast towards Dow's Lake on the south part of the Phase Two property and towards the north on the north part of the Phase Two property.

2.2 Past Investigations

EXP prepared a report entitled *Phase One Environmental Site Assessment, 770 and 774 Bronson Avenue and 557 Cambridge Street, Ottawa, Ontario,* dated September 22, 2022. Based on the results of the Phase One ESA, EXP identified fourteen areas of potential environmental concern (APEC) within the Phase One study area. A summary is provided in Table 2.1.

Table 2.1: Findings of Phase One ESA

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
1. Former gas station at 770 Bronson Avenue	Northeast part of the Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC	Soil and groundwater
2. Former automotive garage at 770 Bronson Avenue	Garage building footprint	PCA #10 – Commercial autobody shop	On-Site	BTEX, PHC, VOC	Soil and groundwater
3. Former heating oil AST at 770 Bronson Avenue	Along south exterior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
4. Former waste oil AST at 770 Bronson Avenue	Along south exterior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH, metals	Soil and groundwater
5. Former motor oil AST at 770 Bronson Avenue	Along west interior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC	Soil and groundwater
6. Former heating oil AST in the north residential building at 774 Bronson Avenue	Former building footprint at northeast corner of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
7. Former heating oil AST in the south residential building at 774 Bronson Avenue	Former building footprint on east side of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
8. Former heating oil AST in the commercial building at 774 Bronson Avenue	Former building footprint at southeast corner of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
9. Former heating oil AST in the south commercial building at 557 Cambridge Street	Former building footprint at southwest corner of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
10. Former heating oil AST in the centre commercial building at 557 Cambridge Street	Former building footprint on the west side of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
11. Former heating oil AST in the north commercial building at 557 Cambridge Street	Former building footprint at northwest corner of Phase One property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
12. Poor quality fill at 557 Cambridge Street and 774 Bronson Avenue	Entire Phase One property	PCA #30 – Importation of Fill Material of Unknown Quality	On-site	BTEX, PHC, PAH, metals	Soil
13. Former contractors' yard at 557 Cambridge Street	West part of the Phase One property	PCA #Other – Registered waste generator	On-site	BTEX, PHC	Soil and groundwater
14. Former treated lumber storage at 557 Cambridge Street	West part of the Phase One property	PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	On-site	PAH	Soil

The locations of the APEC are shown on Figures 2 and 3 in Appendix A.

The Phase One ESA was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices. A copy of the Phase One conceptual site model is provided as Figure 3 in Appendix A.

In 2015, five boreholes were advanced at 770 Bronson Avenue, all of which were completed as monitoring wells. All of the wells were installed in the bedrock, which was present between 2.4 and 3.1 metres below ground surface (m bgs). Surficial soil generally consisted of sand and gravel fill material. No native soil was identified on the site. Groundwater was not present in the overburden. The groundwater flow direction was observed to be to the north towards Carling Avenue. It was inferred that utilities along Carling Avenue were influencing the direction of local groundwater flow.

Eight soil samples and four groundwater samples were submitted for analysis of volatile organic compounds (VOC), petroleum hydrocarbons (PHC), and polycyclic aromatic hydrocarbons (PAH). Soil and groundwater samples were compared to the Table 3 site condition standards (SCS) for non-potable groundwater and residential land use.

One of the soil samples exceeded Table 3 SCS for PHC F3. The remainder of the soil samples and all of the groundwater samples were within the Table 3 SCS. Approximately 150 m^3 of PHC impacted soil was identified in the northeast corner of the site. No impact was identified below 1.5 m bgs, and no groundwater contamination was identified. It was recommended that the impacted soil be excavated and sent to a landfill.

In 2016, six boreholes were advanced at 557 Cambridge Street and 774 Bronson Avenue, four of which were completed as monitoring wells. All of the wells were installed as nested wells. Surficial geology generally consisted of 1 to 2 metres of fill material overlying limestone bedrock. Bedrock was encountered in all boreholes between 0.8 and 2.2 m bgs. Two hydrogeologic units were identified at the site, the shallow overburden/weather bedrock aquifer, and the deeper bedrock aquifer. Groundwater flow direction was determined to be to the southwest in both the shallow and deep aquifer.

Six soil samples and eight groundwater samples were submitted for analysis of VOC, PHC, PAH, and/or metals. Soil and groundwater results were compared to the Table 7 SCS for shallow bedrock and non-potable groundwater and residential land use.

Four of the soil samples exceeded the Table 7 SCS for metals (lead, nickel, and mercury), cyanide, and/or select PAH. One of the groundwater samples slightly exceeded the Table 7 SCS for benzene. However, this location was subsequently re-sampled twice, and benzene was below the detection limits in both samples. Chloroform exceedances were detected in all five of the monitoring wells installed in the bedrock.

To facilitate bedrock drilling municipal water was likely used to cool the drill bits. Chloroform is generated at municipal water treatment plants when chlorine is used to kill bacteria in the water. Its is likely that the source of the chloroform was the municipal water used for drilling.

3.0 Scope of the Investigation

3.1 Overview of Site Investigation

The objective of the Phase Two ESA was to assess the quality of soil and groundwater on the Phase Two property.

The most recent use of the property was commercial. The proposed future use of the property is residential and commercial. Since the past use of the property was commercial land use, a Record of Site Condition (RSC) must be filed, per Ontario Regulation 153/04.

Previous investigations consisted of drilling programs to evaluate soil and groundwater conditions at the subject property. EXP's investigation consisted of groundwater sampling of the existing wells at 770 Bronson Avenue. No monitoring wells were present at the 557 Cambridge Street and 774 Bronson Avenue parts of the Phase Two property.

3.2 Scope of Work

The scope of work for the Phase Two ESA was as follows:

- Review previous Reports for Phase II ESA investigations conducted at the Phase Two property;
- Sample the five existing monitoring wells are 770 Bronson Avenue;
- Submit groundwater samples for laboratory analysis of benzene, toluene, ethylbenzene, xylenes (BTEX), petroleum hydrocarbon (PHC) fractions F1 to F4, volatile organic compounds (VOC), and polycyclic aromatic hydrocarbons (PAH);
- Comparing the results of the soil and groundwater chemical analyses to applicable criteria, as set out by the Ontario Ministry of the Environment, Conservation and Parks (MECP);
- Preparing a report summarizing the results of the assessment activities.

This report has been prepared in accordance with the Phase Two ESA standard as defined by Ontario Regulation 153/04 (as amended), and in accordance with generally accepted professional practices. Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

3.3 Media Investigated

The Phase Two ESA included the investigation of soil and groundwater on the Phase Two property. There are no waterbodies on the Phase Two property, therefore sediment sampling was not required.

The contaminants of potential concern (COPC) identified in the Phase One ESA were identified as target parameters for this Phase Two ESA. The APEC and COPC identified in the Phase One ESA are outlined in Section 2.2.

3.4 Phase One Conceptual Site Model

The Phase One conceptual site model (CSM) was developed by considering the following physical characteristics and pathways. The CSM showing the topography of the site, inferred groundwater flow, general site features, APEC, and PCA is shown in Figures 2 and 3 in Appendix A.

3.4.1 Buildings and Structures

The Phase Two property is occupied by a single-storey, slab on grade building that formerly operated as a gas station, then a garage. The building was vacant at the time of the investigation. No other buildings were present on the Phase Two property.

3.4.2 Water Bodies and Groundwater Flow Direction

There are no water bodies on the subject site. The closest waster body is Dow's Like, located approximately 370 m southwest of the Phase Two property.

Topographically, the Phase Two property is relatively flat. The surrounding area slopes down towards Dow's Lake. The groundwater flow at the Phase Two property is anticipated to be southwest due to the proximity to Dow's Lake.

3.4.3 Areas of Natural Significance

There are no ANSI within the Phase Two study area.

3.4.4 Water Wells

There are no potable water wells within the Phase Two study area.

3.4.5 Potentially Contaminating Activity

The following on-site potentially contaminating activities (PCA) were identified:

- **PCA 2** – 770 Bronson Avenue (Phase Two property) – Former gas station with three USTs, former garage (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks, PCA 10 – Commercial Autobody Shops);
- **PCA 7** – 774 Bronson Avenue (Phase Two property) – Former heating oil AST in the north residential building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 8** – 774 Bronson Avenue (Phase Two property) – Former heating oil AST in the south residential building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 9** – 774 Bronson Avenue (Phase Two property) – Former heating oil AST in the commercial building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 10** – 770 Bronson Avenue (Phase Two property) – Former heating oil AST in the west side of the garage building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 11** – 557 Cambridge Street (Phase Two property) – Former heating oil AST in the north office building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 12** – 557 Cambridge Street (Phase Two property) – Former heating oil AST in the middle office building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 13** – 557 Cambridge Street (Phase Two property) – Former heating oil AST in the south office building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 15** – 770 Bronson Avenue (Phase Two property) – Former motor oil AST along the west interior wall of the garage building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 16** – 770 Bronson Avenue (Phase Two property) – Former waste oil AST along the south exterior wall of the garage building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);

- **PCA 17** – Entire Phase Two property – Impacted fill material identified in previous investigations (PCA #30 – Importation of Fill Material of Unknown Quantity);
- **PCA 18** – 557 Cambridge Avenue (Phase Two property) – Western part of the site was historically used for wood treating (PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products).
- **PCA 20** – 557 Cambridge Street (Phase Two property) – Former contractor's yard (PCA #Other – Registered waste generator).

By definition, all of the above PCA have resulted in APEC on the Phase Two property.

The following PCA have been identified in the Phase Two study area:

- **PCA 1** – Between Cambridge Street and Dows Lake (150 m southwest) – Rail spur lines at the Fraserfield Lumber Yard in 1912 and 1922 (PCA #46 – Rail Yards, Tracks and Spurs; PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products);
- **PCA 3** – 735 Carling Avenue (225 m west) – Former gas station with three USTs (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 4** – 400 Bell Street (125 m west) – Former garage with UST (PCA 10 – Commercial Autobody Shops, PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 5** – 277 Carling Avenue (40 m northeast) – Hydro sub station (PCA #55 – Transformer Manufacturing, Processing and Use);
- **PCA 6** – 786-788 Bronson Street (20 m south) – Former dry cleaner (PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used);
- **PCA 14** – 784 Bronson Avenue (15 m south) – Former commercial printing operation (PCA #Other – Commercial printing operation).
- **PCA 19** – 748 Bronson Avenue (now 265 Carling Avenue) (60 m north) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks).

The former gas station at 735 Carling Avenue, the former lumber yard and rail spur lines at Fraserfield Lumber yard, and the former garage at 400 Bell Street were all located over 150 m from the Phase Two property. Due to the separation distance from the Phase Two property, these operations were not considered to result in APECs.

The former dry-cleaning operation and commercial printing operation were located approximately 20 m and 40 m south of the Phase Two property respectively. Previous investigations at the Phase Two property have identified the groundwater flow on the south part of the Phase Two property to be to the southwest. Therefor, these operations were located cross-gradient of the Phase Two property and was determined not to result in APECs.

The former gas station at 265 Carling Avenue and the hydro substation at 277 Carling Avenue are located approximately 60 m north and 40 m northeast respectively. Previous investigations at the Phase Two property have identified the groundwater flow on the north part of the Phase Two property to be to the north. Therefor, these operations were located cross/down-gradient of the Phase Two property and was determined not to result in APECs.

Therefore, none of the off-site APEC were determined to result in APECs.

3.4.6 Areas of Potential Environmental Concern

The APEC identified are summarized in Table 3.1.

Table 3.1: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
1. Former gas station at 770 Bronson Avenue	Northeast part of the Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC	Soil and groundwater
2. Former automotive garage at 770 Bronson Avenue	Garage building footprint	PCA #10 – Commercial autobody shop	On-Site	BTEX, PHC, VOC	Soil and groundwater
3. Former heating oil AST at 770 Bronson Avenue	Along south exterior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
4. Former waste oil AST at 770 Bronson Avenue	Along south exterior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH, metals	Soil and groundwater
5. Former motor oil AST at 770 Bronson Avenue	Along west interior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC	Soil and groundwater
6. Former heating oil AST in the north residential building at 774 Bronson Avenue	Former building footprint at northeast corner of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
7. Former heating oil AST in the south residential building at 774 Bronson Avenue	Former building footprint on east side of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
8. Former heating oil AST in the commercial building at 774 Bronson Avenue	Former building footprint at southeast corner of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
9. Former heating oil AST in the south commercial building at 557 Cambridge Street	Former building footprint at southwest corner of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
10. Former heating oil AST in the centre commercial building at 557 Cambridge Street	Former building footprint on the west side of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
11. Former heating oil AST in the north commercial building at 557 Cambridge Street	Former building footprint at northwest corner of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
12. Poor quality fill at 557 Cambridge Street and 774 Bronson Avenue	Entire Phase Two property	PCA #30 – Importation of Fill Material of Unknown Quality	On-site	BTEX, PHC, PAH, metals	Soil
13. Former contractors' yard at 557 Cambridge Street	West part of the Phase Two property	PCA #Other – Registered waste generator	On-site	BTEX, PHC	Soil and groundwater
14. Former treated lumber storage at 557 Cambridge Street	West part of the Phase Two property	PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	On-site	PAH	Soil

3.4.7 Underground Utilities

The Phase Two property, and surrounding area are serviced by municipal water, storm and sanitary sewers, natural gas, hydro and telecommunication. There were no utilities present on the south part of the Phase Two property.

Since the water table is within the bedrock, the presence of utilities is not expected to affect possible migration of contaminants once buildings are constructed on the Phase Two property.

3.4.8 Subsurface Stratigraphy

Beneath any fill, the surficial geology of the subject site is characterised by Champlain Sea deposits of plain till. The bedrock geology underlying the site consists of limestone with some shaley partings of the Ottawa Formation. The depth to rock in the area is typically 5 m below surface grade or less. Based on previous investigation, bedrock was identified between 0.8 and 3.1 metres below ground surface the Phase Two property. Topographically, the Phase Two study area slopes towards the southwest.

3.4.9 Uncertainty Analysis

The CSM is a simplification of reality, which aims to provide a description and assessment of any areas where potentially contaminating activity that occurred within the Phase Two study area may have adversely affected the Phase Two property. All information collected during this investigation, including records, interviews, and site reconnaissance, has contributed to the formulation of the CSM.

Information was assessed for consistency, however EXP has confirmed neither the completeness nor the accuracy of any of the records that were obtained or of any of the statements made by others. All reasonable inquiries to obtain accessible information were made, as required by Schedule D, Table 1, Mandatory Requirements for Phase Two Environmental Site Assessment Reports. The CSM reflects our best interpretation of the information that was available during this investigation.

3.5 Deviations from Sampling and Analysis Plan

The field investigative and sampling program was carried out following the requirements of the Phase Two property, as described in Section 4.

The SAAPs for the EXP, Golder and WSP work programs are provided in Appendix C.

No significant deviations from the SAAP, as provided in Appendix C, were reported that affected the sampling and data quality objectives for the Phase Two property. During the August 2022 groundwater sampling event conducted by EXP, BH15-4 could not be sampled due to insufficient sample volume.

3.6 Impediments

No impediments were encountered during this investigation.

4.0 Investigation Method

4.1 General

The current investigation was performed following requirements given under Ontario Regulation 153/04 and in accordance with generally accepted professional practices.

4.2 Drilling

Previous site investigative activities consisted of the drilling of boreholes to facilitate the collection of soil samples for visual inspection and chemical analysis. The boreholes were instrumented with monitoring wells to facilitate the collection of groundwater samples. EXP did into oversee any drilling activities at the Phase Two property.

Prior to the commencement of drilling, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual borehole locations.

A drilling program was conducted at 770 Bronson Avenue in March 2015 under the supervision of Golder Associates. The drilling program was completed on March 24 and 25, 2015 by Marathon Drilling Ltd. (Marathon), a licensed well contractor. Marathon advanced four boreholes (BH15-1 to BH15-4) across the site, using a CCME track mounted drill. Boreholes were augured to refusal, then cored to depth. All of the boreholes were completed as monitoring wells. Bedrock was encountered between 2.4 and 3.1 metres below ground surface (m bgs) in all boreholes. On June 19, 2015, Golder installed and additional well (BH15-5) at 770 Bronson Avenue for geotechnical and hydrogeological site assessment.

A drilling program was conducted at 774 Bronson Avenue and 557 Cambridge Avenue in January 2016 under the supervision of WSP. The drilling program was completed January 11 to 13, 2016 by George Downing Estate Drilling (Downing), a licensed well contractor. Downing advanced six boreholes (BH15-1 to BH15-6) across the site using a CME 55 track mounted drill. Two of the boreholes were augured to refusal (BH15-1 and BH15-5). Four boreholes (BH15-2, BH15-3B, BH15-4, and BH-6) were augured to refusal, then cored to depth. Nested monitoring wells were installed in BH15-2, BH15-3, BH15-4, and BH15-6.

Field observations are documented on the borehole logs provided in Appendix D. The locations of the boreholes are shown on Figure 2 in Appendix A.

4.3 Soil Sampling

Soil samples identified for possible laboratory analysis were placed directly into pre-cleaned, laboratory-supplied glass sample jars/vials. Samples to be analysed for PHC fraction F1 and BTEX were collected using a soil core sampler and placed into vials containing methanol as a preservative. The jars and vials were sealed with Teflon-lined lids to minimize headspace and reduce the potential for induced volatilization during storage/transport prior to analysis. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory.

4.4 Field Screening Measurements

In March 2015, Golder completed soil sample field screening for VOCs using a MiniRae photo-ionization detector (PID). No significant measurable organic vapours were detected during screening.

In January 2016, WSP completed soil sample field screening for VOCs using an UltraRae 3000 PID.

4.5 Groundwater: Monitoring Well Installation

Monitoring wells were installed in general accordance with the Ontario Water Resources Act - R.R.O. 1990, Regulation 903 (as amended). EXP did not supervise the installation of any monitoring wells on the Phase Two property.

All five of the boreholes installed at 770 Bronson Avenue were completed as bedrock monitoring wells. The monitoring wells consisted of a 32- or 52-mm diameter Schedule 40 PVC screen and a 32- or 52-mm diameter Schedule 40 PVC riser. The annular space around the wells was backfilled with sand to an average height of 0.3 m above the top of the screen. All wells were completed with flushmount casings.

Four of the boreholes at 774 Bronson Avenue and 557 Cambridge Street were completed as nested monitoring wells. The shallow wells were identified as BH15-2A, BH15-3A, BH15-4A, and BH15-6A. The deeper monitoring wells were identified as BH15-2B, BH15-3B, BH15-4B, and BH15-6B. The monitoring wells consisted of a 32- or 52-mm diameter Schedule 40 PVC screen and a 32- or 52-mm diameter Schedule 40 PVC riser. The annular space around the wells was backfilled with sand to an average height of 0.3 m above the top of the screen. All wells were completed with stickup casings.

Following installation, all of the monitoring wells were developed by removing between three and ten well volumes using Waterra tubing and a foot valve.

Monitoring wells details are shown on the borehole logs provided in Appendix D.

4.6 Groundwater: Field Measurement and Water Quality Parameters

Field measurement of water quality parameters is described in Section 4.7.

4.7 Groundwater: Sampling

All groundwater samples were collected via a low flow sampling technique using a multi probe water quality meter. Prior to collecting the groundwater samples, water quality field parameters (turbidity, dissolved oxygen, conductivity, temperature, pH, and oxidation reduction potential) were monitored until stable readings were achieved to ensure that the samples collected were representative of actual groundwater conditions. These parameters are considered to be stable when three consecutive readings meet the following conditions:

- Turbidity: within 10% for values greater than 5 nephelometric turbidity units (NTU), or three values less than 5 NTU;
- Dissolved oxygen: within 10% for values greater than 0.5 mg/L, or three values less than 0.5 mg/L;
- Conductivity: within 3%;
- Temperature: ± 1°C;
- pH: ± 0.1 unit; and,
- Oxidation reduction potential: ±10 millivolts.

When stabilization occurs, equilibrium between groundwater within a monitor and the surrounding formation water is attained. As such, samples collected when stabilization occurs are considered to be representative of formation water.

The groundwater sampling during the completion of this Phase Two ESA was undertaken in general accordance with the SAAPs presented in Appendix C. The groundwater samples were placed in clean coolers containing ice packs prior to and during transportation to the laboratory. The samples were transported to the laboratory within 24 hours of collection with a chain of custody.

On March 27, 2015, Golder collected groundwater samples from the monitoring wells at 770 Bronson Avenue. Four groundwater samples, and a duplicate sample, were submitted for analysis of PHC, VOC, and PAH.

On January 19 and 21, February 15 and 23, and March 1, 2016, WSP collected groundwater samples from the monitoring wells at 774 Bronson Avenue and 557 Cambridge Street. A total of 20 samples and three supplicates were submitted for analysis of BTEX; seven samples and one duplicate were submitted for analysis of PHC; 19 samples and three duplicates were

submitted for analysis of VOC, seven samples and one duplicate were submitted for analysis of PAH, and eight samples and one duplicate were submitted for analysis of metals and inorganics.

On August 11, 2022, EXP conducted an additional round of groundwater sampling of the monitoring wells at 770 Bronson Avenue. None of the monitoring wells installed at 774 Bronson Avenue or 557 Cambridge Street were still present. Four groundwater samples, plus a field duplicate, were submitted for analysis of PHC, VOC, and PAH. BH15-4 could not be sampled due to insufficient sample volume.

4.8 Sediment: Sampling

There are no waterbodies present on the Phase Two property, therefore sediment sampling was not required.

4.9 Analytical Testing

The contracted laboratory selected to perform chemical analysis on all soil and groundwater samples collected by Golder Associates was AGAT.

The contracted laboratory selected to perform chemical analysis on all soil and groundwater samples collected by WSP was Maxxam Analytics Inc. (now Bureau Veritas Laboratories).

The contracted laboratory selected to perform chemical analysis on all groundwater samples collected by EXP was Caduceon Environmental Laboratories (Caduceon).

All contracted laboratories are accredited laboratories under the Standards Council of Canada/Canadian Association for Laboratory Accreditation in accordance with ISO/IEC 17025:1999- General Requirements for the Competence of Testing and Calibration Laboratories.

4.10 Residue Management

Soil cuttings and purge water from the Golder investigation were collected in sealed drums and stored on site for disposal by the property owner.

Soil cuttings and purge water from the WSP investigation were left on the subject site.

4.11 Elevation Surveying

The monitoring wells at 770 Bronson Avenue were surveyed by Golder on March 27, 2015, and July 6, 2015, relative to a geodetic reference. The monitoring wells at 774 Bronson Avenue and 557 Cambridge Street were surveyed by WSP relative to the northeast corner of the site.

4.12 Quality Assurance and Quality Control Measures

All soil and groundwater samples were placed in coolers containing ice packs prior to and during transportation to the contract laboratory, AGAT (Golder), Maxxam (WSP) and Caduceon (EXP). All laboratories are accredited to the ISO/IEC 17025:2005 standard - *General Requirements for the Competence of Testing and Calibration Laboratories*.

A QA/QC program was also implemented to ensure that the analytical results received are accurate and dependable. A QA/QC program is a system of documented checks that validate the reliability of the data. Quality Assurance is a system that ensures that quality control procedures are correctly performed and documented. Quality Control refers to the established procedures observed both in the field and in the laboratory, designed to ensure that the resulting end data meet intended quality objectives. The QA/QC program implemented by EXP incorporated the following components:

- Collecting and analysing field duplicate samples to ensure analytical precision;

- Using dedicated and/or disposable sampling equipment;
- Following proper decontamination protocols to minimize cross-contamination;
- Maintaining field notes and completing field forms to document field activities; and
- Using only laboratory-supplied sample containers and following prescribed sample protocols, including using proper preservation techniques, meeting sample hold times, and documenting sample transmission on chains of custody, to ensure the integrity of the samples is maintained.

The laboratories' QA/QC program involved the systematic analysis of control standards for the purpose of optimizing the measuring system as well as establishing system precision and accuracy and included calibration standards, method blanks, reference standards, spiked samples, surrogates and duplicates.

5.0 Review and Evaluation

5.1 Geology

A layer of asphalt approximately 100 mm thick was present at surface in all of the boreholes at 770 Bronson Avenue. In general, surficial geology at the site underlying the asphalt consisted of sand and gravel fill material overlying bedrock. Silty clay with trace gravel was encountered in one of the boreholes underlying the fill (BH15-3). Bedrock was encountered between 2.4 and 3.1 m bgs.

Soil conditions at 774 Bronson Avenue and 557 Cambridge Street generally consisted of sand and gravel fil with some silt and clay overlying bedrock. The fill material was noted to contain debris, including wood, ash, asphalt, and brick fragments. Bedrock was encountered between 1.2 and 2.2 m bgs.

A plan view showing cross-sections is provided as Figure 5 in Appendix A, while the Phase Two property geology is depicted in cross-sections on Figure 6 in Appendix A.

5.2 Groundwater: Elevations and Flow Direction

On March 27, 2015, Golder collected groundwater levels from the monitoring wells at 770 Bronson Avenue. The groundwater elevations ranged between 2.40 and 3.32 m bgs.

Groundwater monitoring and elevation data are provided below.

Table 5.1: Monitoring and Elevation Data - Golder 770 Bronson Avenue

Monitoring Well ID	Grade Elevation (masl)	Top of Casing Elevation (masl)	Screen Depth (mbgs)	Depth to LNAPL (mbgs)	Depth to Groundwater (mbTOC)	Groundwater Elevation (masl)
BH15-01	75.86	75.76	4.1 to 5.6	N/A	2.40	73.36
BH15-02	75.70	75.65	4.4 to 5.9	N/A	2.86	72.79
BH15-03	75.75	75.70	4.4 to 5.9	N/A	3.32	72.38
BH15-04	75.62	75.57	4.4 to 6.0	N/A	2.70	72.87
BH15-05	75.49	75.42	7.8 to 15.3	N/A	N/A	N/A

Notes: Elevations were measured to a geodetic datum
masl – metres above sea level
LNAPL – light non-aqueous phase liquid
mbTOC – metres below top of monitor casing
ppmv – parts per million by volume
ND – non-detectable
mbgs – metres below ground surface
N/A – not applicable

On March 1, 2016, WSP collected groundwater levels from the monitoring wells at 774 Bronson Avenue and 557 Cambridge Street. The groundwater elevations at ranged between 1.91 and 2.51 m bgs in the shallow wells, and between 2.98 and 7.63 in the deeper wells.

Groundwater monitoring and elevation data are provided below.

Table 5.2: Monitoring and Elevation Data – WSP 557 Cambridge Street and 774 Bronson Avenue

Monitoring Well ID	Grade Elevation (masl)	Top of Casing Elevation (masl)	Screen Depth (mbgs)	Depth to LNAPL (mbgs)	Depth to Groundwater (mbTOC)	Groundwater Elevation (masl)
Shallow Wells						
BH15-2A	75.60	N/A	2.1 to 4.0	N/A	2.46	73.14
BH15-3A	75.50	N/A	1.0 to 2.6	N/A	2.34	73.16
BH15-4A	74.50	N/A	2.2 to 3.7	N/A	1.91	72.59
BH15-6A	73.70	N/A	21. to 3.7	N/A	2.51	71.19
Deep Wells						
BH15-2B	75.60	N/A	6.3 to 7.8	N/A	2.98	72.62
BH15-3B	75.50	N/A	6.3 to 7.8	N/A	4.77	70.73
BH15-4B	74.50	N/A	5.9 to 7.4	N/A	6.94	67.56
BH15-6B	73.70	N/A	6.4 to 8.0	N/A	7.63	66.07

Notes: Elevations were measured to a geodetic datum
LNAPL – light non-aqueous phase liquid
ppmv – parts per million by volume
mbgs – metres below ground surface
masl – metres above sea level
mbTOC – metres below top of monitor casing
N/A – not applicable

Based on the groundwater elevations, a groundwater contour plan was prepared by EXP. The groundwater flow direction at 770 Bronson Avenue was determined to be to the north. The groundwater flow direction at 774 Bronson and 557 Cambridge Street was determined to be to the southwest. The groundwater contour plan is provided as Figure 4 in Appendix A.

EXP notes that groundwater levels depend on the size of the fractures that are intercepted as drilling progresses. Groundwater levels can also be influenced by seasonal changes, the presence of subsurface structures, or fill, however based on the presence of the water table within the bedrock, it is unlikely that any of these factors significantly impact the groundwater flow direction.

5.3 Groundwater: Hydraulic Gradients

Horizontal hydraulic gradients were estimated for the groundwater flow components identified in the bedrock aquifer.

The horizontal hydraulic gradient is calculated across the using the following equation:

$i = \Delta h / \Delta s$

Where,
i = horizontal hydraulic gradient;
Δh (m) = groundwater elevation difference; and,
Δs (m) = separation distance.

Based on the March 2015 groundwater elevations, the horizontal hydraulic gradient at 770 Bronson Avenue was calculated to be 0.03 m/m. Vertical hydraulic gradients were not calculated by Golder for 770 Bronson Avenue.

Based on the March 2016 groundwater elevations, the horizontal hydraulic gradient at 774 Bronson Avenue and 557 Cambridge Street was calculated to be 0.03 m/m in the overburden/weather bedrock, and 0.07 in the deeper bedrock wells. Nested monitoring wells were installed in four locations at 774 Bronson Avenue and 557 Cambridge Avenue. There a was a

downward vertical gradient identified at all four locations, with the largest vertical gradient present along the south property line.

5.4 Soil: Field Screening

The methodology for the collection of soil vapour concentration measurements is described in Section 4.4.

During the March 2015 investigation, organic vapours ranged from non-detectable to 3.0 ppm in samples collected from 770 Bronson Avenue.

During the January 2016 investigation, organic vapours ranged from 1.0 and 21.3 ppm. No notable odours or staining were observed by WSP.

Field screening data is presented in the borehole logs in Appendix D.

5.5 Soil: Quality

Chemical analyses were performed on selected soil samples recovered from the boreholes on the Phase Two property.

During the Golder March 2015 investigation, eight soil samples were submitted for analysis of PHC, VOC and PAH. All of the samples met the Table 7 SCS for all parameters analysed, with the exception of one sample from BH15-4 which exceeded the SCS for PHC F3. The sample which exceeded the Table 7 SCS was taken from 0.3 to 0.8 m bgs. A sample taken from the same borehole, but deeper (1.5 to 2.1 m bgs) met the Table 7 SCS. It was inferred that the source of the exceedance was likely a surface spill.

During the WSP January 2016 investigation, three soil samples and a duplicate were submitted for analysis of PHC and VOC, PAH, and metals. Two samples (BH15-4 and BH15-6) exceeded the SCS for lead, one sample (BH15-5) exceeded the SCS for nickel, and one sample (BH15-4) exceeded the SCS for mercury and cyanide. One sample (BH15-1) exceeded the SCS for multiple PAHs. The remaining samples met the Table 7 SCS for all parameters analysed.

The soil results are summarized in Tables 1 to 3 in Appendix E and are shown in plan view on Figures 7 to 9 and on cross-sections on Figures 10 to 12 in Appendix A.

Copies of the laboratory Certificates of Analysis are provided in Appendix F.

5.6 Groundwater: Quality

All groundwater samples were collected via a low flow sampling technique. Water quality parameters (such as water level, temperature, dissolved oxygen, conductivity, salinity, pH, oxygen reduction potential and turbidity) were monitored in order to ensure that the samples collected were representative of actual groundwater conditions.

In March 2015, groundwater sampling was conducted at 770 Bronson Avenue by Golder. Four groundwater samples (BH15-1 to BH15-4), and a duplicate were collected and submitted for analysis of PHC, VOC, and PAH. A groundwater sample was not collected from BH15-5, as that well was installed for geotechnical/hydrogeological purposes. One of the groundwater samples (BH15-2) exceeded the Table 7 SCS for benzene, and three groundwater samples (BH15-1, BH15-2, BH15-3) and the duplicate exceeded the Table 7 SCS for chloroform.

An additional round of groundwater sampling was conducted at these wells in August 2022 by EXP. Four groundwater samples (BH15-1, BH15-2, BH15-3, and BH15-5) and a duplicate were submitted for analysis of PHC, VOC and PAH. All of the samples were within the Tables 7 SCS for all parameters analysed.

In January, February and March 2016, groundwater sampling was conducted by WSP at 557 Cambridge Street and 774 Bronson Avenue. Groundwater sampling was conducted over multiple days due to limited sampled volume. Groundwater

samples were submitted for analysis of BTEX, PHC, VOC, PAH, and/or metals. Additional samples were submitted for analysis of VOC to address chloroform exceedances present in the first round of groundwater sampling.

Benzene was detected in the initial groundwater sample from BH15-3A. As the exceedance was very close to the Table 7 SCS criteria for benzene (0.83 ug/L vs 0.5 ug/L), and additional two rounds of samples were conducted at this location. Neither of the subsequent groundwater samples from BH15-3A had

All of the chloroform exceedances were detected in monitoring wells installed in the bedrock. To facilitate drilling in the bedrock, municipal water was used to cool the drill bits. Chloroform is generated at municipal water treatment plants when chlorine is used to kill bacteria in the water. In accordance with Regulation 153/04 it is the opinion of the Qualified Person that the source of chloroform in these monitoring wells. In addition, subsequent groundwater sampling events at all of the wells with chloroform exceedances were within the Table 7 SCS.

Therefore, in accordance with Section 49.1 of Regulation 153/04, chloroform is not considered to exceed the SCS. Analytical results are included in Tables 4 to 6 in Appendix E and are shown in plan view on Figures 13 to 15 and on cross-sections on Figures 16 to 18 in Appendix A.

Copies of the laboratory Certificates of Analysis are provided in Appendix F.

5.6.1 Chemical Transformation and Contaminant Sources

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COC in soil and groundwater, the contribution of which is dependent on the soil and groundwater conditions at the Phase Two property, as well as the chemical/physical properties of the COC. Relevant fate and transport mechanisms are natural attenuation mechanisms, including advection mixing, mechanical dispersion/molecular diffusion, phase partitions (i.e. sorption and volatilization), and possibly abiotic or biotic chemical reactions, which effectively reduce COC concentrations.

PAH and metals impacted soil has been identified on the south part of the Phase Two property. As there were no groundwater exceedances identified on the Phase Tw property, the contamination does not appear to be migrating.

It is recommended that the impacted soil be removed from the Phase Two property when the property is re-developed.

5.6.2 Evidence of Non-Aqueous Phase Liquid

Inspection of the groundwater monitoring wells did not indicate the presence of non-aqueous phase liquid (NAPL).

5.6.3 Maximum Concentrations

Contaminants that exceeded the applicable standards included:

Soil: PHC fraction F3, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[b]fluoranthene, dibenzo[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, cyanide, lead, mercury, nickel, and uranium.

Groundwater: None.

Maximum soil and groundwater concentrations are provided in Tables 7 and 8 in Appendix E.

5.7 Sediment: Quality

There are no water bodies on the Phase Two property, therefore sediment sampling was not required.

5.8 Quality Assurance and Quality Control Results

Quality assurance and quality control measures were taken during the field activities to meet the objectives of the sampling and quality assurance plan to collect unbiased and representative samples to characterize existing conditions in the fill materials and groundwater at the site. QA/QC measures, included:

- Collection and analysis of blind duplicate soil and groundwater samples to ensure sample collection precision;
- Analysis of a groundwater field blank for all parameters that were analysed to assess potential impact during sampling;
- Using dedicated and/or disposable sampling equipment;
- Following proper decontamination protocols to minimize cross-contamination;
- Maintaining field notes and completing field forms to document on-site activities; and
- Using only laboratory supplied sample containers and following prescribed sample protocols, including proper preservation, meeting sample hold times, proper chain of custody documentation, to ensure integrity of the samples.

5.9 Phase Two Conceptual Site Model

A Conceptual Site Model (CSM) provides a narrative, graphical and tabulated description integrating information related to the Phase Two property's geologic and hydrogeological conditions, areas of potential environmental concern/potential contaminating activities, the presence and distribution of contaminants of concern, contaminant fate and transport, and potential exposure pathways.

5.9.1 Introduction

EXP Services Inc. (EXP) was retained by Katasa Group to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 770 and 774 Bronson Avenue and 557 Cambridge Street in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was occupied by a vacant former gas station and parking lot.

The objective of the Phase Two ESA investigation was to assess the conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. The most recent use of the property was for commercial, and the proposed future property use will be residential and commercial. Consequently, in accordance with Regulation 153/04, as amended, a Record of Site Condition (RSC) must be filed.

The most recent use of the property was commercial. The proposed future use of the property is residential and commercial. A new building will be constructed at the Phase Two property. The building will have one or two levels of underground parking, ground level commercial space, and upper-level residential units. Since the past use of the property was commercial land use, an RSC must be filed, per Ontario Regulation 153/04.

5.9.2 Physical Site Description

The Phase Two property has the municipal addresses 770 and 774 Bronson Avenue, and 557 Cambridge Street in Ottawa, Ontario. The Phase Two property is located in a residential/commercial area near the intersection of Carling Avenue and Bronson Avenue. The Phase Two property is irregular in shape has an area of approximately 0.45 hectares. At the time of the current investigation, the north part of the property was occupied by a vacant former garage, and the south part of the property was a parking lot. A site plan showing the Phase Two property is presented as Figure 2 in Appendix A.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area have a well that is being used or is intended for use as a source of potable water. Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

Based on the Phase Two ESA investigation, the Phase Two property is a shallow soil property as defined in Section 43.1 of the regulation. There are no waterbodies on the Phase Two property, and the Phase Two is not located within 30 m of a waterbody.

Refer to Table 5.3 for the Site identification information.

Table 5.3: Site Identification Details

Civic Address	770 and 774 Bronson Avenue, 557 Cambridge Street, Ottawa, Ontario
Current Land Use	Commercial
Proposed Future Land Use	Commercial and Residential
Property Identification Number	04103-0205, 04103-0125, 04103-0215
UTM Coordinates	NAD83 18T 445213 m E and 5027661 m N
Site Area	0.45 hectares
Property Owner	10467855 Canada Inc.

The Phase One Conceptual Site Model is provided as Figure 3.

5.9.3 Geological and Hydrogeological

Beneath any fill, the surficial geology of the subject site is characterised by Champlain Sea deposits of plain till. The bedrock geology underlying the site consists of limestone with some shaley partings of the Ottawa Formation. The depth to rock in the area is typically 5 m below surface grade or less. Based on previous investigation, bedrock was identified between 0.8 and 3.1 metres below ground surface the Phase Two property. Topographically, the Phase Two study area slopes towards the southwest.

The groundwater flow direction is anticipated to be to the southeast towards Dow's Lake on the south part of the Phase Two property and towards the north on the north part of the Phase Two property. The groundwater flow direction was is shown in Figure 4.

EXP notes that groundwater levels depend on the size of the fractures that are intercepted as drilling progresses. Groundwater levels can also be influenced by seasonal changes, the presence of subsurface structures, or fill.

A plan view showing cross-sections is provided as Figure 5, while the Phase Two property geology is depicted in cross-sections on Figure 6.

A summary of factors that apply to the Phase Two property is provided in Table 5.4.

Table 5.4: Site Characteristics

Characteristic	Description
Minimum Depth to Bedrock	0.8 metres below ground surface
Minimum Depth to Groundwater	1.91 m bgs (March 1, 2016)
Shallow Soil Property	Yes, bedrock is less than 2.0 mbgs
Proximity to water body or ANSI	Dow's Lake – 370 m southwest
Soil pH	8.22 to 8.25
Soil Texture	Coarse
Current Property Use	Commercial
Future Property Use	Residential and Commercial
Proposed Future Building	Multi-storey residential, commercial on ground level, one basement level
Areas Containing Suspected Fill	All soil that was on the property was ill

5.9.4 Utilities and Impediments

The Phase Two property, and surrounding area are serviced by municipal water, storm and sanitary sewers, natural gas, hydro and telecommunication. There were no utilities present on the south part of the Phase Two property.

Since the water table is within the bedrock, the presence of utilities is not expected to affect possible migration of contaminants once buildings are constructed on the Phase Two property.

5.9.5 Potentially Contaminating Activities

The following on-site potentially contaminating activities (PCA) were identified:

- **PCA 2** – 770 Bronson Avenue (Phase Two property) – Former gas station with three USTs, former garage (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks, PCA 10 – Commercial Autobody Shops);
- **PCA 7** – 774 Bronson Avenue (Phase Two property) – Former heating oil AST in the north residential building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 8** – 774 Bronson Avenue (Phase Two property) – Former heating oil AST in the south residential building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 9** – 774 Bronson Avenue (Phase Two property) – Former heating oil AST in the commercial building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 10** – 770 Bronson Avenue (Phase Two property) – Former heating oil AST in the west side of the garage building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 11** – 557 Cambridge Street (Phase Two property) – Former heating oil AST in the north office building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 12** – 557 Cambridge Street (Phase Two property) – Former heating oil AST in the middle office building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);

- **PCA 13** – 557 Cambridge Street (Phase Two property) – Former heating oil AST in the south office building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 15** – 770 Bronson Avenue (Phase Two property) – Former motor oil AST along the west interior wall of the garage building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 16** – 770 Bronson Avenue (Phase Two property) – Former waste oil AST along the south exterior wall of the garage building (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 17** – Entire Phase Two property – Impacted fill material identified in previous investigations (PCA #30 – Importation of Fill Material of Unknown Quantity);
- **PCA 18** – 557 Cambridge Avenue (Phase Two property) – Western part of the site was historically used for wood treating (PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products).
- **PCA 20** – 557 Cambridge Street (Phase Two property) – Former contractor's yard (PCA #Other – Registered waste generator).

By definition, all of the above PCA have resulted in APEC on the Phase Two property.

The following PCA have been identified in the Phase Two study area:

- **PCA 1** – Between Cambridge Street and Dows Lake (150 m southwest) – Rail spur lines at the Fraserfield Lumber Yard in 1912 and 1922 (PCA #46 – Rail Yards, Tracks and Spurs; PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products);
- **PCA 3** – 735 Carling Avenue (225 m west) – Former gas station with three USTs (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 4** – 400 Bell Street (125 m west) – Former garage with UST (PCA 10 – Commercial Autobody Shops, PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks);
- **PCA 5** – 277 Carling Avenue (40 m northeast) – Hydro sub station (PCA #55 – Transformer Manufacturing, Processing and Use);
- **PCA 6** – 786-788 Bronson Street (20 m south) – Former dry cleaner (PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used);
- **PCA 14** – 784 Bronson Avenue (15 m south) – Former commercial printing operation (PCA #Other – Commercial printing operation).
- **PCA 19** – 748 Bronson Avenue (now 265 Carling Avenue) (60 m north) – Former gas station (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks).

The former gas station at 735 Carling Avenue, the former lumber yard and rail spur lines at Fraserfield Lumber yard, and the former garage at 400 Bell Street were all located over 150 m from the Phase Two property. Due to the separation distance from the Phase Two property, these operations were not considered to result in APECs.

The former dry-cleaning operation and commercial printing operation were located approximately 20 m and 40 m south of the Phase Two property respectively. Previous investigations at the Phase Two property have identified the groundwater flow on the south part of the Phase Two property to be to the southwest. Therefor, these operations were located cross-gradient of the Phase Two property and was determined not to result in APECs.

The former gas station at 265 Carling Avenue and the hydro substation at 277 Carling Avenue are located approximately 60 m north and 40 m northeast respectively. Previous investigations at the Phase Two property have identified the groundwater

flow on the north part of the Phase Two property to be to the north. Therefor, these operations were located cross/down-gradient of the Phase Two property and was determined not to result in APECs.

Therefore, none of the off-site APEC were determined to result in APECs.

5.9.6 Areas of Potential Environmental Concern/Potential Contaminates of Concern

Ontario Regulation 153/04 defines an APEC as an area on a property where one or more contaminants are potentially present. The following APEC were identified on the Phase Two property, as shown on Figure 2 and Table 5.9 below:

Table 5.9: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
1. Former gas station at 770 Bronson Avenue	Northeast part of the Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC	Soil and groundwater
2. Former automotive garage at 770 Bronson Avenue	Garage building footprint	PCA #10 – Commercial autobody shop	On-Site	BTEX, PHC, VOC	Soil and groundwater
3. Former heating oil AST at 770 Bronson Avenue	Along south exterior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
4. Former waste oil AST at 770 Bronson Avenue	Along south exterior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH, metals	Soil and groundwater
5. Former motor oil AST at 770 Bronson Avenue	Along west interior building wall	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC	Soil and groundwater
6. Former heating oil AST in the north residential building at 774 Bronson Avenue	Former building footprint at northeast corner of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
7. Former heating oil AST in the south residential building at 774 Bronson Avenue	Former building footprint on east side of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
8. Former heating oil AST in the commercial building at 774 Bronson Avenue	Former building footprint at southeast corner of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
9. Former heating oil AST in the south commercial building at 557 Cambridge Street	Former building footprint at southwest corner of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
10. Former heating oil AST in the centre commercial building at 557 Cambridge Street	Former building footprint on the west side of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
11. Former heating oil AST in the north commercial building at 557 Cambridge Street	Former building footprint at northwest corner of Phase Two property	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHC, VOC, PAH	Soil and groundwater
12. Poor quality fill at 557 Cambridge Street and 774 Bronson Avenue	Entire Phase Two property	PCA #30 – Importation of Fill Material of Unknown Quality	On-site	BTEX, PHC, PAH, metals	Soil
13. Former contractors' yard at 557 Cambridge Street	West part of the Phase Two property	PCA #Other – Registered waste generator	On-site	BTEX, PHC	Soil and groundwater
14. Former treated lumber storage at 557 Cambridge Street	West part of the Phase Two property	PCA #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	On-site	PAH	Soil

5.9.7 Investigation

Previous site investigative activities consisted of the drilling of boreholes to facilitate the collection of soil samples for visual inspection and chemical analysis. The boreholes were instrumented with monitoring wells to facilitate the collection of groundwater samples. EXP did into oversee any drilling activities at the Phase Two property.

Prior to the commencement of drilling, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual borehole locations.

A drilling program was conducted at 770 Bronson Avenue in March 2015 under the supervision of Golder Associates. The drilling program was completed on March 24 and 25, 2015 by Marathon Drilling Ltd. (Marathon), a licensed well contractor. Marathon advanced four boreholes (BH15-1 to BH15-4) across the site, using a CCME track mounted drill. Boreholes were augured to refusal, then cored to depth. All of the boreholes were completed as monitoring wells. Bedrock was encountered between 2.4 and 3.1 metres below ground surface (m bgs) in all boreholes. On June 19, 2015, Golder installed and additional well (BH15-5) at 770 Bronson Avenue for geotechnical and hydrogeological site assessment.

A drilling program was conducted at 774 Bronson Avenue and 557 Cambridge Avenue in January 2016 under the supervision of WSP. The drilling program was completed January 11 to 13, 2016 by George Downing Estate Drilling (Downing), a licensed well contractor. Downing advanced six boreholes (BH15-1 to BH15-6) across the site using a CME 55 track mounted drill. Two of the boreholes were augured to refusal (BH15-1 and BH15-5). Four boreholes (BH15-2, BH15-3B, BH15-4, and BH-6) were augured to refusal, then cored to depth. Nested monitoring wells were installed in BH15-2, BH15-3, BH15-4, and BH15-6.

On March 27, 2015, Golder collected groundwater samples from the monitoring wells at 770 Bronson Avenue. Four groundwater samples, and a duplicate sample, were submitted for analysis of PHC, VOC, and PAH.

On January 19 and 21, February 15 and 23, and March 1, 2016, WSP collected groundwater samples from the monitoring wells at 774 Bronson Avenue and 557 Cambridge Street. A total of 20 samples and three supplicates were submitted for analysis of BTEX; seven samples and one duplicate were submitted for analysis of PHC; 19 samples and three duplicates were submitted for analysis of VOC, seven samples and one duplicate were submitted for analysis of PAH, and eight samples and one duplicate were submitted for analysis of metals and inorganics.

On August 11, 2022, EXP conducted an additional round of groundwater sampling of the monitoring wells at 770 Bronson Avenue. None of the monitoring wells installed at 774 Bronson Avenue or 557 Cambridge Street were still present. Four groundwater samples, plus a field duplicate, were submitted for analysis of PHC, VOC, and PAH. BH15-4 could not be sampled due to insufficient sample volume.

5.9.8 Soil Sampling

Chemical analyses were performed on selected soil samples recovered from the boreholes on the Phase Two property.

During the Golder March 2015 investigation, eight soil samples were submitted for analysis of PHC, VOC and PAH. All of the samples met the Table 7 SCS for all parameters analysed, with the exception of one sample from BH15-4 which exceeded the SCS for PHC F3. The sample which exceeded the Table 7 SCS was taken from 0.3 to 0.8 m bgs. A sample taken from the same borehole, but deeper (1.5 to 2.1 m bgs) met the Table 7 SCS. It was inferred that the source of the exceedance was likely a surface spill.

During the WSP January 2016 investigation, three soil samples and a duplicate were submitted for analysis of PHC and VOC, PAH, and metals. Two samples (BH15-4 and BH15-6) exceeded the SCS for lead, one sample (BH15-5) exceeded the SCS for nickel, and one sample (BH15-4) exceeded the SCS for mercury and cyanide. One sample (BH15-1) exceeded the SCS for multiple PAHs. The remaining samples met the Table 7 SCS for all parameters analysed.

The soil results are summarized in Tables 1 to 3 in Appendix E and are shown in plan view on Figures 7 to 9 and on cross-sections on Figures 10 to 12 in Appendix A.

Copies of the laboratory Certificates of Analysis are provided in Appendix F.

5.9.9 Groundwater Sampling

All groundwater samples were collected via a low flow sampling technique. Water quality parameters (such as water level, temperature, dissolved oxygen, conductivity, salinity, pH, oxygen reduction potential and turbidity) were monitored in order to ensure that the samples collected were representative of actual groundwater conditions.

In March 2015, groundwater sampling was conducted at 770 Bronson Avenue by Golder. Four groundwater samples (BH15-1 to BH15-4), and a duplicate were collected and submitted for analysis of PHC, VOC, and PAH. A groundwater sample was not collected from BH15-5, as that well was installed for geotechnical/hydrogeological purposes. One of the groundwater samples (BH15-2) exceeded the Table 7 SCS for benzene, and three groundwater samples (BH15-1, BH15-2, BH15-3) and the duplicate exceeded the Table 7 SCS for chloroform.

An additional round of groundwater sampling was conducted at these wells in August 2022 by EXP. Four groundwater samples (BH15-1, BH15-2, BH15-3, and BH15-5) and a duplicate were submitted for analysis of PHC, VOC and PAH. All of the samples were within the Tables 7 SCS for all parameters analysed.

In January, February and March 2016, groundwater sampling was conducted by WSP at 557 Cambridge Street and 774 Bronson Avenue. Groundwater sampling was conducted over multiple days due to limited sampled volume. Groundwater samples were submitted for analysis of BTEX, PHC, VOC, PAH, and/or metals. Additional samples were submitted for analysis of VOC to address chloroform exceedances present in the first round of groundwater sampling.

Benzene was detected in the initial groundwater sample from BH15-3A. As the exceedance was very close to the Table 7 SCS criteria for benzene (0.83 ug/L vs 0.5 ug/L), and additional two rounds of samples were conducted at this location. Neither of the subsequent groundwater samples from BH15-3A had

All of the chloroform exceedances were detected in monitoring wells installed in the bedrock. To facilitate drilling in the bedrock, municipal water was used to cool the drill bits. Chloroform is generated at municipal water treatment plants when chlorine is used to kill bacteria in the water. In accordance with Regulation 153/04 it is the opinion of the Qualified Person that the source of chloroform in these monitoring wells. In addition, subsequent groundwater sampling events at all of the wells with chloroform exceedances were within the Table 7 SCS.

Therefore, in accordance with Section 49.1 of Regulation 153/04, chloroform is not considered to exceed the SCS. Analytical results are included in Tables 4 to 6 in Appendix E and are shown in plan view on Figures 13 to 15 and on cross-sections on Figures 16 to 18 in Appendix A.

Copies of the laboratory Certificates of Analysis are provided in Appendix F.

Contaminants that exceeded the applicable standards included:

Soil: PHC fraction F3, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[b]fluoranthene, dibenzo[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, cyanide, lead, mercury, nickel, and uranium.

Groundwater: None.

Maximum soil and groundwater concentrations are provided in Tables 7 and 8 in Appendix E.

5.9.10 Contaminant Fate and Transport

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COC in soil and groundwater, the contribution of which is dependent on the soil and groundwater conditions at the Phase Two property, as well as the chemical/physical properties of the COC. Relevant fate and transport mechanisms are natural attenuation mechanisms, including advection mixing, mechanical dispersion/molecular diffusion, phase partitions (i.e. sorption and volatilization), and possibly abiotic or biotic chemical reactions, which effectively reduce COC concentrations.

PAH and metals impacted soil has been identified on the south part of the Phase Two property. As there were no groundwater exceedances identified on the Phase Twp property, the contamination does not appear to be migrating.

It is recommended that the impacted soil be removed from the Phase Two property when the property is re-developed.

6.0 Conclusion

PAH and metals impacted soil has been identified on the south part of the Phase Two property. As there were no groundwater exceedances identified on the Phase Twp property, the contamination does not appear to be migrating.

It is recommended that the impacted soil be removed from the Phase Two property when the property is re-developed.

The Qualified Person can confirm that the Phase Two Environmental Site Assessment was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices.

Leah Wells, P.Eng.
Environmental Engineer
Earth and Environment

Mark McCalla, P.Geo.
Senior Project Manager
Earth and Environment

PROFESSIONAL GEOSCIENTIST
MARK G. McCALLA
PRACTISING MEMBER
0451
Oct 6/22
ONTARIO

7.0 References

This study was conducted in accordance with the applicable Regulations, Guidelines, Policies, Standards, Protocols and Objectives. Specific reference is made to the following documents.

- Freeze and Cherry, *Groundwater*, Prentice Hall, 1979.
- Golder Associates, *Phase One Environmental Site Assessment, 770 Bronson Avenue, Ottawa, Ontario*, August 2015.
- Golder Associates, *Phase Two Environmental Site Assessment, 770 Bronson Avenue, Ottawa, Ontario,* August 2015.
- Golder Associates, *Technical Memorandum, Remedial Action Plan*, August 2016.
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- Ontario Ministry of the Environment, Conservation and Parks, *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, December 1996.
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- Ontario Ministry of the Environment, Conservation and Parks, *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act,* July 1, 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Management of Excess Soil – A Guide for Best Management Practices,* January 2014.
- Ontario Regulation 153/04, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 347, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 903, made under the *Water Resources Act*, as amended.
- Paterson Group Inc., *Phase I Environmental Site Assessment, 770-774 Bronson Avenue, Ottawa, Ontario*, April 2020.
- WSP Canada Inc., *Phase 1 Environmental Site Assessment, 774 Bronson Avenue and 557 Cambridge Street South, Ottawa, Ontario*, December 2015
- WSP Canada Inc., *Phase Two Environmental Site Assessment, 774 Bronson Avenue and 557 Cambridge Street, Ottawa, Ontario*, March 2016.

8.0 General Limitations

Basis of Report

This report ("Report") is based on site conditions known or inferred by the investigation undertaken as of the date of the Report. Should changes occur which potentially impact the condition of the site the recommendations of EXP may require re-evaluation. Where special concerns exist, or Katasa Groupe ("the Client") has special considerations or requirements, these should be disclosed to EXP to allow for additional or special investigations to be undertaken not otherwise within the scope of investigation conducted for the purpose of the Report.

Reliance on Information Provided

The evaluation and conclusions contained in the Report are based on conditions in evidence at the time of site inspections and information provided to EXP by the Client and others. The Report has been prepared for the specific site, development, building, design or building assessment objectives and purpose as communicated by the Client. EXP has relied in good faith upon such representations, information and instructions and accepts no responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of any misstatements, omissions, misrepresentation or fraudulent acts of persons providing information. Unless specifically stated otherwise, the applicability and reliability of the findings, recommendations, suggestions or opinions expressed in the Report are only valid to the extent that there has been no material alteration to or variation from any of the information provided to exp. If new information about the environmental conditions at the Site is found, the information should be provided to EXP so that it can be reviewed and revisions to the conclusions and/or recommendations can be made, if warranted.

Standard of Care

The Report has been prepared in a manner consistent with the degree of care and skill exercised by engineering consultants currently practicing under similar circumstances and locale. No other warranty, expressed or implied, is made. Unless specifically stated otherwise, the Report does not contain environmental consulting advice.

Complete Report

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment form part of the Report. This material includes, but is not limited to, the terms of reference given to EXP by the Client, communications between EXP and the Client, other reports, proposals or documents prepared by EXP for the Client in connection with the site described in the Report. In order to properly understand the suggestions, recommendations and opinions expressed in the Report, reference must be made to the Report in its entirety. EXP is not responsible for use by any party of portions of the Report.

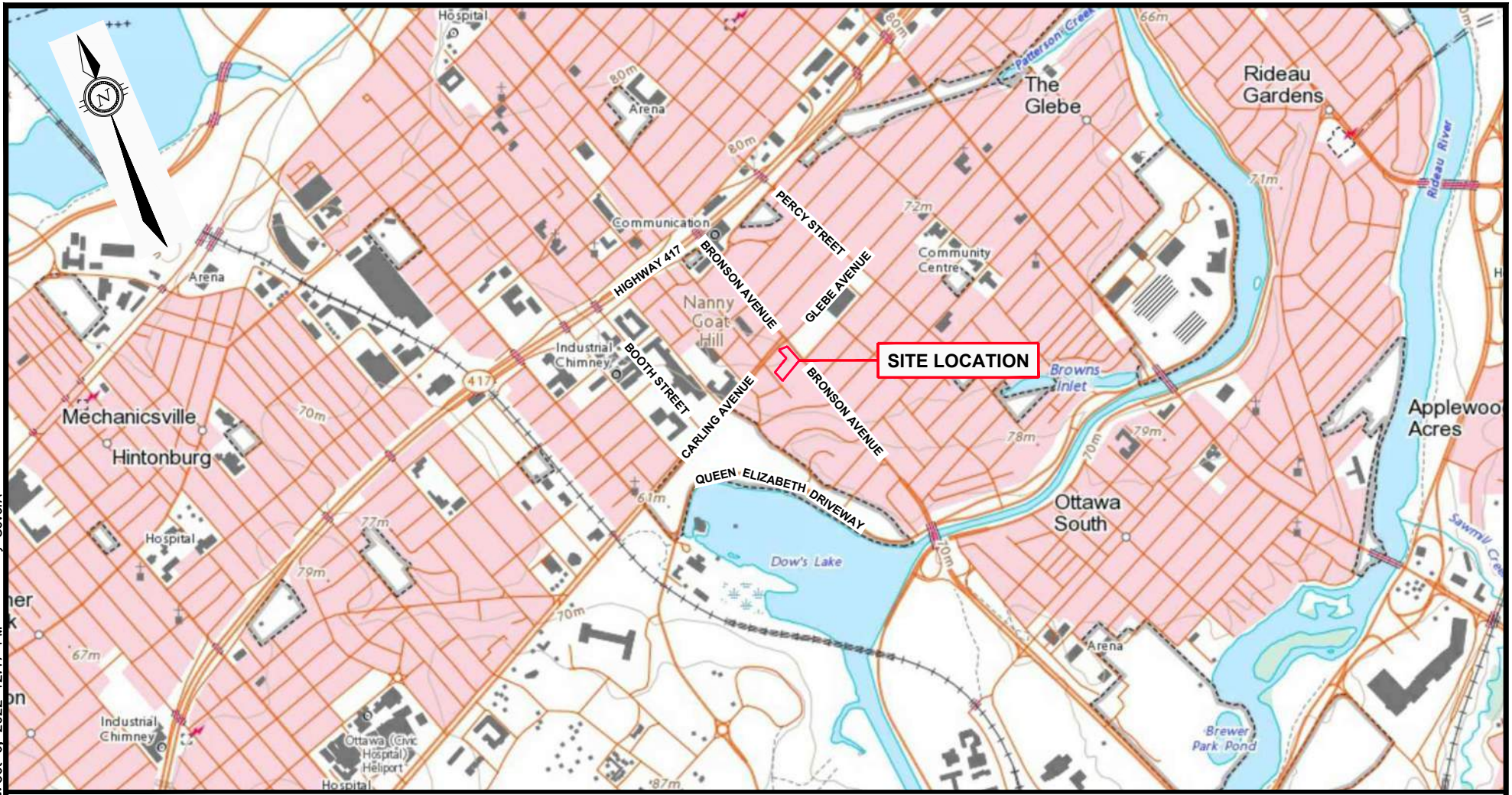
Use of Report

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. No other party may use or rely upon the Report in whole or in part without the written consent of EXP. Any use of the Report, or any portion of the Report, by a third party are the sole responsibility of such third party. EXP is not responsible for damages suffered by any third party resulting from unauthorised use of the Report.

Report Format

Where EXP has submitted both electronic file and a hard copy of the Report, or any document forming part of the Report, only the signed and sealed hard copy shall be the original documents for record and working purposes. In the event of a dispute or discrepancy, the hard copy shall govern. Electronic files transmitted by EXP utilize specific software and hardware systems. EXP makes no representation about the compatibility of these files with the Client's current or future software and hardware systems. Regardless of format, the documents described herein are EXP's instruments of professional service and shall not be altered without the written consent of EXP.

Appendix A: Figures



LEGEND

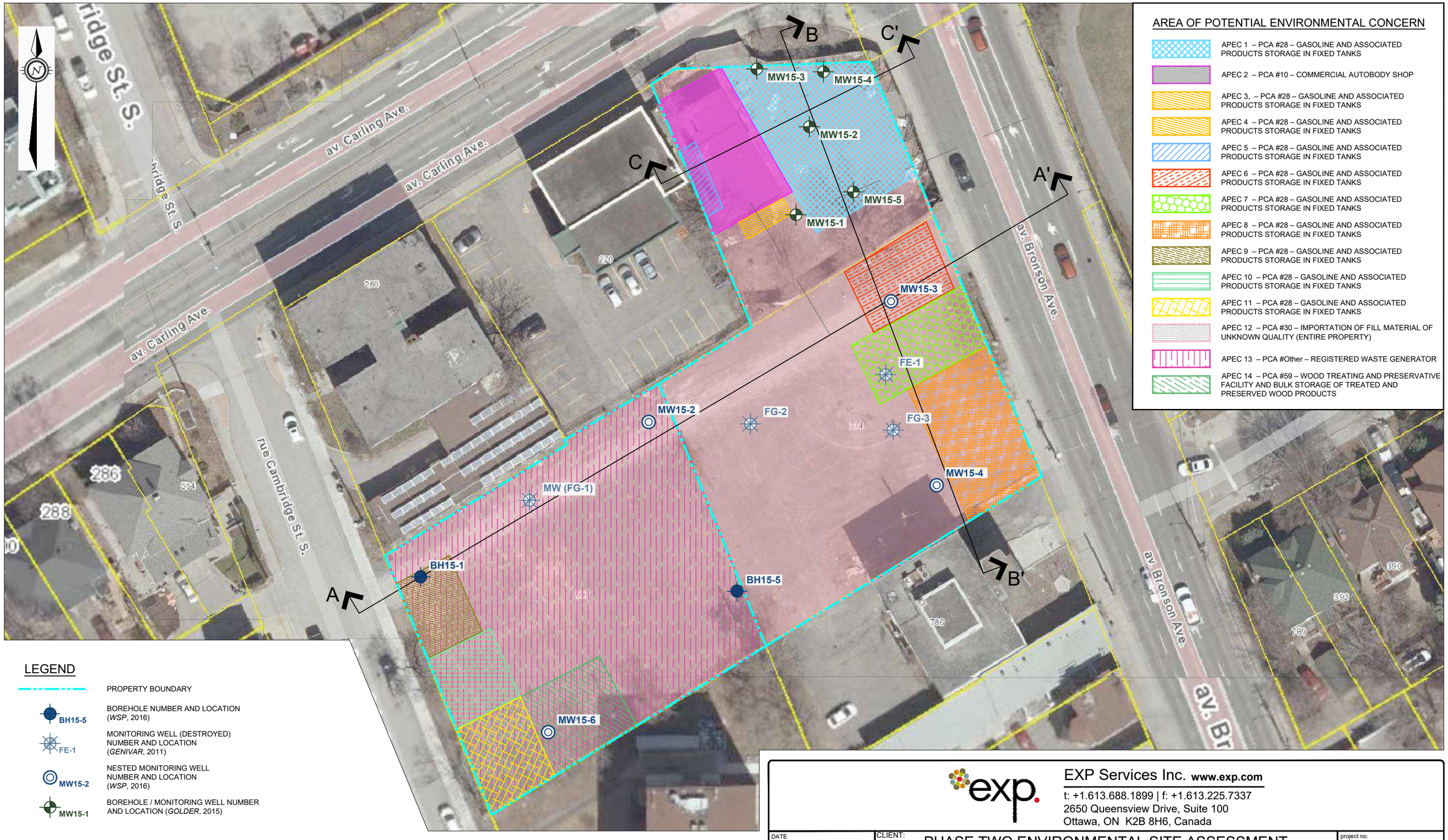
PROPERTY BOUNDARY

0 200m 400m 800m

HORIZONTAL 1:20,000

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2022	CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON		project no. OTT-22019409-A0
DESIGN: LW / CHECKED: MM			scale 1:20,000
DRAWN BY: AS	TITLE: SITE LOCATION PLAN		FIG 1



AREA OF POTENTIAL ENVIRONMENTAL CONCERN

- APEC 1 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 2 – PCA #10 – COMMERCIAL AUTOBODY SHOP
- APEC 3, – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 4 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 5 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 6 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 7 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 8 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 9 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 10 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 11 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 12 – PCA #30 – IMPORTATION OF FILL MATERIAL OF UNKNOWN QUALITY (ENTIRE PROPERTY)
- APEC 13 – PCA #Other – REGISTERED WASTE GENERATOR
- APEC 14 – PCA #59 – WOOD TREATING AND PRESERVATIVE FACILITY AND BULK STORAGE OF TREATED AND PRESERVED WOOD PRODUCTS

LEGEND

- PROPERTY BOUNDARY
- BH15-5 — BOREHOLE NUMBER AND LOCATION (*WSP*, 2016)
- FE-1 — MONITORING WELL (DESTROYED) NUMBER AND LOCATION (*GENIVAR*, 2011)
- MW15-2 — NESTED MONITORING WELL NUMBER AND LOCATION (*WSP*, 2016)
- MW15-1 — BOREHOLE / MONITORING WELL NUMBER AND LOCATION (*GOLDER*, 2015)

0 5m 10m 20m

HORIZONTAL 1:500

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Ottawa, ON K2B 8H6, Canada

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DESIGN: LW / CHECKED: MM			scale 1:500
DRAWN BY: AS	TITLE: SITE PLAN		FIG 2

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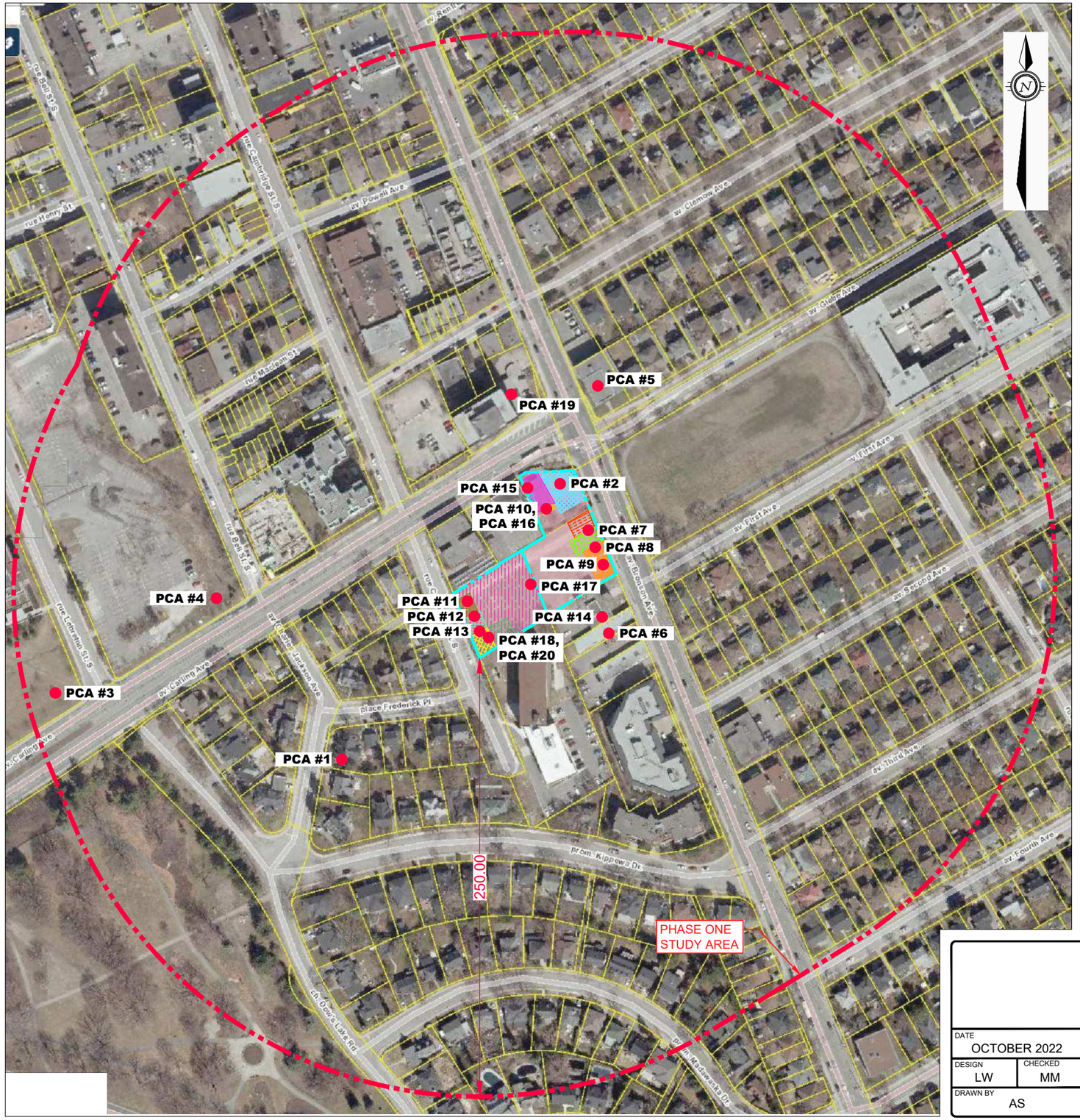

AREA OF POTENTIAL ENVIRONMENTAL CONCERN

- APEC 1 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 2 – PCA #10 – COMMERCIAL AUTOBODY SHOP
- APEC 3, – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
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- APEC 5 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
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- APEC 7 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
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- APEC 9 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 10 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 11 – PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- APEC 12 – PCA #30 – IMPORTATION OF FILL MATERIAL OF UNKNOWN QUALITY (ENTIRE PROPERTY)
- APEC 13 – PCA #Other – REGISTERED WASTE GENERATOR
- APEC 14 – PCA #59 – WOOD TREATING AND PRESERVATIVE FACILITY AND BULK STORAGE OF TREATED AND PRESERVED WOOD PRODUCTS

LEGEND

- PROPERTY BOUNDARY
- PHASE ONE STUDY AREA (250m)
- PCA #1 – POTENTIALLY CONTAMINATING ACTIVITY (PCA)

0 25m 50m 100m

HORIZONTAL 1:2500

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DESIGN: LW / CHECKED: MM			scale 1:2,500
DRAWN BY: AS	TITLE: CONCEPTUAL SITE MODEL - PHASE TWO STUDY AREA		FIG 3

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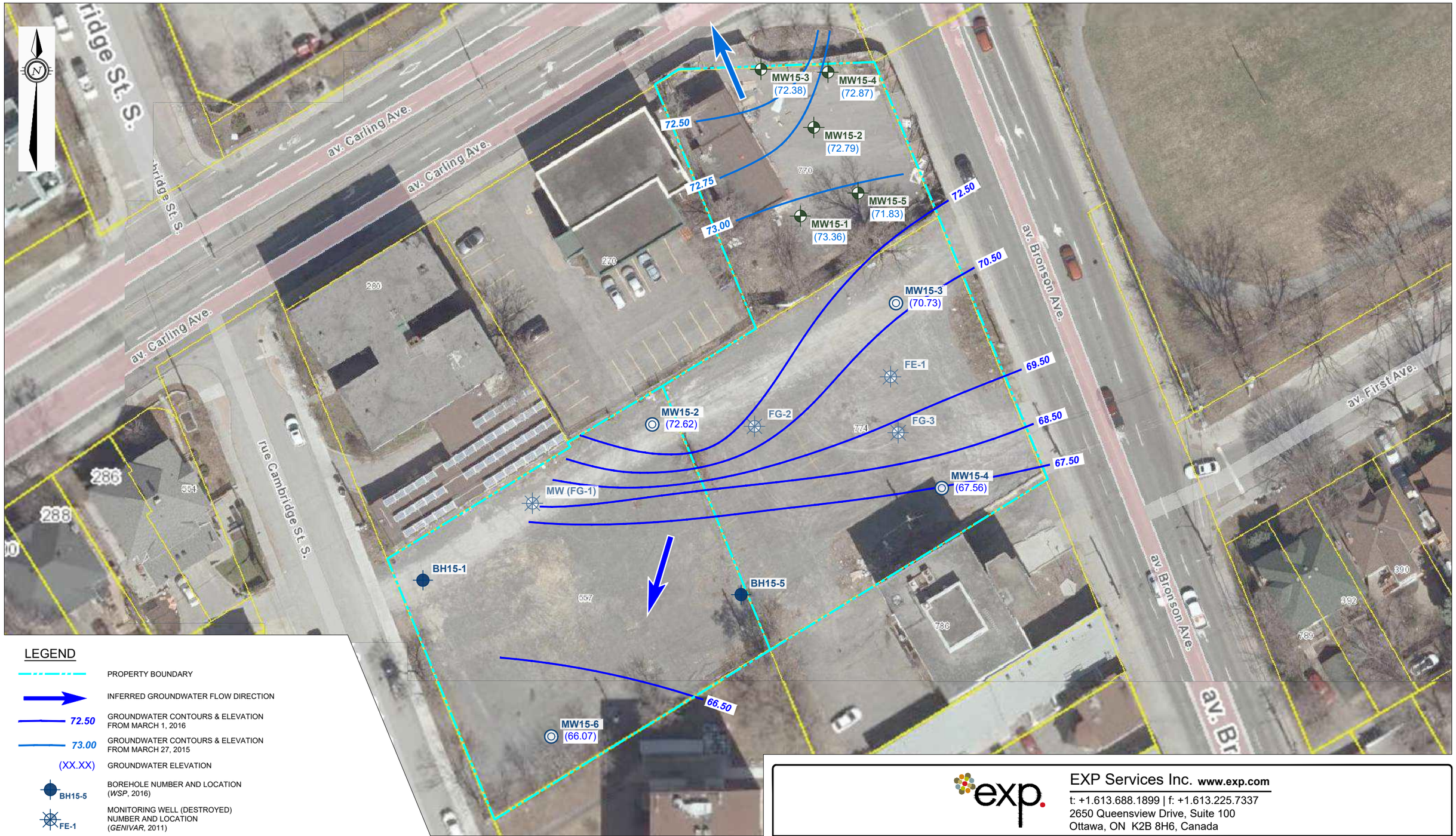

LEGEND

- PROPERTY BOUNDARY
- INFERRED GROUNDWATER FLOW DIRECTION
- 72.50 — GROUNDWATER CONTOURS & ELEVATION FROM MARCH 1, 2016
- 73.00 — GROUNDWATER CONTOURS & ELEVATION FROM MARCH 27, 2015
- (XX.XX) — GROUNDWATER ELEVATION
- BH15-5 — BOREHOLE NUMBER AND LOCATION (*WSP*, 2016)
- FE-1 — MONITORING WELL (DESTROYED) NUMBER AND LOCATION (*GENIVAR*, 2011)
- MW15-2 — NESTED MONITORING WELL NUMBER AND LOCATION (*WSP*, 2016)
- MW15-1 — BOREHOLE / MONITORING WELL NUMBER AND LOCATION (*GOLDER*, 2015)

0 5m 10m 20m

HORIZONTAL 1:500

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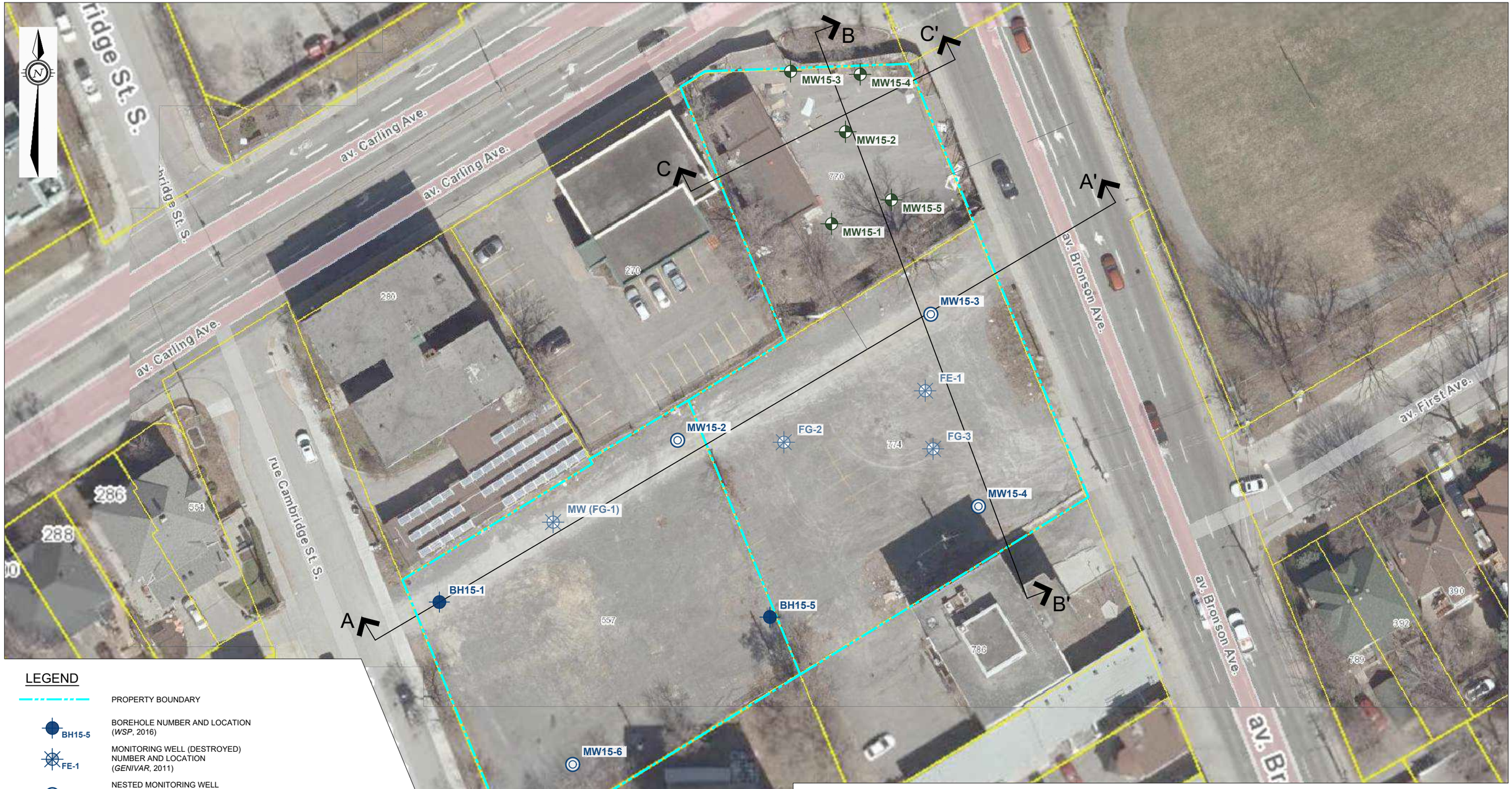
DATE: OCTOBER 2022	CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON		project no. OTT-22019409-A0
DESIGN: LW / CHECKED: MM			scale 1:500
DRAWN BY: AS	TITLE: GROUNDWATER CONTOUR PLAN		FIG 4

Filename: E:\OTT\OTT-22019409-A0\60 Execution\65 Drawings\22019409-A0_Ph-2.dwg
Last Saved: Oct 6, 2022 12:47 PM Last Plotted:Oct 6, 2022 12:47 PM Plotted by: SeverA



LEGEND

- PROPERTY BOUNDARY
- BH15-5 — BOREHOLE NUMBER AND LOCATION (*WSP*, 2016)
- FE-1 — MONITORING WELL (DESTROYED) NUMBER AND LOCATION (*GENIVAR*, 2011)
- MW15-2 — NESTED MONITORING WELL NUMBER AND LOCATION (*WSP*, 2016)
- MW15-1 — BOREHOLE / MONITORING WELL NUMBER AND LOCATION (*GOLDER*, 2015)

0 5m 10m 20m

HORIZONTAL 1:500

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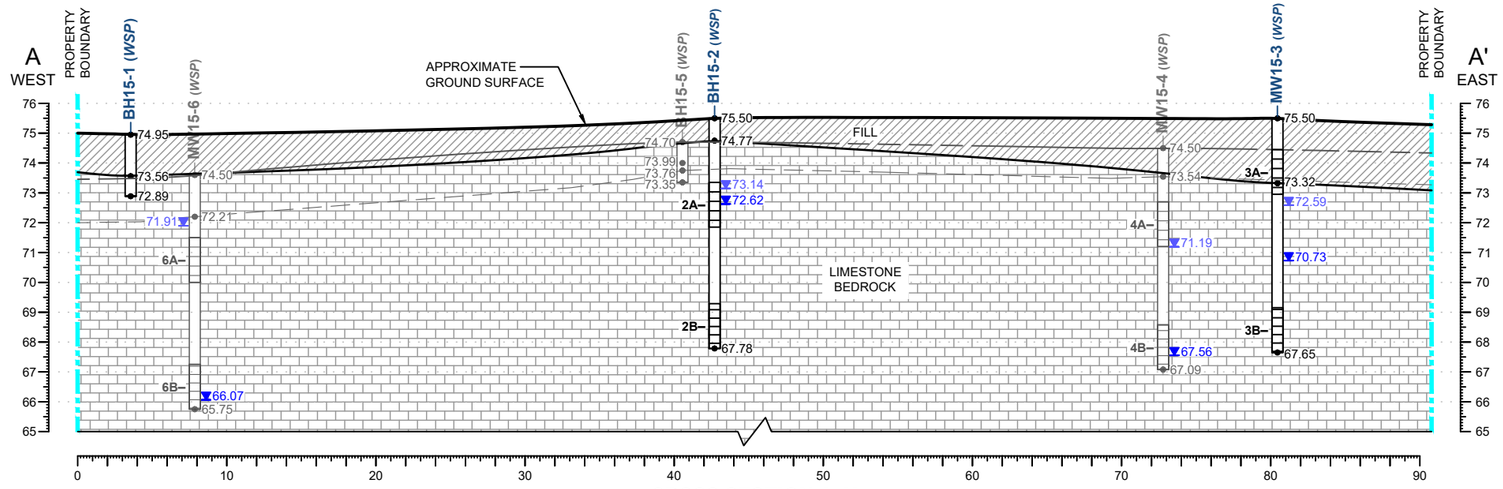
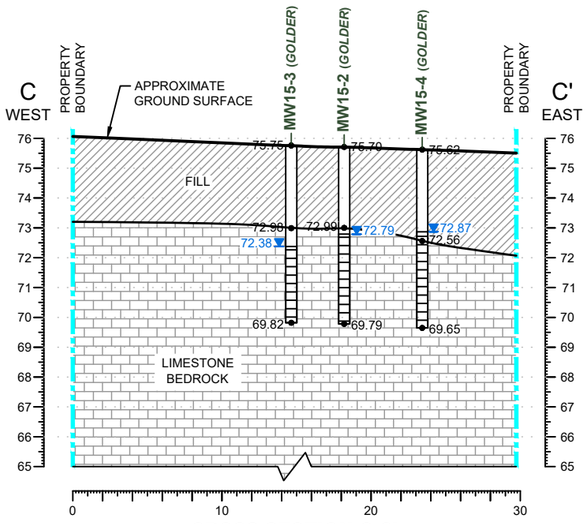
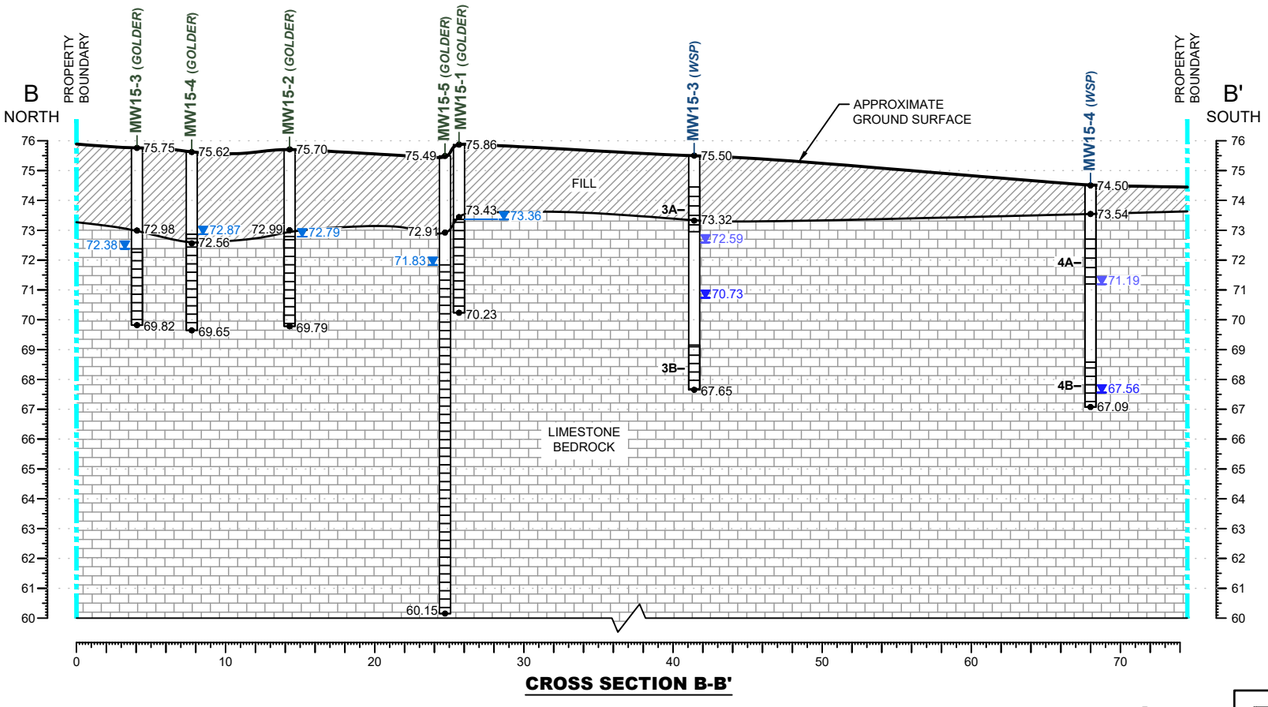
DESIGN: LW / CHECKED: MM			scale: 1:500
DRAWN BY: AS	TITLE: CROSS SECTION PLAN		FIG 5







LEGEND

- PROPERTY BOUNDARY
- 72.59 ▼ GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - SHALLOW
- 70.73 ▼ GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - DEEP
- 71.83 ▼ GROUNDWATER ELEVATION FROM MARCH 27, 2016 (*GOLDER*)

HORIZONTAL 0 4m 8m 16m 1:400

VERTICAL 0 2m 4m 6m 1:200

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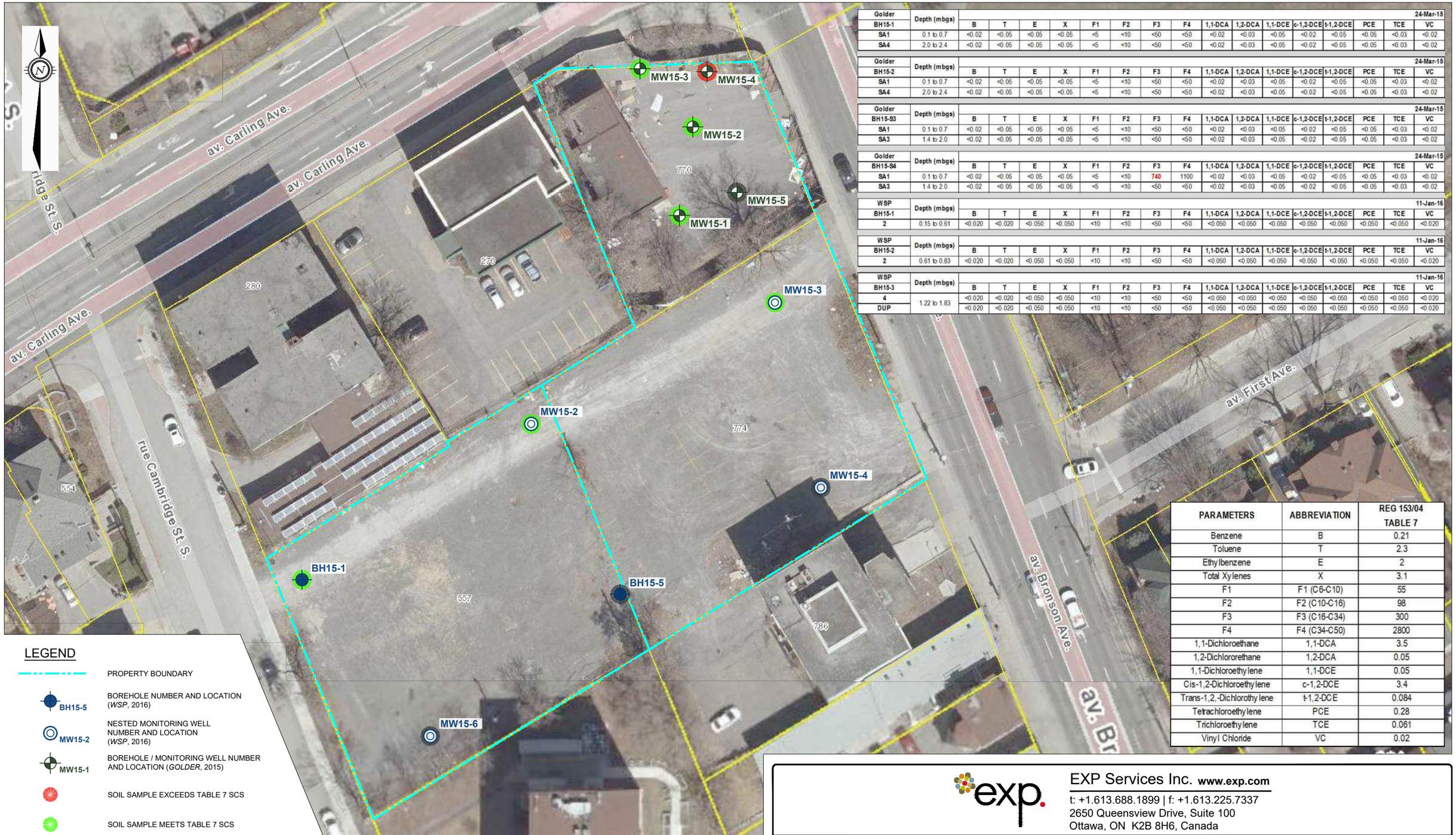
DATE: OCTOBER 2022	CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON		project no. OTT-22019409-A0
DESIGN: LW / CHECKED: MM			scale: HORIZ 1:400, VERT 1:200
DRAWN BY: AS	TITLE: CROSS SECTIONS A-A', B-B', C-C'		FIG 6



Golder	Depth (mbgs)																24-Mar-15
BH15-1		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SA1	0.1 to 0.7	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02
SA4	2.0 to 2.4	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02

Golder	Depth (mbgs)																24-Mar-15
BH15-2		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SA1	0.1 to 0.7	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02
SA4	2.0 to 2.4	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02

Golder	Depth (mbgs)																24-Mar-15
BH15-S3		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SA1	0.1 to 0.7	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02
SA3	1.4 to 2.0	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.06	<0.03	<0.02

Golder	Depth (mbgs)																24-Mar-15
BH15-S4		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SA1	0.1 to 0.7	<0.02	<0.05	<0.05	<0.05	<5	<10	740	1100	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02
SA3	1.4 to 2.0	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02

WSP	Depth (mbgs)																11-Jan-16
BH15-1		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
2	0.15 to 0.61	<0.020	<0.020	<0.050	<0.050	<10	<10	<50	<50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020

WSP	Depth (mbgs)																11-Jan-16
BH15-2		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
2	0.61 to 0.83	<0.020	<0.020	<0.050	<0.050	<10	<10	<50	<50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020

WSP	Depth (mbgs)																11-Jan-16
BH15-3		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
4	1.22 to 1.83	<0.020	<0.020	<0.050	<0.050	<10	<10	<50	<50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020
DUP		<0.020	<0.020	<0.050	<0.050	<10	<10	<50	<50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Benzene	B	0.21
Toluene	T	2.3
Ethylbenzene	E	2
Total Xylenes	X	3.1
F1	F1 (C6-C10)	55
F2	F2 (C10-C16)	98
F3	F3 (C16-C34)	300
F4	F4 (C34-C50)	2800
1,1-Dichloroethane	1,1-DCA	3.5
1,2-Dichlororethane	1,2-DCA	0.05
1,1-Dichloroethylene	1,1-DCE	0.05
Cis-1,2-Dichloroethylene	c-1,2-DCE	3.4
Trans-1,2,-Dichlorothylene	t-1,2-DCE	0.084
Tetrachloroethylene	PCE	0.28
Trichloroethylene	TCE	0.061
Vinyl Chloride	VC	0.02

LEGEND

- PROPERTY BOUNDARY
- BH15-5 — BOREHOLE NUMBER AND LOCATION (*WSP*, 2016)
- MW15-2 — NESTED MONITORING WELL NUMBER AND LOCATION (*WSP*, 2016)
- MW15-1 — BOREHOLE / MONITORING WELL NUMBER AND LOCATION (*GOLDER*, 2015)
- SOIL SAMPLE EXCEEDS TABLE 7 SCS
- SOIL SAMPLE MEETS TABLE 7 SCS
- LOCATION NOT SAMPLED

0 5m 10m 20m

HORIZONTAL 1:500

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

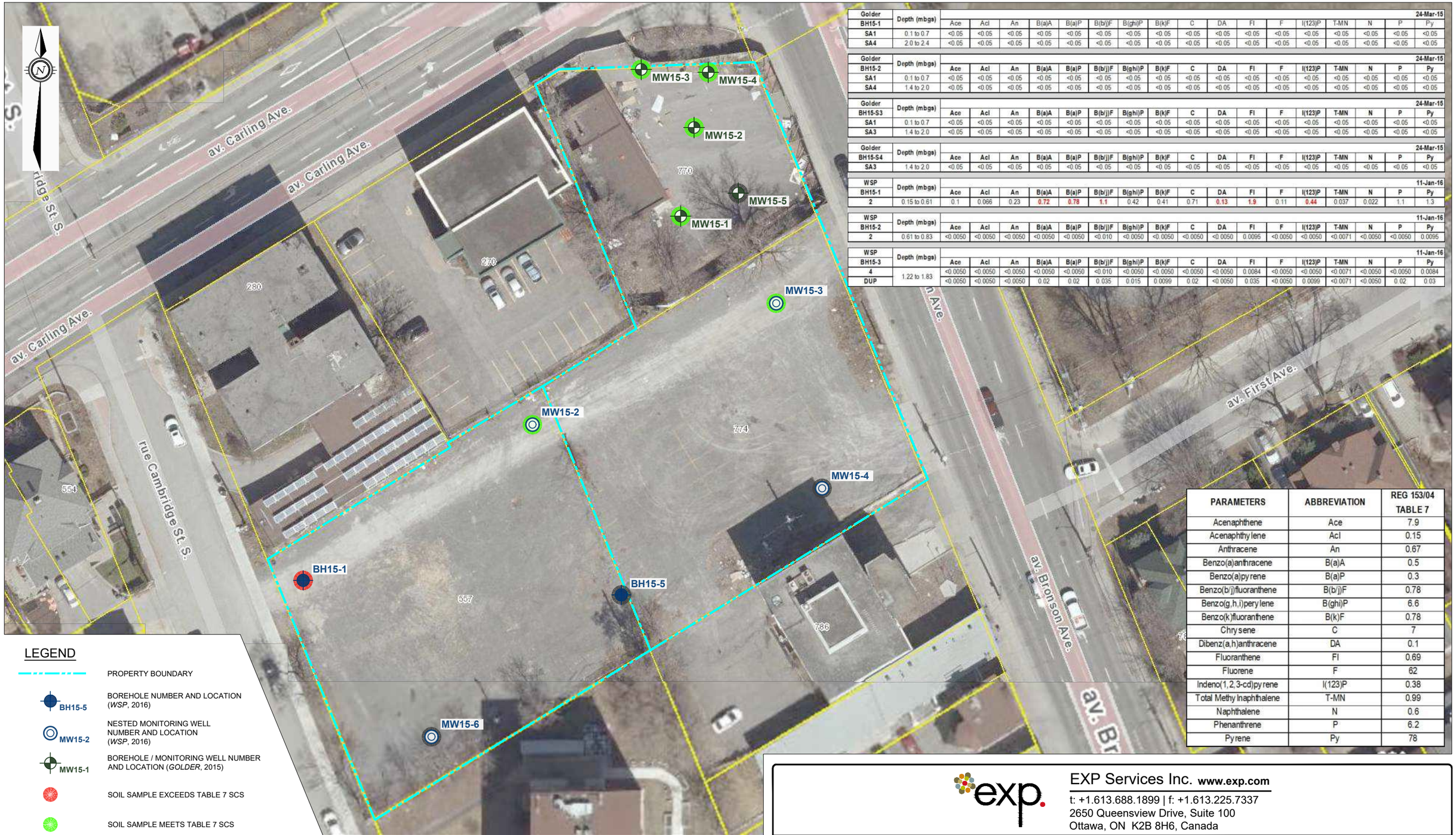
DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE: SOIL ANALYTICAL RESULTS – PHC & VOC

project no. OTT-22019409-A0
scale 1:500
FIG 7

Filename: E:\OTT\OTT-22019409-A0\60 Execution\65 Drawings\22019409-A0_Ph-2.dwg
Last Saved: Oct 6, 2022 12:47 PM Last Plotted: Oct 6, 2022 12:47 PM Plotted by: SeverA



Golder BH15-1	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py
																		24-Mar-15
SA1	0.1 to 0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SA4	2.0 to 2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Golder BH15-2	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py
																		24-Mar-15
SA1	0.1 to 0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SA4	1.4 to 2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Golder BH15-S3	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py
																		24-Mar-15
SA1	0.1 to 0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SA3	1.4 to 2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Golder BH15-S4	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py
																		24-Mar-15
SA3	1.4 to 2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

WSP BH15-1	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py
																		11-Jan-16
2	0.15 to 0.61	0.1	0.066	0.23	0.72	0.78	1.1	0.42	0.41	0.71	0.13	1.9	0.11	0.44	0.037	0.022	1.1	1.3

WSP BH15-2	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py
																		11-Jan-16
2	0.61 to 0.83	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	0.0095	<0.0050	<0.0050	<0.0071	<0.0050	<0.0050	0.0095

WSP BH15-3	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	FI	F	I(123)P	T-MN	N	P	Py
																		11-Jan-16
4	1.22 to 1.83	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	0.0084	<0.0050	<0.0050	<0.0071	<0.0050	<0.0050	0.0084
DUP		<0.0050	<0.0050	<0.0050	0.02	0.02	0.035	0.015	0.0099	0.02	<0.0050	0.035	<0.0050	0.0099	<0.0071	<0.0050	0.02	0.03

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Acenaphthene	Ace	7.9
Acenaphthylene	Acl	0.15
Anthracene	An	0.67
Benzo(a)anthracene	B(a)A	0.5
Benzo(a)pyrene	B(a)P	0.3
Benzo(b/j)fluoranthene	B(b/j)F	0.78
Benzo(g,h,i)perylene	B(ghi)P	6.6
Benzo(k)fluoranthene	B(k)F	0.78
Chrysene	C	7
Dibenz(a,h)anthracene	DA	0.1
Fluoranthene	FI	0.69
Fluorene	F	62
Indeno(1,2,3-cd)pyrene	I(123)P	0.38
Total Methylnaphthalene	T-MN	0.99
Naphthalene	N	0.6
Phenanthrene	P	6.2
Pyrene	Py	78

LEGEND

- PROPERTY BOUNDARY
- BH15-5 — BOREHOLE NUMBER AND LOCATION (*WSP*, 2016)
- MW15-2 — NESTED MONITORING WELL NUMBER AND LOCATION (*WSP*, 2016)
- MW15-1 — BOREHOLE / MONITORING WELL NUMBER AND LOCATION (*GOLDER*, 2015)
- SOIL SAMPLE EXCEEDS TABLE 7 SCS
- SOIL SAMPLE MEETS TABLE 7 SCS
- LOCATION NOT SAMPLED

0 5m 10m 20m

HORIZONTAL 1:500

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t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE: SOIL ANALYTICAL RESULTS – PAH

project no. OTT-22019409-A0
scale 1:500
FIG 8

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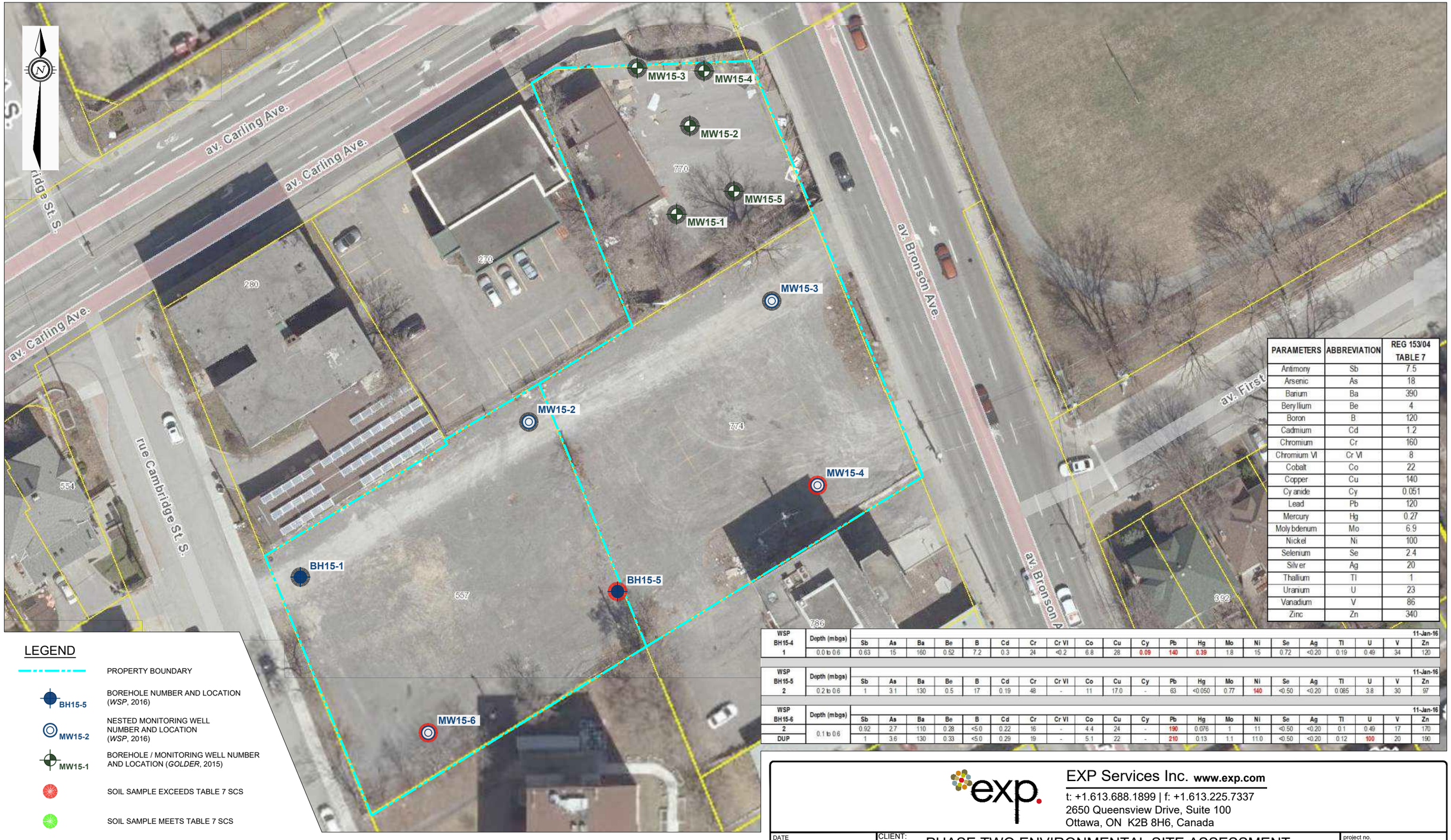

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Antimony	Sb	7.5
Arsenic	As	18
Barium	Ba	390
Beryllium	Be	4
Boron	B	120
Cadmium	Cd	1.2
Chromium	Cr	160
Chromium VI	Cr VI	8
Cobalt	Co	22
Copper	Cu	140
Cyanide	Cy	0.051
Lead	Pb	120
Mercury	Hg	0.27
Molybdenum	Mo	6.9
Nickel	Ni	100
Selenium	Se	2.4
Silver	Ag	20
Thallium	Tl	1
Uranium	U	23
Vanadium	V	86
Zinc	Zn	340

WSP BH15-4	Depth (mbgs)	11-Jan-16																				
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
1	0.0 to 0.6	0.63	15	160	0.52	7.2	0.3	24	<0.2	6.8	28	0.09	140	0.39	1.8	15	0.72	<0.20	0.19	0.49	34	120

WSP BH15-5	Depth (mbgs)	11-Jan-16																				
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
2	0.2 to 0.6	1	3.1	130	0.5	17	0.19	48	-	11	17.0	-	63	<0.050	0.77	140	<0.50	<0.20	0.085	3.8	30	97

WSP BH15-6	Depth (mbgs)	11-Jan-16																				
		Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
2	0.1 to 0.6	0.92	2.7	110	0.28	<5.0	0.22	16	-	4.4	24	-	190	0.076	1	11	<0.50	<0.20	0.1	0.49	17	170
DUP		1	3.6	130	0.33	<5.0	0.29	19	-	5.1	22	-	210	0.13	1.1	11.0	<0.50	<0.20	0.12	100	20	190

LEGEND

- PROPERTY BOUNDARY
- BH15-5 — BOREHOLE NUMBER AND LOCATION (*WSP*, 2016)
- MW15-2 — NESTED MONITORING WELL NUMBER AND LOCATION (*WSP*, 2016)
- MW15-1 — BOREHOLE / MONITORING WELL NUMBER AND LOCATION (*GOLDER*, 2015)
- SOIL SAMPLE EXCEEDS TABLE 7 SCS
- SOIL SAMPLE MEETS TABLE 7 SCS
- LOCATION NOT SAMPLED

0 5m 10m 20m

HORIZONTAL 1:500

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2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT:

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE:

SOIL ANALYTICAL RESULTS – INORGANICS

project no. OTT-22019409-A0
scale 1:500
FIG 9

Filename: E:\OTT\OTT-22019409-A0\60 Execution\65 Drawings\22019409-A0_Ph-2.dwg
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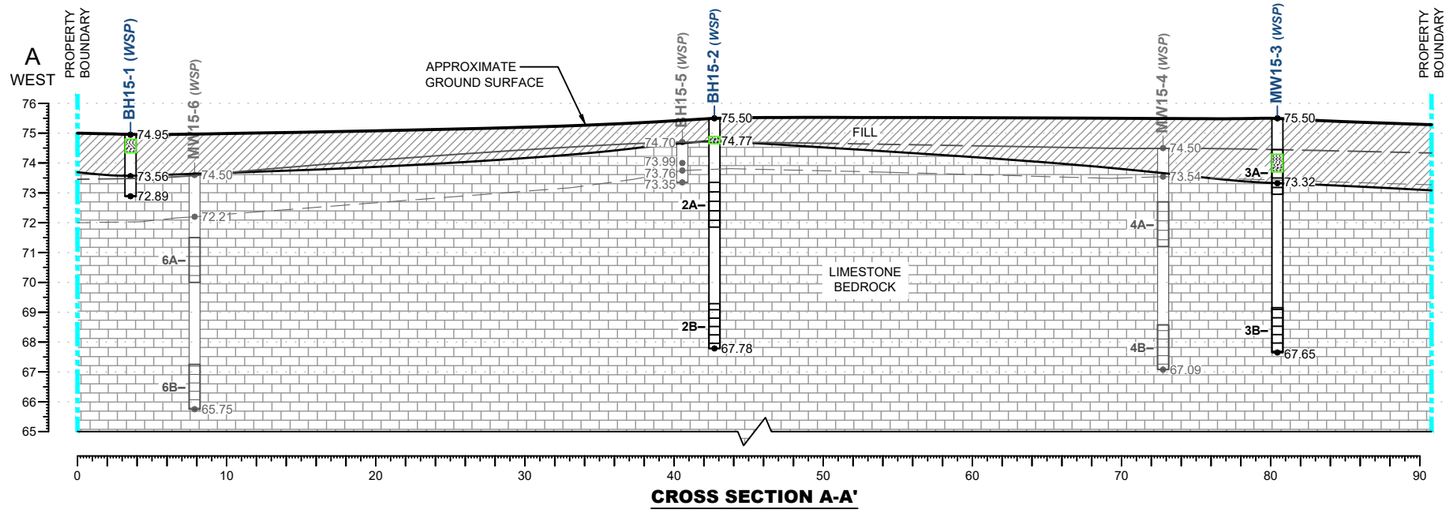
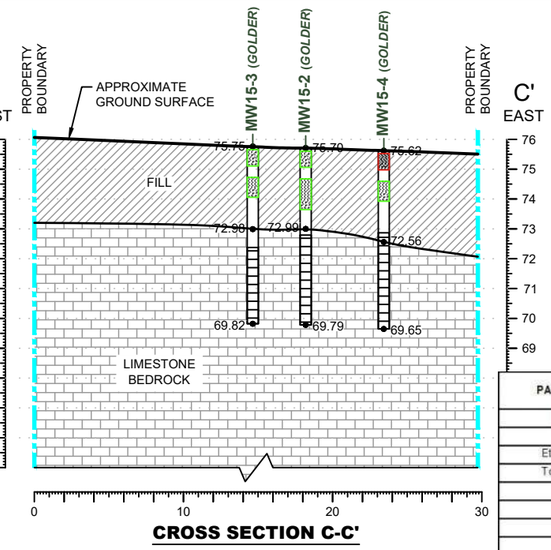
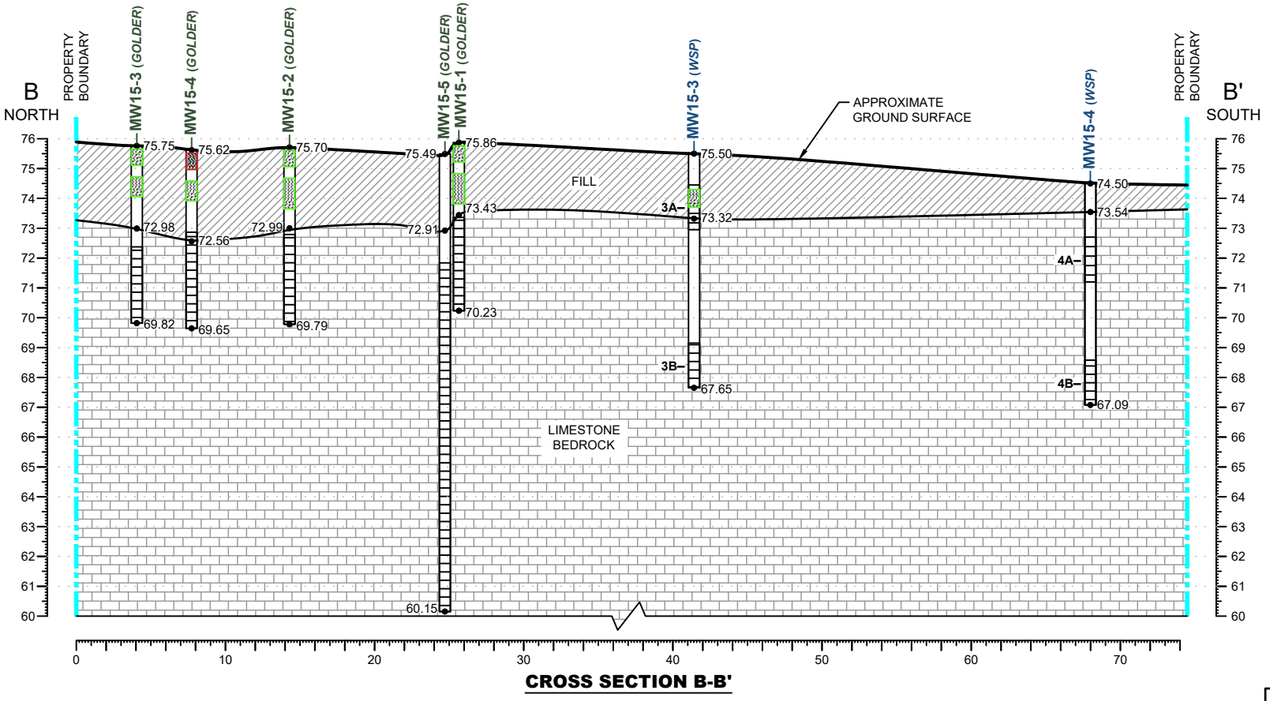




PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Benzene	B	0.21
Toluene	T	2.3
Ethylbenzene	E	2
Total Xylenes	X	3.1
F1	F1 (C6-C10)	55
F2	F2 (C10-C16)	98
F3	F3 (C16-C34)	300
F4	F4 (C34-C50)	2800
1,1-Dichloroethane	1,1-DCA	3.5
1,2-Dichlororethane	1,2-DCA	0.05
1,1-Dichloroethylene	1,1-DCE	0.05
Cis-1,2-Dichloroethylene	c-1,2-DCE	3.4
Trans-1,2,-Dichlorothylene	t-1,2-DCE	0.084
Tetrachloroethylene	PCE	0.28
Trichloroethylene	TCE	0.061
Vinyl Chloride	VC	0.02



Golder	Depth (mbgs)	24-Mar-15															
BH15-1		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SA1	0.1 to 0.7	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02
SA4	2.0 to 2.4	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02

Golder	Depth (mbgs)	24-Mar-15															
BH15-2		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SA1	0.1 to 0.7	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02
SA4	2.0 to 2.4	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02

Golder	Depth (mbgs)	24-Mar-15															
BH15-S3		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SA1	0.1 to 0.7	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02
SA3	1.4 to 2.0	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02

Golder	Depth (mbgs)	24-Mar-15															
BH15-S4		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SA1	0.1 to 0.7	<0.02	<0.05	<0.05	<0.05	<5	<10	740	1100	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02
SA3	1.4 to 2.0	<0.02	<0.05	<0.05	<0.05	<5	<10	<50	<50	<0.02	<0.03	<0.05	<0.02	<0.05	<0.05	<0.03	<0.02

WSP	Depth (mbgs)	11-Jan-16															
BH15-1		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
2	0.15 to 0.61	<0.020	<0.020	<0.050	<0.050	<10	<10	<50	<50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020

WSP	Depth (mbgs)	11-Jan-16															
BH15-2		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
2	0.61 to 0.83	<0.020	<0.020	<0.050	<0.050	<10	<10	<50	<50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020

WSP	Depth (mbgs)	11-Jan-16															
BH15-3		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
4	1.22 to 1.83	<0.020	<0.020	<0.050	<0.050	<10	<10	<50	<50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020
DUP		<0.020	<0.020	<0.050	<0.050	<10	<10	<50	<50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020

LEGEND

- PROPERTY BOUNDARY
- SOIL SAMPLE EXCEEDS TABLE 7 SCS
- SOIL SAMPLE MEETS TABLE 7 SCS
- 2A– SCREEN NAME AND LOCATION/DEPTH (*WSP*)

HORIZONTAL 0 4m 8m 16m 1:400

VERTICAL 0 2m 4m 6m 1:200

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2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE: SOIL CROSS SECTIONS A-A', B-B', C-C' – PHC & VOC

project no. OTT-22019409-A0
scale HORIZ 1:400, VERT 1:200

FIG 10

Filename: E:\OTT\OTT-22019409-A0\60 Execution\65 Drawings\22019409-A0_Ph-2.dwg
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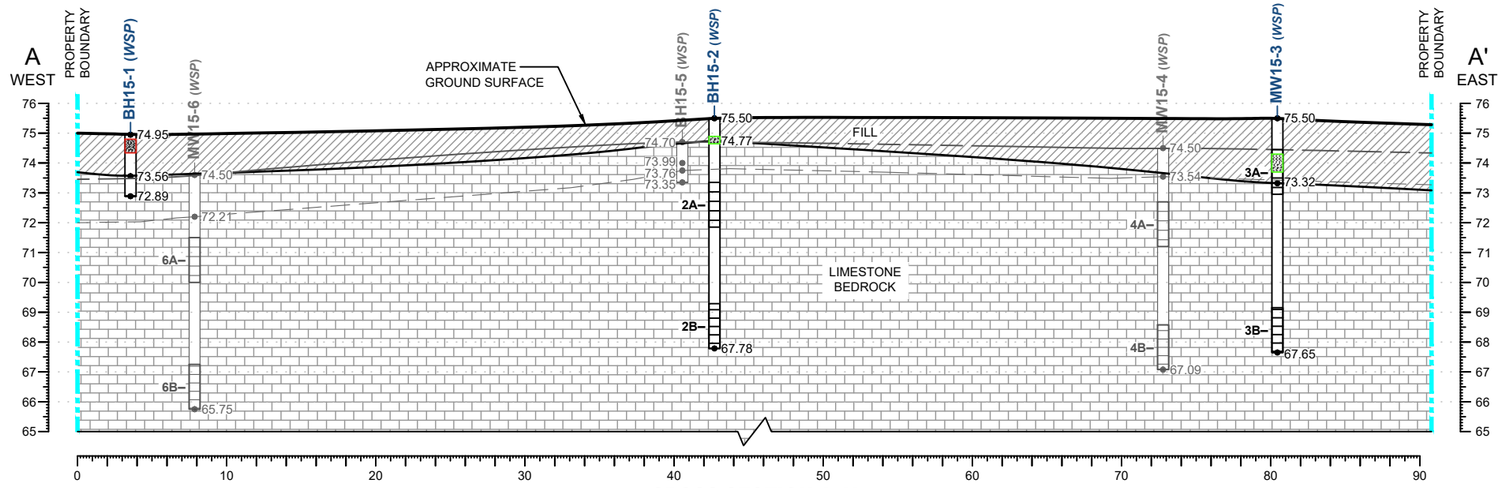
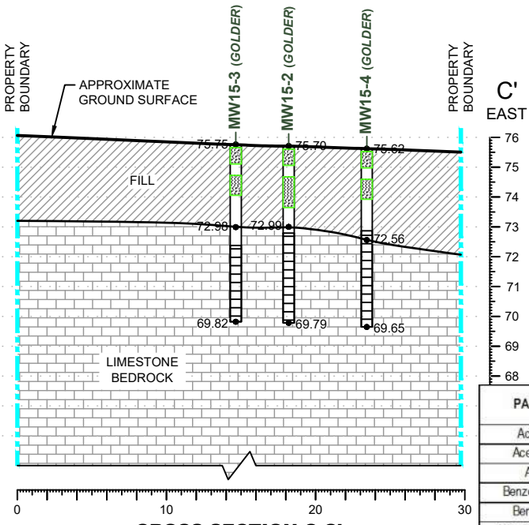
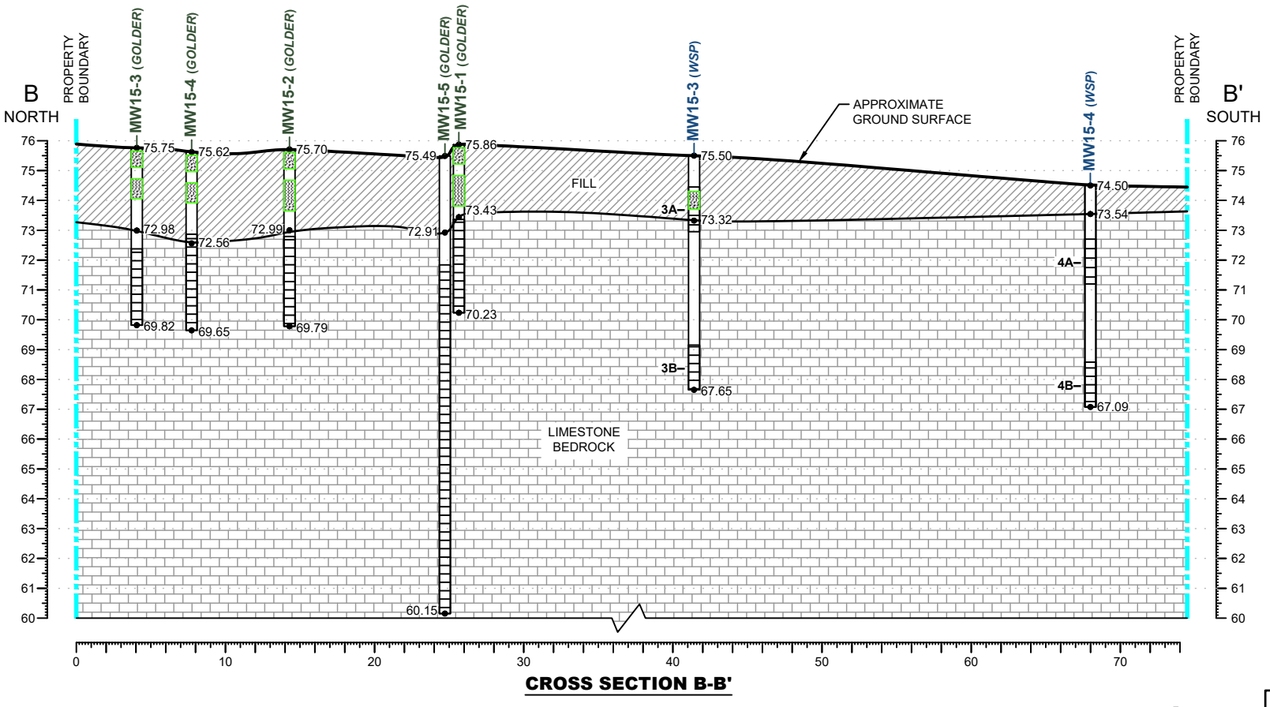


CROSS SECTION A-A'



CROSS SECTION C-C'



CROSS SECTION B-B'

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Acenaphthene	Ace	7.9
Acenaphthylene	Acl	0.15
Anthracene	An	0.67
Benzo(a)anthracene	B(a)A	0.5
Benzo(a)pyrene	B(a)P	0.3
Benzo(b/j)fluoranthene	B(b/j)F	0.78
Benzo(g,h,i)perylene	B(ghi)P	6.6
Benzo(k)fluoranthene	B(k)F	0.78
Chrysene	C	7
Dibenz(a,h)anthracene	DA	0.1
Fluoranthene	Fl	0.69
Fluorene	F	62
Indeno(1,2,3-cd)pyrene	I(123)P	0.38
Total Methylnaphthalene	T-MN	0.99
Naphthalene	N	0.6
Phenanthrene	P	6.2
Pyrene	Py	78

Golder	Depth (mbgs)																24-Mar-15
BH15-1		Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
SA1	0.1 to 0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SA4	2.0 to 2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Golder	Depth (mbgs)																24-Mar-15
BH15-2		Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
SA1	0.1 to 0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SA4	1.4 to 2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Golder	Depth (mbgs)																24-Mar-15
BH15-S3		Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
SA1	0.1 to 0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SA3	1.4 to 2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Golder	Depth (mbgs)																24-Mar-15
BH15-S4		Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
SA3	1.4 to 2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

WSP	Depth (mbgs)																11-Jan-16
BH15-1		Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
2	0.15 to 0.61	0.1	0.066	0.23	0.72	0.78	1.1	0.42	0.41	0.71	0.13	1.9	0.11	0.44	0.037	0.022	1.1	1.3

WSP	Depth (mbgs)																11-Jan-16
BH15-2		Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
2	0.61 to 0.83	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	0.0095	<0.0050	<0.0050	<0.0071	<0.0050	<0.0050	0.0095

WSP	Depth (mbgs)																11-Jan-16
BH15-3		Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
4	1.22 to 1.83	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	0.0084	<0.0050	<0.0050	<0.0071	<0.0050	<0.0050	0.0084
DUP		<0.0050	<0.0050	<0.0050	0.02	0.02	0.035	0.015	0.0099	0.02	<0.0050	0.035	<0.0050	0.0099	<0.0071	<0.0050	0.02	0.03

LEGEND

- PROPERTY BOUNDARY
- SOIL SAMPLE EXCEEDS TABLE 7 SCS
- SOIL SAMPLE MEETS TABLE 7 SCS
- 2A– SCREEN NAME AND LOCATION/DEPTH (*WSP*)

HORIZONTAL 0 4m 8m 16m 1:400

VERTICAL 0 2m 4m 6m 1:200

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DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE: SOIL CROSS SECTIONS A-A', B-B', C-C' – PAH

project no. OTT-22019409-A0
scale HORIZ 1:400, VERT 1:200

FIG 11

Filename: E:\OTT\OTT-22019409-A0\60 Execution\65 Drawings\22019409-A0_Ph-2.dwg
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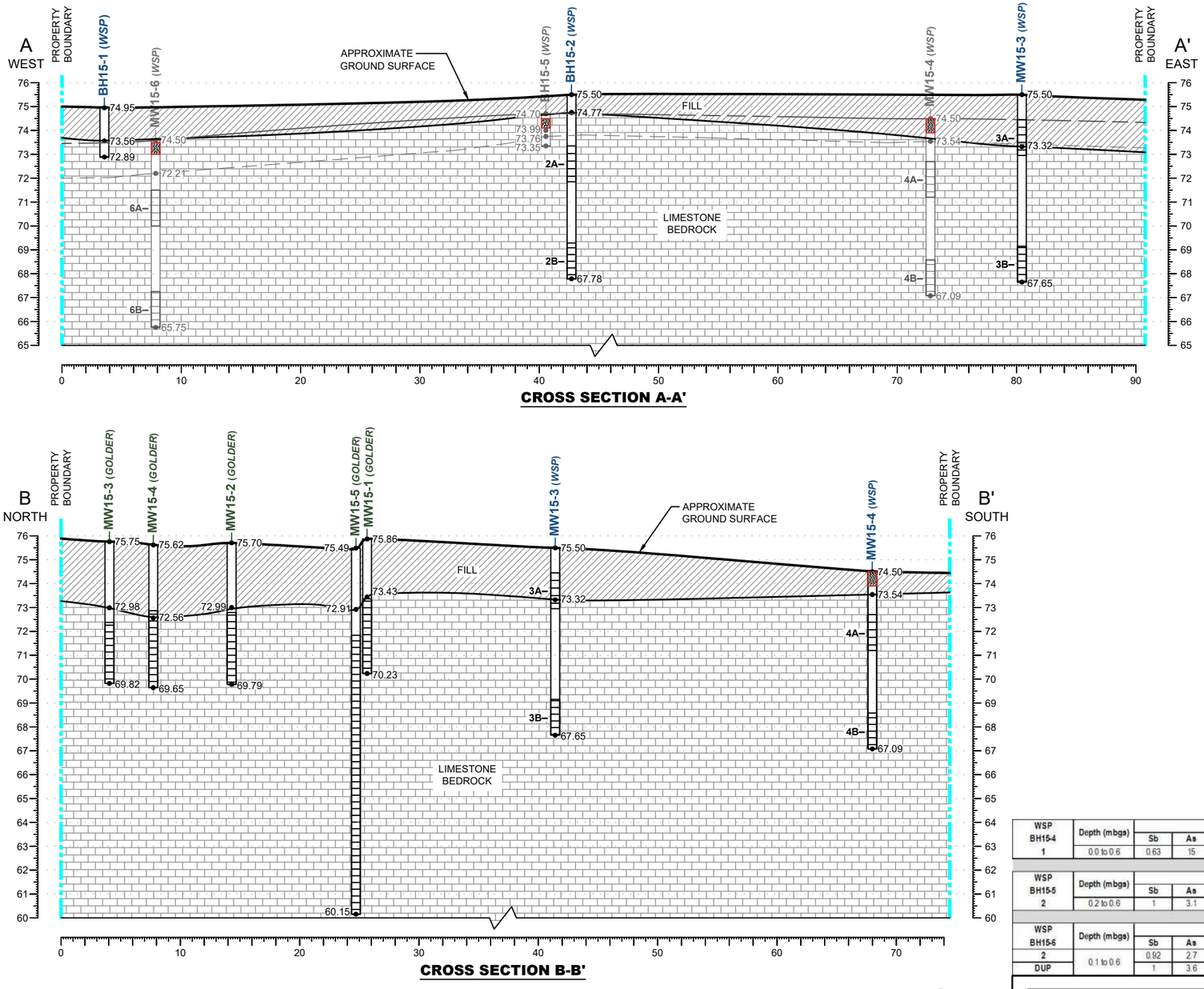
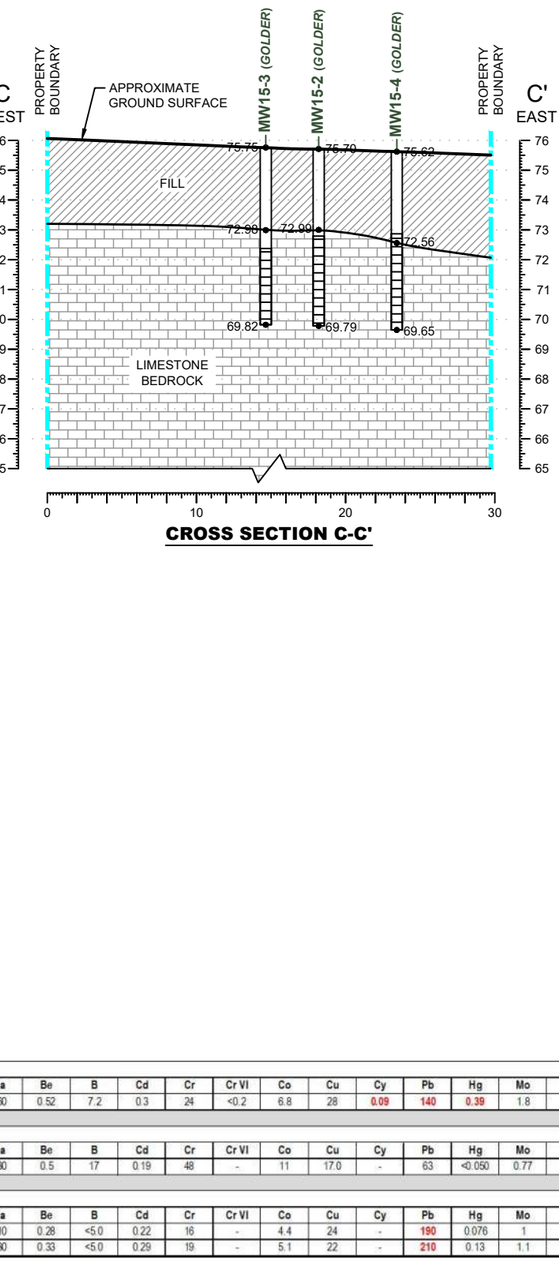


CROSS SECTION A-A'



CROSS SECTION C-C'

CROSS SECTION B-B'

LEGEND

- PROPERTY BOUNDARY
- SOIL SAMPLE EXCEEDS TABLE 7 SCS
- SOIL SAMPLE MEETS TABLE 7 SCS
- 2A– SCREEN NAME AND LOCATION/DEPTH (*WSP*)

HORIZONTAL 0 4m 8m 16m — 1:400

VERTICAL 0 2m 4m 6m — 1:200

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Antimony	Sb	7.5
Arsenic	As	18
Barium	Ba	390
Beryllium	Be	4
Boron	B	120
Cadmium	Cd	1.2
Chromium	Cr	160
Chromium VI	Cr VI	8
Cobalt	Co	22
Copper	Cu	140
Cyanide	Cy	0.051
Lead	Pb	120
Mercury	Hg	0.27
Molybdenum	Mo	6.9
Nickel	Ni	100
Selenium	Se	2.4
Silver	Ag	20
Thallium	Tl	1
Uranium	U	23
Vanadium	V	86
Zinc	Zn	340

WSP BH15-4	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
		11-Jan-16																				
1	0.0 to 0.6	0.63	15	160	0.52	7.2	0.3	24	<0.2	6.8	28	0.09	140	0.39	1.8	15	0.72	<0.20	0.19	0.49	34	120

WSP BH15-5	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
		11-Jan-16																				
2	0.2 to 0.6	1	3.1	130	0.5	17	0.19	48	-	11	17.0	-	63	<0.050	0.77	140	<0.50	<0.20	0.085	3.8	30	97

WSP BH15-6	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Cr VI	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Tl	U	V	Zn
		11-Jan-16																				
2	0.1 to 0.6	0.92	2.7	110	0.28	<5.0	0.22	16	-	4.4	24	-	190	0.076	1	11	<0.50	<0.20	0.1	0.49	17	170
DUP		1	3.6	130	0.33	<5.0	0.29	19	-	5.1	22	-	210	0.13	1.1	11.0	<0.50	<0.20	0.12	100	20	190

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t: +1.613.688.1899 | f: +1.613.225.7337
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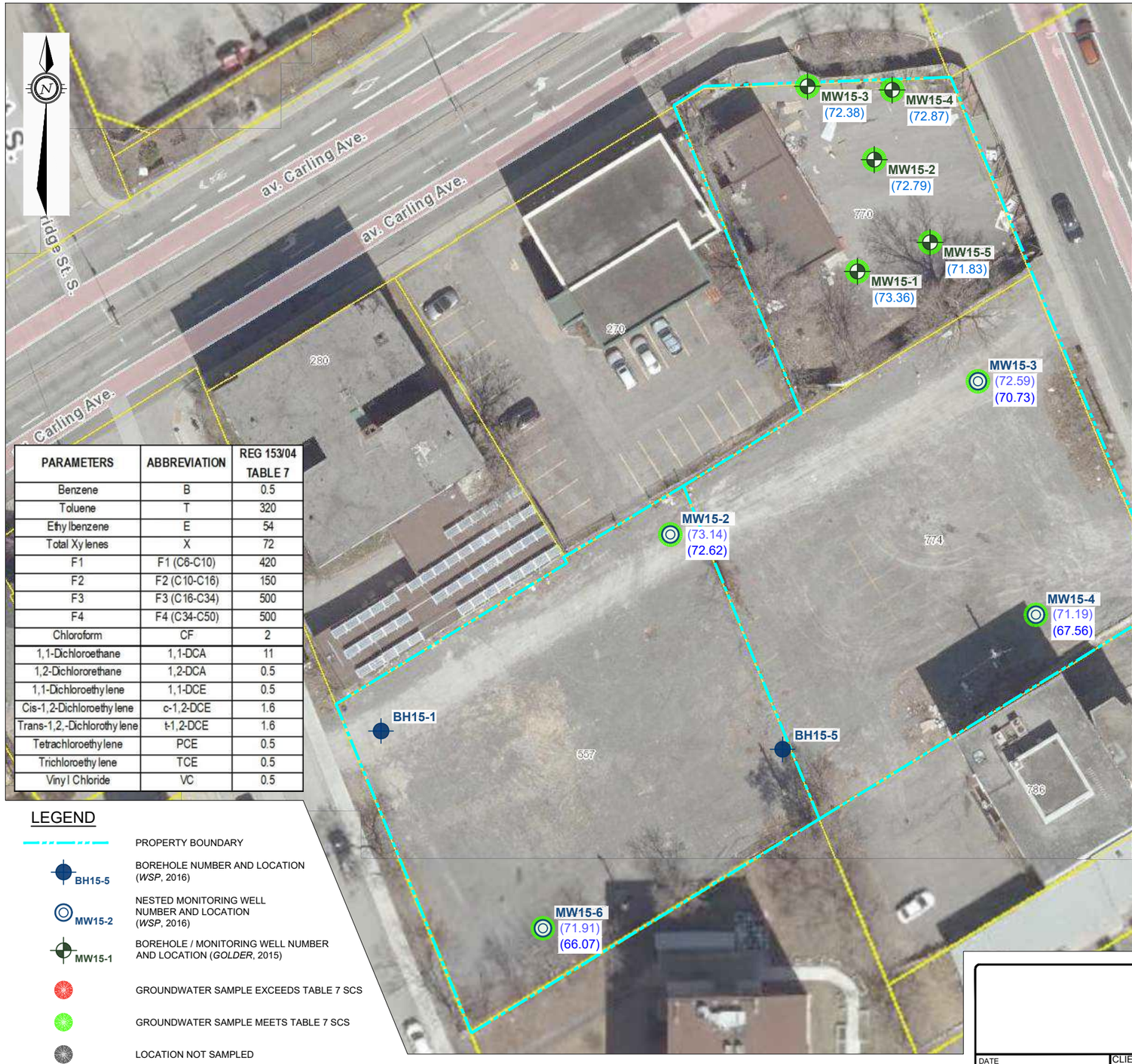
DATE: OCTOBER 2022	CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON		project no. OTT-22019409-A0
DESIGN: LW / CHECKED: MM			scale: HORIZ 1:400, VERT 1:200
DRAWN BY: AS	TITLE: SOIL CROSS SECTIONS A-A', B-B', C-C' – INORGANICS		FIG 12



PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Benzene	B	0.5
Toluene	T	320
Ethylbenzene	E	54
Total Xylenes	X	72
F1	F1 (C6-C10)	420
F2	F2 (C10-C16)	150
F3	F3 (C16-C34)	500
F4	F4 (C34-C50)	500
Chloroform	CF	2
1,1-Dichloroethane	1,1-DCA	11
1,2-Dichlororethane	1,2-DCA	0.5
1,1-Dichloroethylene	1,1-DCE	0.5
Cis-1,2-Dichloroethylene	c-1,2-DCE	1.6
Trans-1,2,-Dichlorothylene	t-1,2-DCE	1.6
Tetrachloroethylene	PCE	0.5
Trichloroethylene	TCE	0.5
Vinyl Chloride	VC	0.5

LEGEND

- PROPERTY BOUNDARY
- BH15-5 — BOREHOLE NUMBER AND LOCATION (*WSP*, 2016)
- MW15-2 — NESTED MONITORING WELL NUMBER AND LOCATION (*WSP*, 2016)
- MW15-1 — BOREHOLE / MONITORING WELL NUMBER AND LOCATION (*GOLDER*, 2015)
- GROUNDWATER SAMPLE EXCEEDS TABLE 7 SCS
- GROUNDWATER SAMPLE MEETS TABLE 7 SCS
- LOCATION NOT SAMPLED
- (72.59) GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - SHALLOW
- (70.73) GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - DEEP
- (71.83) GROUNDWATER ELEVATION FROM MARCH 27, 2016 (*GOLDER*)

0 5m 10m 20m
HORIZONTAL 1:500

Golder																	Screen Interval 4.1 to 5.6 mbgs
BH15-1	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
27-Mar-15	<0.20	0.67	<0.10	<0.20	<25	<100	<100	<100	2.1	<0.30	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<0.17
11-Aug-22	<0.5	<0.5	<0.5	<1.1	<25	< 50	< 400	< 400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2

Golder																	Screen Interval 4.4 to 5.9 mbgs
BH15-2	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
27-Mar-15	1.8	1.6	<0.20	0.51	<25	<100	<100	<100	2.8	<0.60	<0.40	<0.60	<0.40	<0.40	<0.40	<0.40	<0.37
27-Mar-15 (DUP)	<0.20	1.5	<0.10	0.46	<25	<100	<100	<100	2.8	<0.30	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<0.17
11-Aug-22	<0.5	<0.5	<0.5	<1.1	<25	< 50	< 400	< 400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2

Golder																	Screen Interval 4.4 to 5.9 mbgs
BH15-3	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
27-Mar-15	<0.20	1.5	<0.10	0.47	<25	<100	<100	<100	3.2	<0.30	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<0.17
11-Aug-22	<0.5	<0.5	<0.5	<1.1	<25	< 50	< 400	< 400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2

Golder																	Screen Interval 4.4 to 6.0 mbgs
BH15-4	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
27-Mar-15	<0.40	0.66	0.55	5.2	30	<100	<100	<100	0.91	<0.60	<0.40	<0.60	<0.40	<0.40	<0.40	<0.40	<0.34

Golder																	Screen Interval 7.8 to 15.3 mbgs
BH15-5	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
11-Aug-22	<0.5	<0.5	<0.5	<1.1	<25	<50	<400	<400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
11-Aug-22 (DUP)	<0.5	<0.5	<0.5	<1.1	<25	<50	<400	<400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2

WSP																	Screen Interval 2.1 to 4.0 mbgs
BH15-2A	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.24	<0.20	0.25	<25	<100	<200	<200	1.6	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																	Screen Interval 6.3 to 7.8 mbgs
BH15-2B	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.22	<0.20	<0.20	<25	<100	<200	<200	1.2	<0.20	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20
19-Jan-16 (DUP)	<0.20	0.22	<0.20	<0.20	<25	<100	<200	<200	1.3	<0.20	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																	Screen Interval 1.0 to 2.6 mbgs
BH15-3A	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	0.83	2.9	<0.20	2.2	<25	<100	<200	<200	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																	Screen Interval 6.3 to 7.8 mbgs
BH15-3B	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.27	<0.20	0.29	<25	<100	<200	<200	4.4	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16 (Dup)	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																	Screen Interval 2.2 to 3.7 mbgs
BH15-4A	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	0.27	0.92	<0.20	0.70	<25	<100	<200	<200	4.4	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16 (Dup)	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																	Screen Interval 5.9 to 7.4 mbgs
BH15-4B	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.24	<0.20	<0.20	<25	<100	<200	<200	-	-	-	-	-	-	-	-	-
21-Jan-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	14	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
16-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	1.7	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	0.9	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																	Screen Interval 2.1 to 3.7 mbgs
BH15-5A	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.78	<0.20	0.40	<25	<100	<200	<200	4.6	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	1.3	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	1.0	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																	Screen Interval 6.4 to 8.0 mbgs
BH15-6B	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	-	-	-	-	<25	<100	<200	<200	-	-	-	-	-	-	-	-	-
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	3	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	1.3	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

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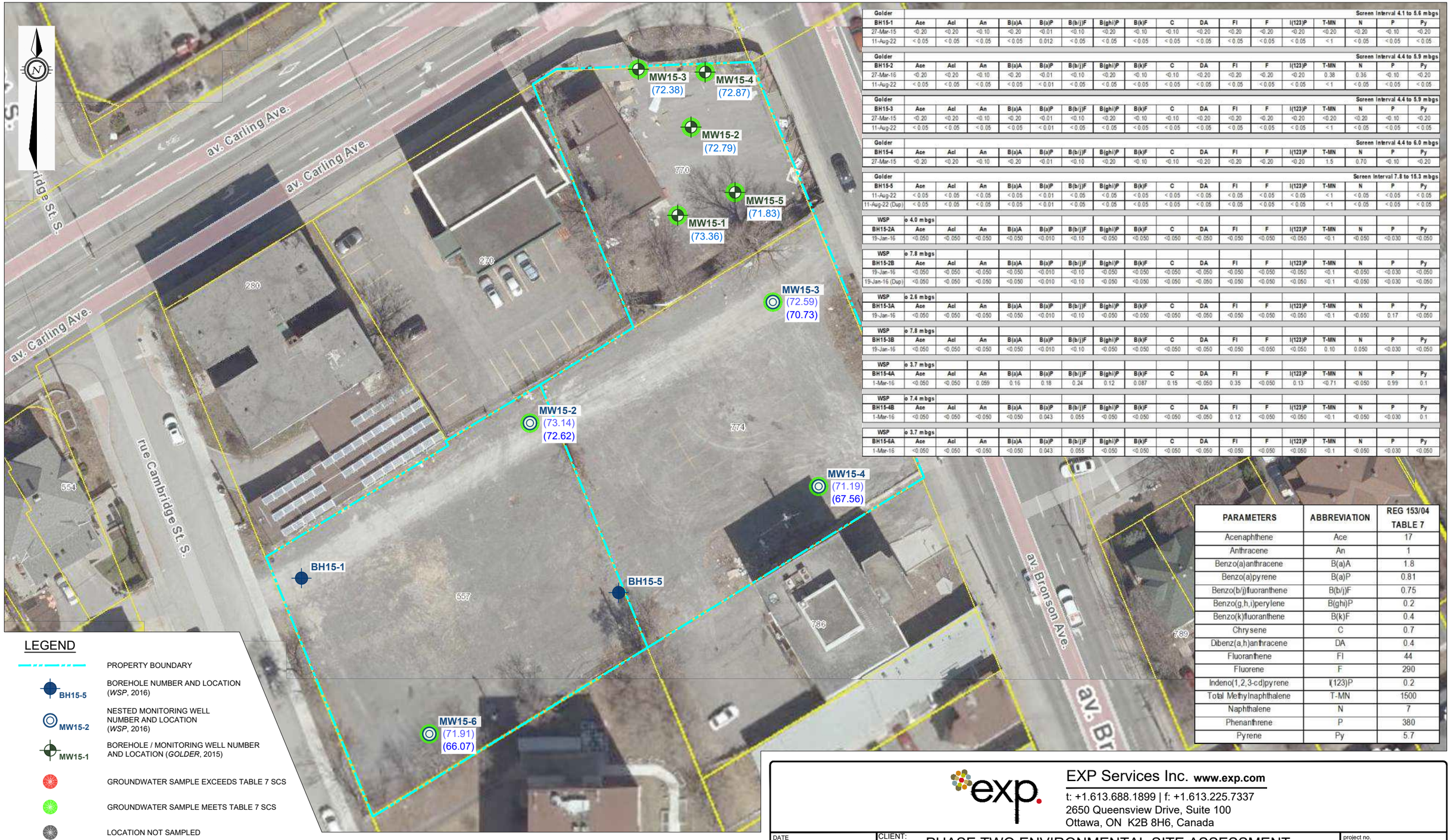
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE	CLIENT:	project no.
OCTOBER 2022	PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON	OTT-22019409-A0
DESIGN: LW / CHECKED: MM	TITLE: GROUNDWATER ANALYTICAL RESULTS – PHC & VOC	scale: 1:500
DRAWN BY: AS		FIG 13

Filename: E:\OTT\OTT-22019409-A0\60 Execution\65 Drawings\22019409-A0_Ph-2.dwg
Last Saved: Oct 6, 2022 12:47 PM Last Plotted: Oct 6, 2022 12:47 PM Plotted by: SeverA



Golder																Screen Interval 4.1 to 5.6 mbgs	
BH15-1	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
27-Mar-15	<0.20	<0.20	<0.10	<0.20	<0.01	<0.10	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.10	<0.20
11-Aug-22	< 0.05	< 0.05	< 0.05	< 0.05	0.012	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05

Golder																Screen Interval 4.4 to 5.9 mbgs	
BH15-2	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
27-Mar-16	<0.20	<0.20	<0.10	<0.20	<0.01	<0.10	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	0.38	0.36	<0.10	<0.20
11-Aug-22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05

Golder																Screen Interval 4.4 to 5.9 mbgs	
BH15-3	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
27-Mar-15	<0.20	<0.20	<0.10	<0.20	<0.01	<0.10	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.10	<0.20
11-Aug-22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05

Golder																Screen Interval 4.4 to 6.0 mbgs	
BH15-4	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
27-Mar-15	<0.20	<0.20	<0.10	<0.20	<0.01	<0.10	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	1.5	0.70	<0.10	<0.20

Golder																Screen Interval 7.8 to 15.3 mbgs	
BH15-5	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
11-Aug-22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05
11-Aug-22 (Dup)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05

WSP	o 4.0 mbgs																
BH15-2A	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
19-Jan-16	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	<0.030	<0.050

WSP	o 7.8 mbgs																
BH15-2B	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
19-Jan-16	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	<0.030	<0.050
19-Jan-16 (Dup)	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	<0.030	<0.050

WSP	o 2.6 mbgs																
BH15-3A	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
19-Jan-16	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	0.17	<0.050

WSP	o 7.8 mbgs																
BH15-3B	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
19-Jan-16	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.10	0.050	<0.030	<0.050

WSP	o 3.7 mbgs																
BH15-4A	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
1-Mar-16	<0.050	<0.050	0.059	0.16	0.18	0.24	0.12	0.087	0.15	<0.050	0.35	<0.050	0.13	<0.71	<0.050	0.99	0.1

WSP	o 7.4 mbgs																
BH15-4B	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
1-Mar-16	<0.050	<0.050	<0.050	<0.050	0.043	0.055	<0.050	<0.050	<0.050	<0.050	0.12	<0.050	<0.050	<0.1	<0.050	<0.030	0.1

WSP	o 3.7 mbgs																
BH15-6A	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
1-Mar-16	<0.050	<0.050	<0.050	<0.050	0.043	0.055	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	<0.030	<0.050

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Acenaphthene	Ace	17
Anthracene	An	1
Benzo(a)anthracene	B(a)A	1.8
Benzo(a)pyrene	B(a)P	0.81
Benzo(b/j)fluoranthene	B(b/j)F	0.75
Benzo(g,h,i)perylene	B(ghi)P	0.2
Benzo(k)fluoranthene	B(k)F	0.4
Chrysene	C	0.7
Dibenz(a,h)anthracene	DA	0.4
Fluoranthene	Fl	44
Fluorene	F	290
Indeno(1,2,3-cd)pyrene	I(123)P	0.2
Total Methylnaphthalene	T-MN	1500
Naphthalene	N	7
Phenanthrene	P	380
Pyrene	Py	5.7

LEGEND

- PROPERTY BOUNDARY
- BH15-5 — BOREHOLE NUMBER AND LOCATION (*WSP*, 2016)
- MW15-2 — NESTED MONITORING WELL NUMBER AND LOCATION (*WSP*, 2016)
- MW15-1 — BOREHOLE / MONITORING WELL NUMBER AND LOCATION (*GOLDER*, 2015)
- GROUNDWATER SAMPLE EXCEEDS TABLE 7 SCS
- GROUNDWATER SAMPLE MEETS TABLE 7 SCS
- LOCATION NOT SAMPLED
- (72.59) GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - SHALLOW
- (70.73) GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - DEEP
- (71.83) GROUNDWATER ELEVATION FROM MARCH 27, 2016 (*GOLDER*)

0 5m 10m 20m

HORIZONTAL 1:500

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE: GROUNDWATER ANALYTICAL RESULTS – PAH

project no. OTT-22019409-A0
scale 1:500
FIG 14

Filename: E:\OTT\OTT-22019409-A0\60 Execution\65 Drawings\22019409-A0_Ph-2.dwg
Last Saved: Oct 6, 2022 12:47 PM Last Plotted: Oct 6, 2022 12:47 PM Plotted by: SeverA

WSP																						Screen Interval 2.1 to 4.0 mbgs			
BH15-2A	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn		
21-Jan-16	<0.50	<1.0	110	<0.50	39	<0.10	340000	<5.0	<0.5	2.3	5.8	<2	3.7	<0.1	3.1	3.6	300000	<2.0	<0.10	0.05	1.7	1.7	12		

WSP																						Screen Interval 6.3 to 7.8 mbgs			
BH15-2B	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn		
21-Jan-16	<0.50	<1.0	190	<0.50	58	<0.10	570000	<5.0	<0.5	1.2	1.7	<2	<0.50	<0.1	1.9	2.9	450000	<2.0	<0.10	<0.050	2	<0.50	<5.0		
21-Jan-16 (Dup)	<0.50	<1.0	190	<0.50	61	<0.10	570000	<5.0	<0.5	1.1	1.7	<2	<0.50	<0.1	2	2.5	460000	<2.0	<0.10	<0.050	1.8	<0.50	<5.0		

WSP																						Screen Interval 1.0 to 2.6 mbgs			
BH15-3A	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn		
21-Jan-16	0.62	<1.0	77	<0.50	300	<0.10	460000	<5.0	<0.5	1.2	1.7	<2	<0.50	<0.1	4.7	3.4	520000	2.9	<0.10	0.074	3.1	<0.50	<5.0		

WSP																						Screen Interval 6.3 to 7.8 mbgs			
BH15-3B	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn		
21-Jan-16	<0.50	<1.0	190	<0.50	870	<0.10	970000	<5.0	<0.5	0.92	<1.0	<2	<0.50	<0.1	0.98	1	890000	<2.0	<0.10	<0.050	0.88	<1.0	<5.0		

WSP																						Screen Interval 2.2 to 3.7 mbgs			
BH15-4A	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn		
1-Mar-16	<0.50	<1.0	210	<0.50	60	<0.10	950000	<5.0	<0.50	<0.50	2.3	<2	<0.50	<0.1	3.1	2.1	520000	<2.0	<0.10	<0.050	2	<1.0	<5.0		

WSP																						Screen Interval 5.9 to 7.4 mbgs			
BH15-4B	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn		
1-Mar-16	<0.50	<1.0	0.2	<0.50	380	<0.10	480000	<5.0	<2.5	<0.50	3.2	<2	<0.50	<0.1	14	2.5	280000	<2.0	<0.10	0.054	2.5	<0.050	<5.0		

WSP	3.7 mbgs																								
BH15-6A	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn		
1-Mar-16	1.1	1	220	<0.50	930	<0.10	110000	<5.0	<0.50	0.59	1.4	<2	<0.50	<0.1	22	1.3	120000	<2.0	<0.10	<0.050	4.7	<0.050	<5.0		

WSP	8.0 mbgs																								
BH15-6B	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn		
1-Mar-16	0.75	1.5	65	<0.50	660	<0.10	140000	<5.0	<0.50	<0.50	1.6	-	<0.50	-	3.4	<1.0	260000	<2.0	<0.10	<0.050	2.6	0.96	<5.0		

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Antimony	Sb	16000
Arsenic	As	1500
Barium	Ba	23000
Beryllium	Be	53
Boron	B	36000
Cadmium	Cd	2.1
Chloride	Cl	1800000
Chromium	Cr	640
Chromium (VI)	Cr IV	110
Cobalt	Co	52
Copper	Cu	69
Cyanide	Cy	52
Lead	Pb	20
Mercury	Hg	0.1
Molybdenum	Mo	7300
Nickel	Ni	390
Selenium	Se	50
Silver	Ag	1.2
Sodium	Na	1800000
Thallium	Tl	400
Uranium	U	330
Vanadium	V	200
Zinc	Zn	890

LEGEND

- PROPERTY BOUNDARY
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- MW15-2 — NESTED MONITORING WELL NUMBER AND LOCATION (*WSP*, 2016)
- MW15-1 — BOREHOLE / MONITORING WELL NUMBER AND LOCATION (*GOLDER*, 2015)
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- (71.83) GROUNDWATER ELEVATION FROM MARCH 27, 2016 (*GOLDER*)

0 5m 10m 20m

HORIZONTAL 1:500

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE: GROUNDWATER ANALYTICAL RESULTS – INORGANICS

project no. OTT-22019409-A0
scale 1:500
FIG 15

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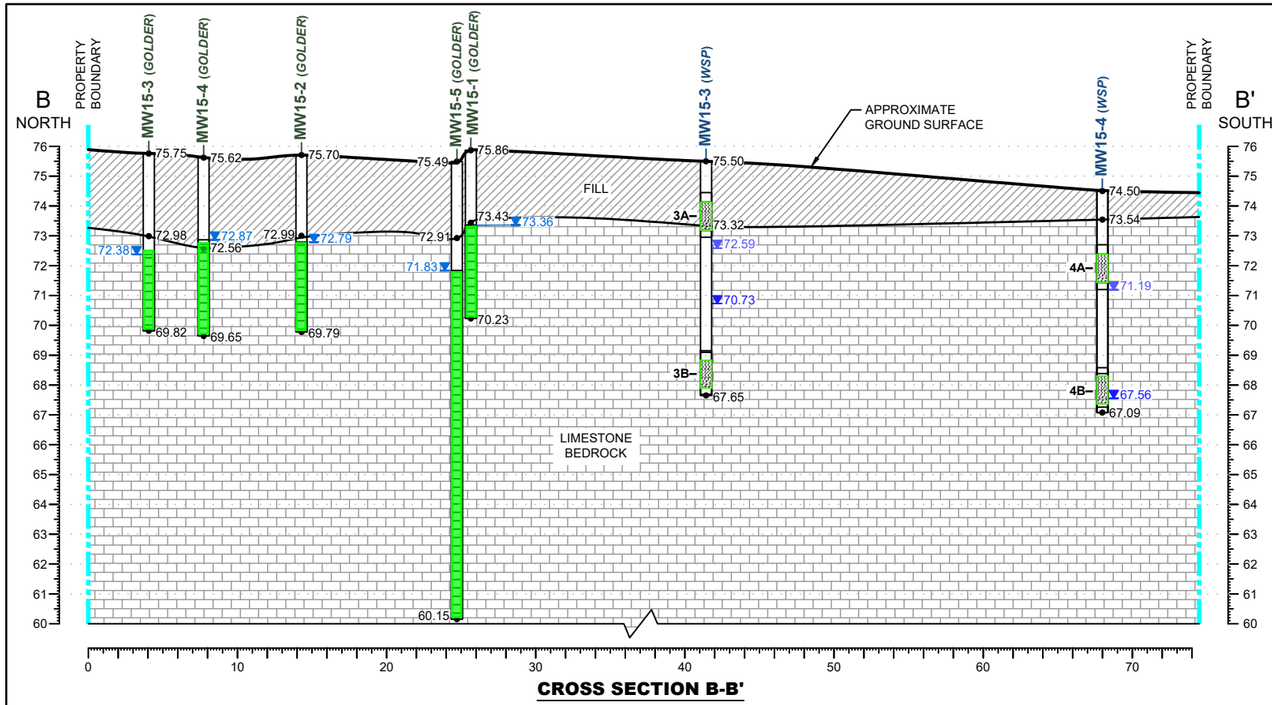
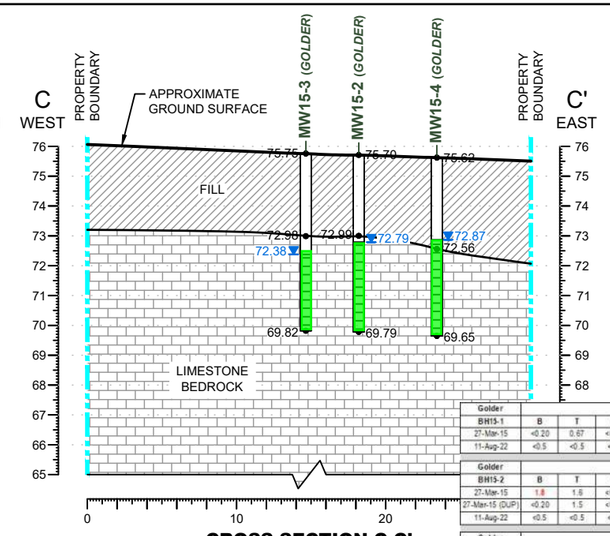
Last Saved: Oct 6, 2022 12:47 PM Last Plotted: Oct 6, 2022 12:47 PM Plotted by: SeverA





PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Benzene	B	0.5
Toluene	T	320
Ethylbenzene	E	54
Total Xylenes	X	72
F1	F1 (C6-C10)	420
F2	F2 (C10-C16)	150
F3	F3 (C16-C34)	500
F4	F4 (C34-C50)	500
Chloroform	CF	2
1,1-Dichloroethane	1,1-DCA	11
1,2-Dichlororethane	1,2-DCA	0.5
1,1-Dichloroethylene	1,1-DCE	0.5
Cis-1,2-Dichloroethylene	c-1,2-DCE	1.6
Trans-1,2,-Dichlorothylene	t-1,2-DCE	1.6
Tetrachloroethylene	PCE	0.5
Trichloroethylene	TCE	0.5
Vinyl Chloride	VC	0.5

Golder																Screen Interval 4.1 to 5.6 mbgs
BH15-1	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
27-Mar-15	<0.20	0.67	<0.10	<0.20	<25	<100	<100	<100	2.1	<0.30	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<0.17
11-Aug-22	<0.5	<0.5	<0.5	<1.1	<25	< 50	< 400	< 400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2

Golder																Screen Interval 4.4 to 5.9 mbgs
BH15-2	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
27-Mar-15	1.8	1.6	<0.20	0.51	<25	<100	<100	<100	2.8	<0.60	<0.40	<0.60	<0.40	<0.40	<0.40	<0.40	<0.37
27-Mar-15 (DUP)	<0.20	1.5	<0.10	0.46	<25	<100	<100	<100	2.8	<0.30	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<0.17
11-Aug-22	<0.5	<0.5	<0.5	<1.1	<25	< 50	< 400	< 400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2

Golder																Screen Interval 4.4 to 5.9 mbgs
BH15-3	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
27-Mar-15	<0.20	1.5	<0.10	0.47	<25	<100	<100	<100	3.2	<0.30	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<0.17
11-Aug-22	<0.5	<0.5	<0.5	<1.1	<25	< 50	< 400	< 400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2

Golder																Screen Interval 4.4 to 6.0 mbgs
BH15-4	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
27-Mar-15	<0.40	0.66	0.55	5.2	30	<100	<100	<100	0.91	<0.60	<0.40	<0.60	<0.40	<0.40	<0.40	<0.40	<0.34

Golder																Screen Interval 7.8 to 15.3 mbgs
BH15-5	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
11-Aug-22	<0.5	<0.5	<0.5	<1.1	<25	<50	<400	<400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
11-Aug-22 (DUP)	<0.5	<0.5	<0.5	<1.1	<25	<50	<400	<400	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2

WSP																Screen Interval 2.1 to 4.0 mbgs
BH15-2A	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.24	<0.20	0.25	<25	<100	<200	<200	1.6	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																Screen Interval 6.3 to 7.8 mbgs
BH15-2B	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.22	<0.20	<0.20	<25	<100	<200	<200	1.2	<0.20	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20
19-Jan-16 (DUP)	<0.20	0.22	<0.20	<0.20	<25	<100	<200	<200	1.3	<0.20	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																Screen Interval 1.8 to 2.8 mbgs
BH15-3A	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	8.83	2.9	<0.20	2.2	<25	<100	<200	<200	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

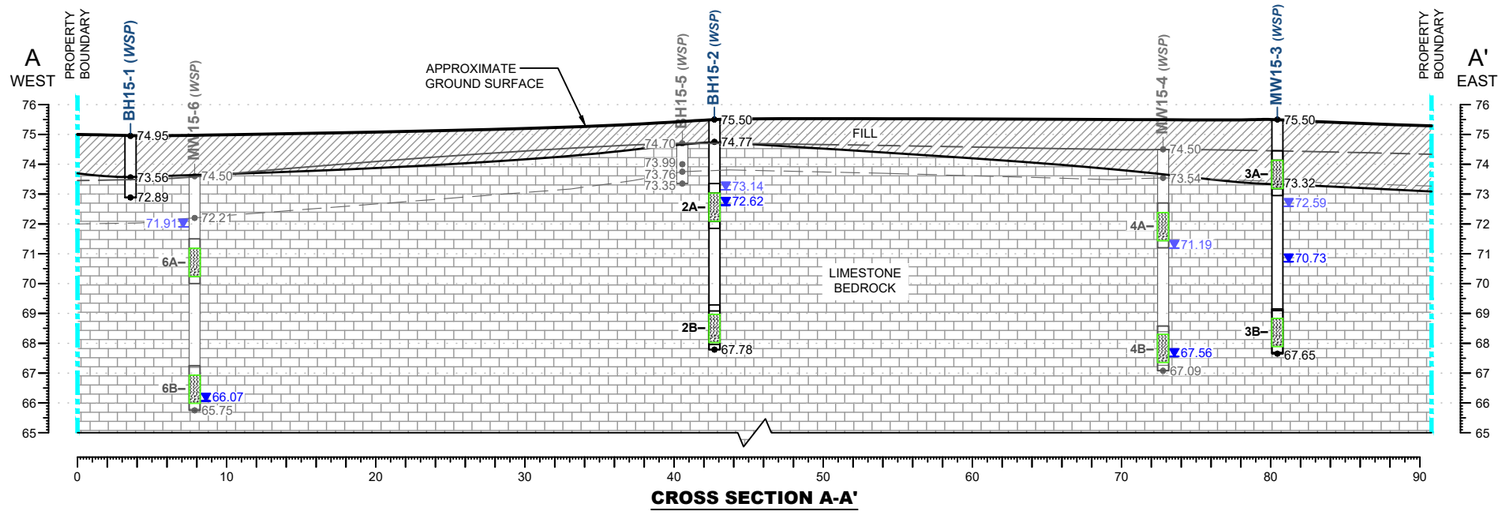
WSP																Screen Interval 6.3 to 7.8 mbgs
BH15-3B	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.27	<0.20	0.29	<25	<100	<200	<200	4.4	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16 (Dup)	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																Screen Interval 2.2 to 3.7 mbgs
BH15-4A	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	0.27	0.92	<0.20	0.70	<25	<100	<200	<200	4.4	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16 (Dup)	<0.20	<0.20	<0.20	<0.20	-	-	-	-	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																Screen Interval 5.9 to 7.4 mbgs
BH15-4B	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.24	<0.20	<0.20	<25	<100	<200	<200	-	-	-	-	-	-	-	-	-
21-Jan-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	14	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
16-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	1.7	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	0.9	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																Screen Interval 2.1 to 3.7 mbgs
BH15-6A	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	<0.20	0.78	<0.20	0.40	<25	<100	<200	<200	4.6	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	1.3	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	1.0	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

WSP																Screen Interval 6.4 to 8.0 mbgs
BH15-6B	B	T	E	X	F1	F2	F3	F4	CF	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
19-Jan-16	-	-	-	-	<25	<100	<200	<200	-	-	-	-	-	-	-	-	-
15-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	3	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
23-Feb-16	<0.20	<0.20	<0.20	<0.20	-	-	-	-	1.3	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20



LEGEND

- PROPERTY BOUNDARY
- GROUNDWATER SAMPLE EXCEEDS TABLE 7 SCS
- GROUNDWATER SAMPLE MEETS TABLE 7 SCS
- 2A– SCREEN NAME AND LOCATION/DEPTH (*WSP*)

72.59 GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - SHALLOW

70.73 GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - DEEP

71.83 GROUNDWATER ELEVATION FROM MARCH 27, 2016 (*GOLDER*)

HORIZONTAL 1:400 (0, 4m, 8m, 16m)

VERTICAL 1:200 (0, 2m, 4m, 6m)

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE: GROUNDWATER CROSS SECTIONS A-A', B-B', C-C' – PHC & VOC

project no. OTT-22019409-A0
scale HORIZ 1:400, VERT 1:200
FIG 16

Filename: E:\OTT\OTT-22019409-A0\60 Execution\65 Drawings\22019409-A0_Ph-2.dwg
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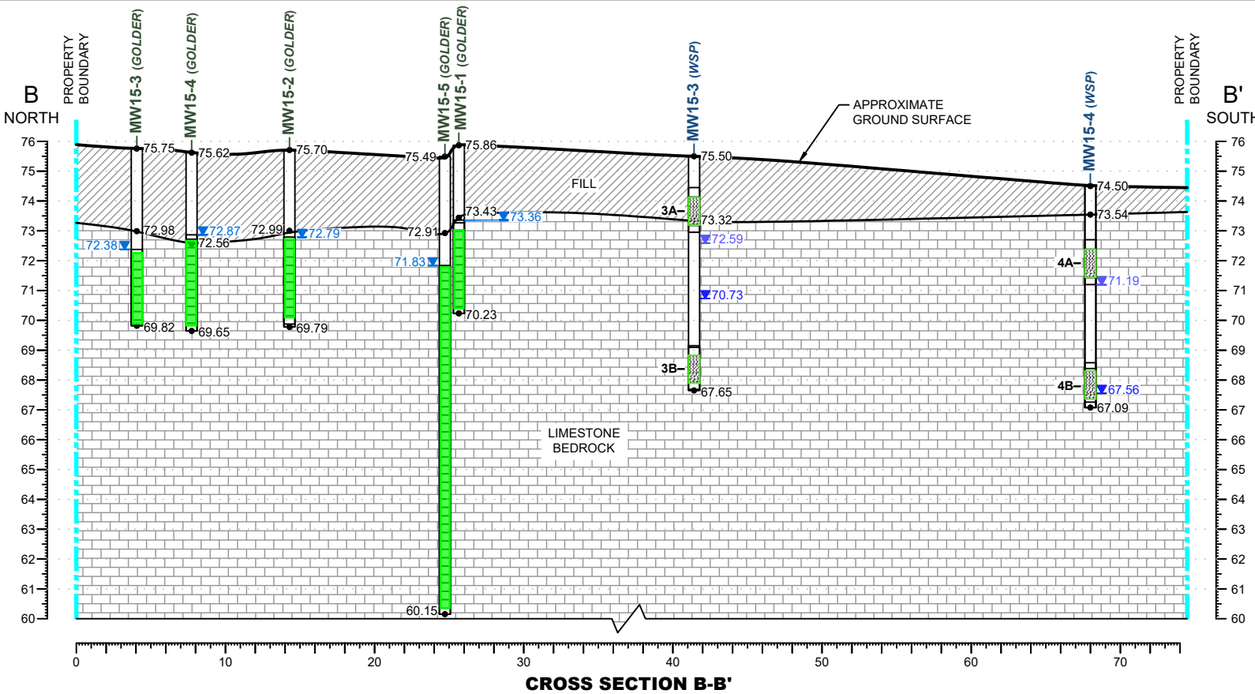
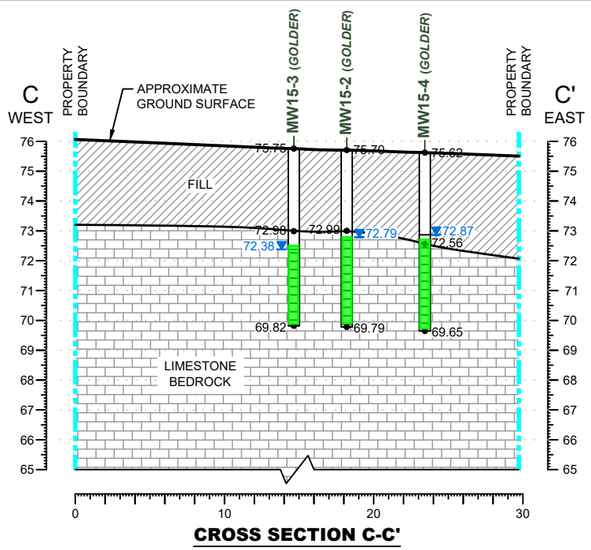


CROSS SECTION B-B'



CROSS SECTION C-C'

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Acenaphthene	Ace	17
Anthracene	An	1
Benzo(a)anthracene	B(a)A	1.8
Benzo(a)pyrene	B(a)P	0.81
Benzo(b/j)fluoranthene	B(b/j)F	0.75
Benzo(g,h,i)perylene	B(ghi)P	0.2
Benzo(k)fluoranthene	B(k)F	0.4
Chrysene	C	0.7
Dibenz(a,h)anthracene	DA	0.4
Fluoranthene	Fl	44
Fluorene	F	290
Indeno(1,2,3-cd)pyrene	I(123)P	0.2
Total Methylnaphthalene	T-MN	1500
Naphthalene	N	7
Phenanthrene	P	380
Pyrene	Py	5.7

Golder																
BH15-1														Screen Interval 4.1 to 5.6 mbgs		
27-Mar-15	<0.20	<0.20	<0.10	<0.20	<0.01	<0.10	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.10	<0.20
11-Aug-22	< 0.05	< 0.05	< 0.05	< 0.05	0.012	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05

Golder																
BH15-2														Screen Interval 4.4 to 5.9 mbgs		
27-Mar-16	<0.20	<0.20	<0.10	<0.20	<0.01	<0.10	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	0.38	0.36	<0.10	<0.20
11-Aug-22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05

Golder																
BH15-3														Screen Interval 4.4 to 5.9 mbgs		
27-Mar-15	<0.20	<0.20	<0.10	<0.20	<0.01	<0.10	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.10	<0.20
11-Aug-22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05

Golder																
BH15-4														Screen Interval 4.4 to 6.0 mbgs		
27-Mar-15	<0.20	<0.20	<0.10	<0.20	<0.01	<0.10	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	1.5	0.70	<0.10	<0.20

Golder																
BH15-5														Screen Interval 7.8 to 15.3 mbgs		
11-Aug-22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05
11-Aug-22 (Dup)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	< 0.05	< 0.05	< 0.05

WSP	to 4.0 mbgs															
BH15-2A	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
19-Jan-16	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	<0.030	<0.050

WSP	to 7.8 mbgs															
BH15-2B	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
19-Jan-16	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	<0.030	<0.050
19-Jan-16 (Dup)	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	<0.030	<0.050

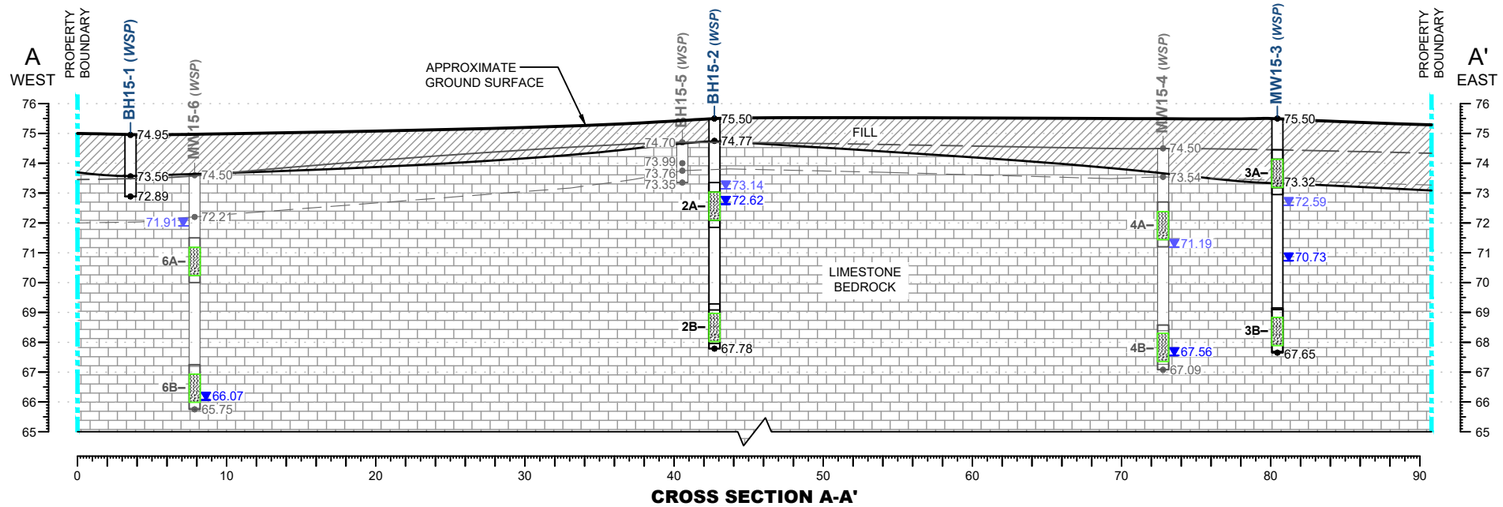
WSP	to 2.6 mbgs															
BH15-3A	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
19-Jan-16	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	0.17	<0.050

WSP	to 7.8 mbgs															
BH15-3B	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
19-Jan-16	<0.050	<0.050	<0.050	<0.050	<0.010	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.10	0.050	<0.030	<0.050

WSP	to 3.7 mbgs															
BH15-4A	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
1-Mar-16	<0.050	<0.050	0.059	0.16	0.18	0.24	0.12	0.087	0.15	<0.050	0.35	<0.050	0.13	<0.71	<0.050	0.99	0.1

WSP	to 7.4 mbgs															
BH15-4B	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
1-Mar-16	<0.050	<0.050	<0.050	<0.050	0.043	0.055	<0.050	<0.050	<0.050	<0.050	0.12	<0.050	<0.050	<0.1	<0.050	<0.030	0.1

WSP	to 3.7 mbgs															
BH15-6A	Ace	Acl	An	B(a)A	B(a)P	B(b/j)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
1-Mar-16	<0.050	<0.050	<0.050	<0.050	0.043	0.055	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1	<0.050	<0.030	<0.050



CROSS SECTION A-A'

LEGEND

- PROPERTY BOUNDARY
- GROUNDWATER SAMPLE EXCEEDS TABLE 7 SCS
- GROUNDWATER SAMPLE MEETS TABLE 7 SCS
- 2A– SCREEN NAME AND LOCATION/DEPTH (*WSP*)
- 72.59 ▼ GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - SHALLOW
- 70.73 ▼ GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - DEEP
- 71.83 ▼ GROUNDWATER ELEVATION FROM MARCH 27, 2016 (*GOLDER*)

HORIZONTAL 1:400 (0, 4m, 8m, 16m)

VERTICAL 1:200 (0, 2m, 4m, 6m)

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE: GROUNDWATER CROSS SECTIONS A-A', B-B', C-C' – PAH

project no. OTT-22019409-A0
scale HORIZ 1:400, VERT 1:200
FIG 17

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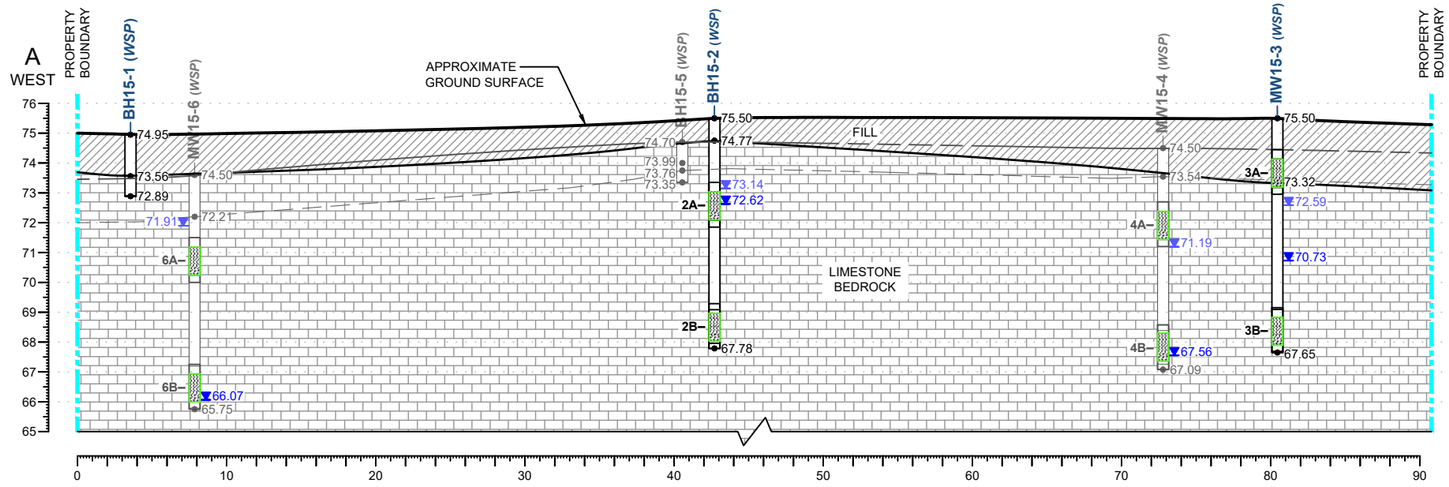

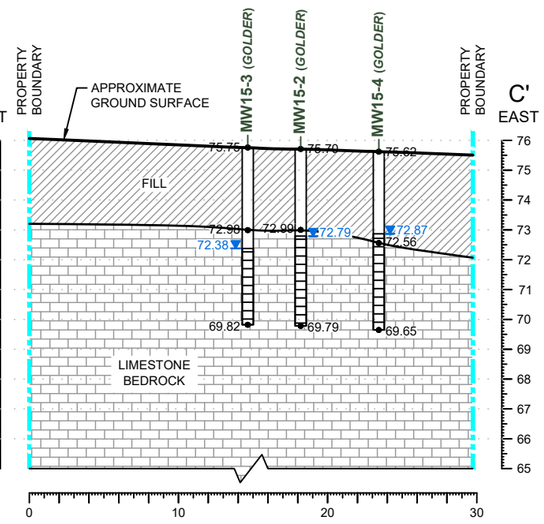

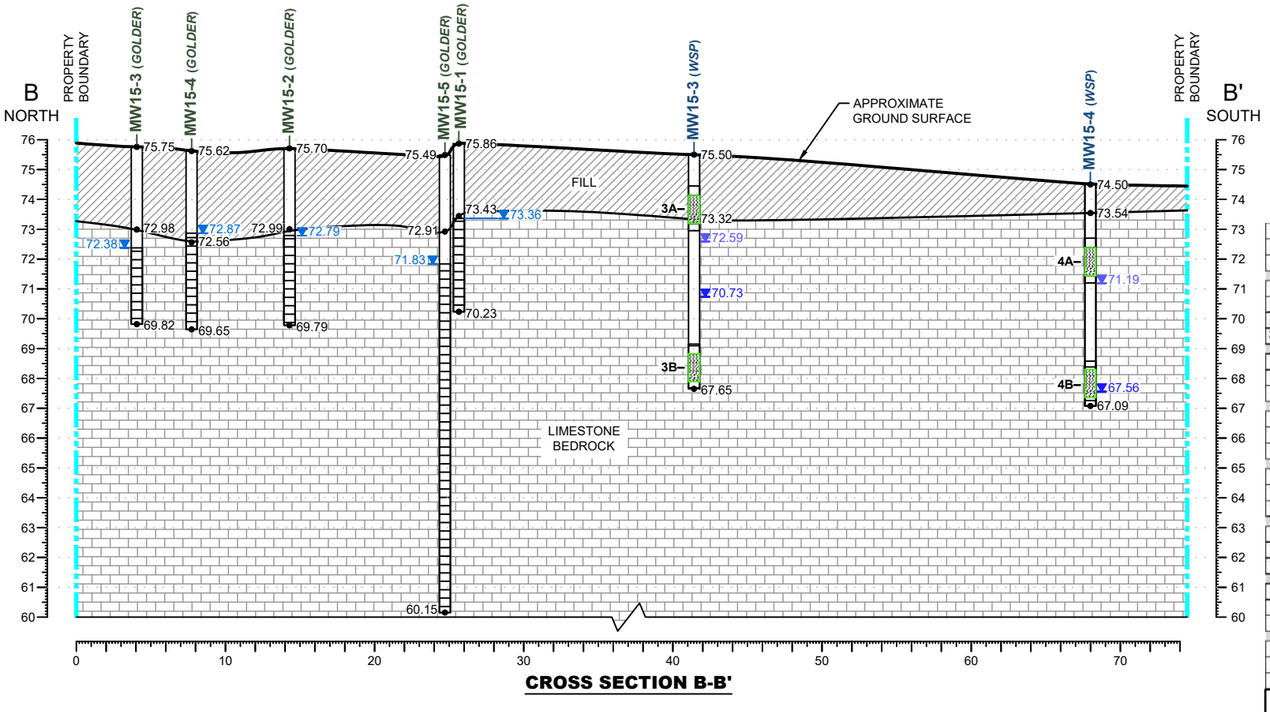

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 7
Antimony	Sb	16000
Arsenic	As	1500
Barium	Ba	23000
Beryllium	Be	53
Boron	B	36000
Cadmium	Cd	2.1
Chloride	Cl	1800000
Chromium	Cr	640
Chromium (VI)	Cr IV	110
Cobalt	Co	52
Copper	Cu	69
Cyanide	Cy	52
Lead	Pb	20
Mercury	Hg	0.1
Molybdenum	Mo	7300
Nickel	Ni	390
Selenium	Se	50
Silver	Ag	1.2
Sodium	Na	1800000
Thallium	Tl	400
Uranium	U	330
Vanadium	V	200
Zinc	Zn	890

WSP																					
BH15-2A	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
																							Screen Interval 2.1 to 4.0 m bgs
21-Jan-16	<0.50	<1.0	110	<0.50	39	<0.10	340000	<5.0	<0.5	2.3	5.8	<2	3.7	<0.1	3.1	3.6	300000	<2.0	<0.10	0.05	1.7	1.7	12
WSP																							
BH15-2B	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
																							Screen Interval 6.3 to 7.8 m bgs
21-Jan-16	<0.50	<1.0	190	<0.50	58	<0.10	570000	<5.0	<0.5	1.2	1.7	<2	<0.50	<0.1	1.9	2.9	450000	<2.0	<0.10	<0.050	2	<0.50	<5.0
21-Jan-16 (Dup)	<0.50	<1.0	190	<0.50	61	<0.10	570000	<5.0	<0.5	1.1	1.7	<2	<0.50	<0.1	2	2.5	460000	<2.0	<0.10	<0.050	1.8	<0.50	<5.0
WSP																							
BH15-3A	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
																							Screen Interval 1.0 to 2.6 m bgs
21-Jan-16	0.62	<1.0	77	<0.50	300	<0.10	460000	<5.0	<0.5	1.2	1.7	<2	<0.50	<0.1	4.7	3.4	520000	2.9	<0.10	0.074	3.1	<0.50	<5.0
WSP																							
BH15-3B	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
																							Screen Interval 6.3 to 7.8 m bgs
21-Jan-16	<0.50	<1.0	190	<0.50	870	<0.10	970000	<5.0	<0.5	0.92	<1.0	<2	<0.50	<0.1	0.98	1	890000	<2.0	<0.10	<0.050	0.88	<1.0	<5.0
WSP																							
BH15-4A	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
																							Screen Interval 2.2 to 3.7 m bgs
1-Mar-16	<0.50	<1.0	210	<0.50	60	<0.10	950000	<5.0	<0.50	<0.50	2.3	<2	<0.50	<0.1	3.1	2.1	520000	<2.0	<0.10	<0.050	2	<1.0	<5.0
WSP																							
BH15-4B	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
																							Screen Interval 5.9 to 7.4 m bgs
1-Mar-16	<0.50	<1.0	0.2	<0.50	380	<0.10	480000	<5.0	<2.5	<0.50	3.2	<2	<0.50	<0.1	14	2.5	280000	<2.0	<0.10	0.054	2.5	<0.050	<5.0
WSP	3.7 m bgs																						
BH15-6A	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
1-Mar-16	1.1	1	220	<0.50	930	<0.10	110000	<5.0	<0.50	0.59	1.4	<2	<0.50	<0.1	22	1.3	120000	<2.0	<0.10	<0.050	4.7	<0.050	<5.0
WSP	8.0 m bgs																						
BH15-6B	Sb	As	Ba	Be	B	Cd	Cl	Cr	Cr IV	Co	Cu	Cy	Pb	Hg	Mo	Ni	Se	Ag	Na	Tl	U	V	Zn
1-Mar-16	0.75	1.5	65	<0.50	660	<0.10	140000	<5.0	<0.50	<0.50	1.6	-	<0.50	-	3.4	<1.0	260000	<2.0	<0.10	<0.050	2.6	0.96	<5.0

LEGEND

PROPERTY BOUNDARY

GROUNDWATER SAMPLE EXCEEDS TABLE 7 SCS

GROUNDWATER SAMPLE MEETS TABLE 7 SCS

2A– SCREEN NAME AND LOCATION/DEPTH (*WSP*)

72.59 GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - SHALLOW

70.73 GROUNDWATER ELEVATION FROM MARCH 1, 2016 (*WSP*) - DEEP

71.83 GROUNDWATER ELEVATION FROM MARCH 27, 2016 (*GOLDER*)

HORIZONTAL 0 4m 8m 16m 1:400

VERTICAL 0 2m 4m 6m 1:200

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
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DATE: OCTOBER 2022
DESIGN: LW
CHECKED: MM
DRAWN BY: AS

CLIENT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
770 & 774 BRONSON AVENUE + 557 CAMBRIDGE STREET, OTTAWA, ON

TITLE: GROUNDWATER CROSS SECTIONS A-A', B-B', C-C' – INORGANICS

project no. OTT-22019409-A0
scale HORIZ 1:400, VERT 1:200
FIG 18

Appendix B: Survey Plan

TOPOGRAPHICAL PLAN OF SURVEY OF

ALL OF LOTS 3, 4, 37 AND PART OF LOT 38 REGISTERED PLAN 28 CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 200

8.0 6.0 4.0 2.0 0 4 8 Metres

Metric

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act and the Surveyors Act and the regulations made under them,
2. The survey was completed on the 19th day of November, 2015.

Nov 24/15
Date

V. Andrew Steele
Ontario Land Surveyor

Notes & Legend

Denotes

PH	=	Fire Hydrant
OHW	=	Overhead Wires
CB	=	Catch Basin
AN	=	Anchor
UP	=	Utility Pole
65.00	=	Location of Elevations
65.00	=	Location of Elevations (Top of Curb)
65.00	=	Location of Elevations (Top of Wall)
T/G	=	Top of Grate
C/L	=	Centreline
Inv.	=	Invert
OHW	=	Overhead Wires
UP	=	Utility Pole
AN	=	Anchor
	=	Property Line
TB	=	Terminal Box
TB-B	=	Bell Terminal Box
WV	=	Water Valve
MH-S	=	Maintenance Hole (Sanitary)
MH-H	=	Maintenance Hole (Hydro)
MH	=	Maintenance Hole (Unidentified)
CRW	=	Concrete Retaining Wall
SRW	=	Stone Retaining Wall
CLF	=	Chain Link Fence
BF	=	Board Fence
SBF	=	Security Board Fence
	=	Deciduous Tree
	=	Coniferous Tree
	=	Survey Monument Planted
	=	Survey Monument Found
SIB	=	Standard Iron Bar
SSIB	=	Short Standard Iron Bar
IB	=	Iron Bar
CC	=	Cut Cross
*	=	Survey Monument 0.3 Long
(WIT)	=	Witness
(AOG)	=	Annis, O'Sullivan, Vollebekk Ltd.
Meas.	=	Measured
(P1)	=	Plan 5R-14360
(P2)	=	Plan 5R-13332
(P3)	=	(1692) Plan March 23, 2006
(P4)	=	(AOG) Plan September 6, 2013
(P5)	=	Registered Plan 28
(P6)	=	Plan 4R-27771

Bearings are grid bearings, derived from the westerly limit of Bronson Avenue, shown to be N22°59'20"W on Plan 4R-27771 and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
1955645

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29 (3).

SITE AREA = 3628 m²

ELEVATION NOTES

1. Elevations shown are referred to geodetic datum.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com

Ontario Land Surveyors

Job No. 15040-S SPM Lts 3,4,37&38 Pl. 28 T F

JOB BENCHMARK
TOP OF SPINDLE
ELEV=76.06

DETAIL SCALE 1:100

Y:\2015\15040-S\TOPO\15040-S SPM Lts 3,4,37&38 Pl. 28 T F.dwg, 2015.11.23 3:31:39 PM

Appendix C: Sampling and Analysis Plan

TABLE A-1
SAMPLING AND ANALYSIS PLAN
770 Bronson Avenue

Area of Potential Environmental Concern	Rationale	Location	Borehole Location ID	Well Installed (Y/N)	Depth	Soil Samples	Groundwater Samples
APEC 1 (a)- Automotive Service Garage, oil water seperator and hydraulic hoist	Borehole completed with a monitoring well to assess potential soil and groundwater impacts related to the service garage	To be located south of the garage building (depending on the results of the utility locates)	BH15-1	Y	Bottom of screen (1.5 m screen) in all monitoring wells will be located approximately 1 m below apparent water table	All soil samples will be analyzed for petroleum hydrocarbons F1-F4, VOCs and PAHs. Provided the soil recovery allows, two soil samples from each borehole will be submitted for analysis. One soil sample will be selected to represent "worst case" concentrations based on field screening. The second soil sample will be selected to verically delineate the extent of contamination. One duplicate soil sample will be submitted for quality assurance purposes.	All groundwater samples will be analyzed for petroleum hydrocarbons F1-F4, VOCs and PAHs. One groundwater sample from each well will be submitted for analysis and one duplicate groundwater sample will be submitted for quality assurance purposes.
	Borehole completed with a monitoring well to assess potential soil and groundwater impacts related to the service garage	To be located east of the garage service bays (depending on the results of the utility locates)	BH15-2	Y			
APEC 1(b) - Three former underground storage tanks (USTs) used to store gasoline and/or deisel	Borehole completed with a monitoring well to assess potential soil and groundwater impacts related to the USTs	To be located south of the former USTs and/or within the USTs reported by the Site owner	BH15-2	Y			
	Borehole completed with a monitoring well to assess potential soil and groundwater impacts related to the USTs	Located to the east of the former USTs as identiifed on the FIPs	BH15-3	Y			
	Borehole completed with a monitoring well to assess potential soil and groundwater impacts related to the USTs	Located to the within/west of the former USTs as reported by the FIPs	BH15-4	Y			
	Borehole completed for geotechnical investigation.	Located west of former USTs as reproted by the Site owner.	BH15-5	Y	Borehole to be drilled to base of proposed building and well to be installed to evaluate deeper bedrock permeability	Sample soil and bedrock for geotechnical purposes, document any environmental impacts.	None proposed unless required for subsequent vertical delineation.

Notes:
All drilling and sampling to be compelted in accordance with Golder Standard Operating Procedures.

December 23, 2015

Fraser Smith
Assistant Vice President
Textbook Student Suites
51-A Caldari Road, Unit 1 M
Vaughan, Ontario L4K 4G3

Confidential

Sent via email: fraser@textbooksuites.com

Subject: **Phase One and Phase Two Environmental Site Assessments and Record of Site Condition (Rev2)**
744 Bronson Avenue
Ottawa, Ontario

Dear Mr. Fraser Smith,

WSP Canada Inc. (WSP) is pleased to provide our work program and cost estimate to complete a Phase One Environmental Site Assessment (ESA) and a Phase Two ESA for the above noted site.

We understand that a Record of Site Condition (RSC) for the Site may be filed at a later date, and, as such, the Phase Two ESA will be completed to the *Ontario Regulation 153/04* standards to support the filling of a RSC.

The Phase Two ESA cost is an estimate based on our experience with similar facilities in a commercial/industrial setting with fractured bedrock less than 2 m below ground surface (mbgs). If required, a more detailed cost estimate can be prepared after the background review and site visit have been conducted as part of the Phase One ESAs.

During a site visit early in November 2015, it was determined that only one (i.e., FG-1) of the three historical monitoring wells installed on the subject Site had survive the demolition activities. The historical borehole locations are shown on the attached **Figure 1**. As a result groundwater monitoring and sampling of this single monitoring well will be included in the proposed Phase Two ESA.

1.1 PHASE ONE ENVIRONMENTAL SITE ASSESSMENTS

A Phase One ESA will be carried out to assess if current and/or former activities/operations at the site and/or adjacent properties have adversely affected the site from an environmental perspective. The purpose of the records review, inspection and interviews is to establish the development history of the site and identify issues of actual and/or potential environmental concerns, if any, related to historical and current land use.

WSP Canada Inc.
294 Rink Street, Suite 103
Peterborough, ON K9J 2K2

Phone: 705-743-6850
Fax: 705-743-6854
www.wspgroup.com

The Phase One ESA will include the following tasks:

- ***Project initiation and communications.*** Discussions will be held with the property owner to obtain background information for the site. This will include review of site plans, drawings, surveys, previous reports and other information which may be available. In addition, arrangements will be made for the Site inspection visit. We understand that the work being completed is confidential in nature. Our team has conducted ESAs for various clients in a similar situation. WSP will work with the client to ensure that the confidential nature of our investigations is maintained during any on-site activities. This will be accomplished by establishing a designated on-site contact and developing a communications plan for interacting with staff at the site.
- ***Review of background and historical information.*** A records review will be conducted to obtain background and historical information for the site. This will include a review of the EcoLog ERIS System. The review will generally include the following items:
  - Aerial photographs of the Site and surrounding areas for several different eras typically from the 1950s, 1960s and 1980s. Newer aerial photography and satellite imagery will also be obtained from on-line sources, as available.
  - Local topographic and drainage maps.
  - Ontario Ministry of the Environment and Climate Change well records.
  - Geological and hydrogeological mapping available for the area.
  - City directories and other information sources to assess past and present occupants of the site and surrounding areas.
  - Fire insurance plans, if any.
  - Registries with respect to underground storage tanks, waste disposal sites, waste generator information for the site and surrounding areas.
  - Information regarding Municipal and Provincial compliance issues on the site and surrounding areas. This will include a search of the Ontario Ministry of the Environment and Climate Change Brownfield site registry (Records of Site Condition).
  - Any internal documentation available from the owner regarding previous site history and site operations.
- ***Site inspection.*** A detailed site inspection will be conducted. The inspection will include portions of the Site where access is permitted and can be safely conducted. The site will be inspected for evidence of activities which may result in potential impact to soil and ground water. These include evidence of historical storage tanks, industrial operations, and materials handling and storage. A cursory evaluation of adjacent properties will also be completed.

- ***Interviews.*** Person(s) knowledgeable of the development history at the site and surrounding areas will be interviewed, if available. Interviews also verify the information collected as part of the records review and the site visit.
- ***Development of a Conceptual Site Model (CSM).*** The work program will document the Potential Contaminating Activities on the site and on properties that fall within a 250 m radius of the site. This will include the determination of the likelihood that one or more contaminants have affected any land or water on, in, or under the Phase One site.
- ***Report preparation.*** A Phase One ESA report will be prepared following completion of the above-noted work. The report will provide a summary of the information gathered during the study. The report will identify Areas of Potential Environmental Concern with respect to the site.

1.2 PHASE TWO ENVIRONMENTAL SITE ASSESSMENTS

A Phase Two ESA work plan has been prepared based on the typical drilling and laboratory requirements for similar properties in an industrial/commercial setting and based on our past experience. The assumptions used in the cost estimate are included in the described work plan below. The environmental concerns identified during the Phase One ESA may indicate that additional or less drilling/laboratory analysis is required. As such, WSP would need to make modifications to the work plan and cost estimate. The Phase Two ESA will include the following:

- Preparation of a site-specific health and safety plan to be used by WSP's field staff during the proposed field activities.
- Clearance of public and private underground utilities and services prior to commencement of drilling activities.
- The advancement of two boreholes to refusal on bedrock and four nested boreholes across each site to a termination depth of approximately 3 mbgs (10') for the shallow boreholes and 7.6 mbgs (25') for the deeper boreholes. The currently proposed borehole locations are presented on the attached **Figure 1** and the proposed potential work to be completed at each proposed borehole location has been summarized on the attached **Table 1**.
- The soil profile of each borehole will be logged in the field and screened for total organic vapours with a photoionization detector (PID) and/or a combustible gas detector (CGD).
- The installation of groundwater monitoring wells in all of the boreholes at the site to assess groundwater quality, assess groundwater flow direction, and vertical gradients.
- The wells will be surveyed to a local benchmark to determine groundwater flow direction.
- Submission of worst-case soil samples, based on field screening and visual/olfactory observations, to an accredited laboratory for testing of potential contaminants of concern (PCOCs) related to each of the APECs identified in the Phase One ESA. We have assumed that the PCOCs will include metals and inorganics (M&I), petroleum hydrocarbons (PHCs F1-F4), volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs). Six borehole locations with soil samples to be submitted for each of four parameter sets resulting in a total of 24 soil analytical results.

- The groundwater wells will be developed to remove drilling fluid from the bedrock coring process. Prior to collecting the groundwater samples these wells will purged and then sampled. A groundwater sample from each of the 8 new wells plus one existing well for a total of 9 groundwater sample locations submitted to the laboratory for analysis of the all four PCOCs for a total of 36 groundwater analytical results.
- A second round of groundwater sampling will be conducted approximately 3 months after the first round, if required.
- In situ permeability testing of three of the shallow wells and three of the deeper wells will be completed as soon as possible after installation of the monitoring wells.
- For quality assurance/quality control (QA/QC) purposes, one blind duplicate sample per medium sampled (i.e., soil and groundwater) will be submitted for laboratory analysis of the full suite of parameters noted above for each site (i.e., one blind field duplicate for each set of parameter so four blind field soil duplicates and eight blind field groundwater duplicates). In addition two trip blanks (i.e., one per event) tested for VOCs in groundwater will also be submitted for QA/QC purposes.
- Completion of a Phase Two ESA report. The report will present the results of the investigation and provide recommendations regarding the extent of environmental impact to the soil and groundwater at each site. It is proposed to complete a standalone report for each of the five sites.

Standard field procedures and protocols will be followed to prevent cross-contamination during drilling and sampling. The groundwater samples for metals will be field-filtered using a disposable inline 0.45 micron filter.

Excess soil from the drilling and purge water from the wells will be placed into drums and left at the Site following the completion of the Phase Two ESA. Upon receipt of the analytical results, WSP can arrange for the appropriate disposal of these materials on a time and materials basis to be billed to the project. At this time, costs have not been included in this proposal for waste characterization analyses or off-Site disposal activities. Typical waste disposal cost is approximately $450 to $550 per drum of non-hazardous waste in addition to waste characterization and field monitoring costs.

Also, this cost estimate does not include the cost to decommission the monitoring wells, which is required to be completed by a licenced well drilling contractor when the wells are no longer in use or required. Costs for completing a formal site survey, if required, are not included in this proposal at this time.

The Phase Two ESA cost estimate does not include any cost for a ground penetrating radar or electromagnetic survey, which may be required if there are suspected underground storage tanks which have not been removed from the Site.

The soil and groundwater chemical results will be compared to the applicable standards set out in Soil, *Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act* (MOECC, 2011). Of note, the investigation will confirm the presence/absence of contaminants in the subsurface materials at the samples locations of the site. Detailed

contamination delineation, waste characterization testing and disposal, repair of damaged underground utilities and site restorations are not included in the scope of work. Evaluation of environmental concerns beyond the areas of concern or the site boundaries is outside the scope of work.

1.3 RECORD OF SITE CONDITION

Upon the completion of the Phase 1 and Phase 2 ESAs, if **Site** remediation work is practicable then approximately six months after the remediation work has been completed and the two quarterly post-remediation groundwater sampling event have been completed, then WSP can prepare and submit Record of Site Condition (RSC) documentation to the Ministry of the Environment and Climate Change (MOECC) in accordance with the O. *Reg. 153/04 (as amended)*. This includes submission of reports and tabular electronic test data and related **Site** documentation for the subject property.

Prepared responses to address requests for additional information from MOECC to approve the RSC will be discussed with the Client before we proceed. Costs for any additional work, if necessary, are not included and required lawyer documents subject to advisement. It should be noted that a RSC can take several months to receive final MOECC approval.

It is assumed that the Client will provide the following documentation:

- certificate of status for the current property owner (within 30 days of submission),
- copy of the deed, transfer or parcel register,
- letter from you lawyer confirming the legal description of the RSC property,
- legal survey signed and dated by an OLS, and
- owner's declaration.

1.4 TEAM MEMBERS

WSP will provide an experienced team for completion of this assignment. The team will be comprised of senior and intermediate environmental engineers and scientists who have completed similar assignments. The work will be overseen by Mr. Philip Romeril, a senior environmental engineer and QP$_{ESA}$ with WSP with over 30 years of experience. Project management, fieldwork coordination and reporting will be completed by Ms. Lisa Gardiner. Both Mr. Romeril and Ms. Gardiner are situated in WSP's Peterborough office. The site investigation work will be completed by Kathryn Maton from WSP's Ottawa office.

Appendix D: Borehole Logs

BOREHOLE DRILLING RECORD : BH15-1

Prepared by: **Kathryn Maton** Date (Start): **1/11/2016**
Reviewed by: **Phil Romeril** Date (End): **1/11/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **774 Bronson Avenue and 557 Cambridge Street South, Ottawa, Ontario**
Sector:
Client: **Textbook Student Suites**

Project Number: **151-13503-00**
Geographic Coordinates: X = 445171 mE, Y = 5027646 mN
Surface Elevation: 75 m *(Approximate)*
Top of PVC Elevation:

Drilling Company: Downing Estate Drilling Ltd.
Drilling Equipment: CME 55
Drilling Method: Auger
Borehole Diameter: 200 mm
Drilling Fluid: None
Sampling Method: Split Spoon

ODOUR: F - Light; M - Medium; P - Persistent
VISUAL: D - Disseminated Product; S - Saturated with Product
SAMPLE TYPE: DC - Diamond Corer; SS - Split Spoon; MA - Manual Auger; TR - Trowel; ST - Shelby Tube; TU - DT32 Liner
Water Level; Free Phase

CHEMICAL ANALYSIS: PCB Poly-Chlorinated Biphenyls; BTEX Benzene, Toluene, Ethylbenzene, Xylene; Inorg. C. Inorganic Compounds; Phenol. C. Phenolic Compounds; VOC Volatil Organic Compounds (MAH & CAH); Diox. & Fur. Dioxins & Furans; CAH Chlorinated Aliphatic Hydrocarbons; MAH Monocyclic Aromatic Hydrocarbons; PAH Polycyclic Aromatic Hydrocarbons; PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}; PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50}); Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.; HWR Leacheate Tests (Haz. Waste Reg.)

DEPTH ELEVATION (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. (ppm OR % LIE)	ODOUR F	ODOUR M	ODOUR P	VISUAL D	VISUAL S	SAMPLE TYPE	% RECUPERATION	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	MONITORING WELL DIAGRAM	MONITORING WELL DESCRIPTION	REMARKS
		Ground surface.															
0.05 74.95		ASPHALT															
0.15 74.85		FILL, crushed limestone gravel and sand	1.6									BH15-1 1					
		FILL, sand and crushed limestone gravel, with some asphalt and pieces of brick, compact, dry, grey	1.2						SS	40	12 14 7	BH15-1 2	PHCs F1-F4 BTEX PAH VOC				
0.5			1.3						SS	50	5 25 30	BH15-1 3					0.5
1.0																	1.0
1.22 73.78		GRAVEL, shale fragments	2.1						SS	37	39 50 50-5"	BH15-1 4					
1.42 73.56		BEDROCK, shale	6.1									BH15-1 5					
1.5		BEDROCK, limestone with black shale partings															1.5
									SS	0	50-1"						
2.0																	2.0
2.11 72.89		*Auger Refusal at 2.11 mbgs* End of borehole at 2.11 m.															
2.5																	2.5
3.0																	3.0

Projet : PHASE II ESA - 774 BRONSON AVE.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 2/9/2016

BOREHOLE DRILLING RECORD : BH15-2

Prepared by: **Kathryn Maton** Date (Start): **1/11/2016**
Reviewed by: **Phil Romeril** Date (End): **1/13/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **774 Bronson Avenue and 557 Cambridge Street South, Ottawa, Ontario**
Sector:
Client: **Textbook Student Suites**

Project Number: **151-13503-00**
Geographic Coordinates: X = 445204 mE, Y = 5027668 mN
Surface Elevation: 75.6 m *(Approximate)*
Top of PVC Elevation: 76.62 m *(Approximate)*

Drilling Company: Downing Estate Drilling Ltd.
Drilling Equipment: CME 55
Drilling Method: Auger / HQ Casing
Borehole Diameter: 200 mm / 96 mm
Drilling Fluid: Municipal Water
Sampling Method: Split Spoon

ODOUR: F - Light; M - Medium; P - Persistent
VISUAL: D - Disseminated Product; S - Saturated with Product

SAMPLE TYPE: DC - Diamond Corer; SS - Split Spoon; MA - Manual Auger; TR - Trowel; ST - Shelby Tube; TU - DT32 Liner

CHEMICAL ANALYSIS: PCB Poly-Chlorinated Biphenyls; BTEX Benzene, Toluene, Ethylbenzene, Xylene; Inorg. C. Inorganic Compounds; Phenol. C. Phenolic Compounds; VOC Volatil Organic Compounds (MAH & CAH); Diox. & Fur. Dioxins & Furans; CAH Chlorinated Aliphatic Hydrocarbons; MAH Monocyclic Aromatic Hydrocarbons; PAH Polycyclic Aromatic Hydrocarbons; PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}; PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50}); Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc; HWR Leacheate Tests (Haz. Waste Reg.)

Water Level ▽ Free Phase

DEPTH ELEVATION (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. (ppm OR % LIE)	ODOUR F	ODOUR M	ODOUR P	VISUAL D	VISUAL S	SAMPLE TYPE	% RECUPERATION	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	DIAGRAM	DESCRIPTION	REMARKS
		Ground surface.															
0.15 / 75.45		ASPHALT															
		FILL, crushed limestone gravel and sand	8.5						SS	18	7, 11, 12, 14	BH15-2 1					
0.83 / 74.77		FILL, sandy silt and crushed limestone gravel with trace clay, compact, saturated, brown, black crystal material observed	13.8						SS	12	6, 50-3"	BH15-2 2	PHCs F1-F4 VOC PAHs BTEX				
		BEDROCK, limestone with black shale partings							DC	100						SCREEN	RQD = 36
		Auger Refusal at 1.14 mbgs, HQ Coring begins							DC	100						Diam.: 31 mm Open.: 0,25 mm Length: 1.52 m	RQD = 67
																WATER Depth: m Elev.: 74.12 m Date: 1/19/2016	
									DC	100							RQO = 49
									DC	100						Bentonite	RQD = 87
									DC	100						SCREEN Diam.: 31 mm Open.: 0.25 mm Length: 1.52 m	RQD = 87
																WATER Depth: m Elev.: 73.63 m Date: 1/19/2016	
																Sand	
									DC	100						PVC Slotted Pipe	RQD = 54
7.82 / 67.78		End of borehole at 7.82 m.															

Projet : PHASE II ESA - 774 BRONSON AVE.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 2/9/2016

BOREHOLE DRILLING RECORD : BH15-3A

WSP

Prepared by: **Kathryn Maton** Date (Start): **1/11/2016**
Reviewed by: **Phil Romeril** Date (End): **1/12/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **774 Bronson Avenue and 557 Cambridge Street South, Ottawa, Ontario**
Sector:
Client: **Textbook Student Suites**

Project Number: **151-13503-00**
Geographic Coordinates: X = 445240 mE, Y = 5027685 mN
Surface Elevation: 75.5 m *(Approximate)*
Top of PVC Elevation: 76.53 m *(Approximate)*

Drilling Company: Downing Estate Drilling Ltd.
Drilling Equipment: CME 55
Drilling Method: Auger / HQ Casing
Borehole Diameter: 200 mm
Drilling Fluid: Municipal Water
Sampling Method: Split Spoon

ODOUR: F - Light; M - Medium; P - Persistent
VISUAL: D - Disseminated Product; S - Saturated with Product
SAMPLE TYPE: DC - Diamond Corer; SS - Split Spoon; MA - Manual Auger; TR - Trowel; ST - Shelby Tube; TU - DT32 Liner
Water Level; Free Phase

CHEMICAL ANALYSIS: PCB Poly-Chlorinated Biphenyls; BTEX Benzene, Toluene, Ethylbenzene, Xylene; Inorg. C. Inorganic Compounds; Phenol. C. Phenolic Compounds; VOC Volatile Organic Compounds (MAH & CAH); Diox. & Fur. Dioxins & Furans; CAH Chlorinated Aliphatic Hydrocarbons; MAH Monocyclic Aromatic Hydrocarbons; PAH Polycyclic Aromatic Hydrocarbons; PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}; PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50}); Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc; HWR Leacheate Tests (Haz. Waste Reg.)

DEPTH ELEVATION (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. (ppm OR % LIE)	ODOUR F	ODOUR M	ODOUR P	VISUAL D	VISUAL S	SAMPLE TYPE	% RECUPERATION	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	MONITORING WELL DIAGRAM	MONITORING WELL DESCRIPTION	REMARKS
		Ground surface.															
75.50		TOPSOIL	15.2						SS	37	11 8 6 5	BH15-3A 1					
0.13																	
75.37		FILL, Black carbon ashes	12									BH15-3A 2					
		FILL, silty sand, dry to moist, compact, brown														SCREEN Diam.: 51 mm Open.: 0.25 mm Length: 1.52 m WATER Depth: 2.35 m Elev.: 74.18 m Date: 1/19/2016	
0.5			12						SS	12	2 14 50-3"	BH15-3A 3					0.5
1.0		becoming saturated														Bentonite	1.0
			13.1						SS	64	7 14 22 31	BH15-3A 4	PHCs F1-F4 BTEX VOC PAH Duplicate				
1.5																Sand	1.5
1.75																	
1.82		FILL, crushed limestone gravel and sand														PVC Slotted Pipe	
73.68		FILL, silty sand and crushed limestone gravel, saturated, compact, brown	21.3						SS	29	37 35 50-2"	BH15-3A 5					2.0
2.0																	
2.18																	
73.32		BEDROCK, limestone with black shale partings															
2.5																	2.5
2.56		Auger Refusal at 2.56 mbgs															
72.94		End of borehole at 2.56 m.															
3.0																	3.0

Projet : PHASE II ESA - 774 BRONSON AVE.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 2/9/2016

BOREHOLE DRILLING RECORD : BH15-3B

Prepared by: **Kathryn Maton** Date (Start): **1/11/2016**
Reviewed by: **Phil Romeril** Date (End): **1/12/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **774 Bronson Avenue and 557 Cambridge Street South, Ottawa, Ontario**
Sector:
Client: **Textbook Student Suites**

Project Number: **151-13503-00**
Geographic Coordinates: X = 445240 mE, Y = 5027685 mN
Surface Elevation: 75.5 m *(Approximate)*
Top of PVC Elevation: 77.468 m *(Approximate)*

Drilling Company: Downing Estate Drilling Ltd.
Drilling Equipment: CME 55
Drilling Method: Auger / HQ Casing
Borehole Diameter: 200 mm / 96 mm
Drilling Fluid: Municipal Water
Sampling Method: Diamond Corer

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner

Water Level ▽ Free Phase

CHEMICAL ANALYSIS
PCB Poly-Chlorinated Biphenyls
BTEX Benzene, Toluene, Ethylbenzene, Xylene
Inorg. C. Inorganic Compounds
Phenol. C. Phenolic Compounds
VOC Volatil Organic Compounds (MAH & CAH)
Diox. & Fur. Dioxins & Furans
CAH Chlorinated Aliphatic Hydrocarbons
MAH Monocyclic Aromatic Hydrocarbons
PAH Polycyclic Aromatic Hydrocarbons
PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}
PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
HWR Leacheate Tests (Haz. Waste Reg.)

DEPTH ELEVATION (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. (ppm OR % LIE)	ODOUR F	ODOUR M	ODOUR P	VISUAL D	VISUAL S	SAMPLE TYPE	% RECUPERATION	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	DIAGRAM	DESCRIPTION	REMARKS
		Ground surface.															
75.50		FILL, see soil description on BH15-3A															
		← *Casing refusal at 1.8 mbgs, HQ coring begins*							DC	100							RQD = 55
2.18 / 73.32		BEDROCK, limestone with black shale partings							DC	100							RQD = 92
									DC	100							RQD = 98
									DC	100						Bentonite SCREEN; Diam.: 51 mm; Open.: 0.25 mm; Length: 1.52 m; WATER Depth: 7.11 m Elev.: 70.36 m Date: 1/19/2016; Sand	RQD = 94
									DC	100						PVC Slotted Pipe	RQD = 98
7.85 / 67.65		End of borehole at 7.85 m.															

BOREHOLE DRILLING RECORD : BH15-4

WSP

Prepared by: **Kathryn Maton** Date (Start): **1/11/2016**
Reviewed by: **Phil Romeril** Date (End): **1/13/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **774 Bronson Avenue and 557 Cambridge Street South, Ottawa, Ontario**
Sector:
Client: **Textbook Student Suites**

Project Number: **151-13503-00**
Geographic Coordinates: X = 445246 mE, Y = 5027658 mN
Surface Elevation: 74.5 m *(Approximate)*
Top of PVC Elevation: 75.53 m *(Approximate)*

Drilling Company: Downing Estate Drilling Ltd.
Drilling Equipment: CME 55
Drilling Method: Auger / HQ Casing
Borehole Diameter: 200 mm / 96 mm
Drilling Fluid: Municipal Water
Sampling Method: Split Spoon

ODOUR: F - Light; M - Medium; P - Persistent
VISUAL: D - Disseminated Product; S - Saturated with Product
SAMPLE TYPE: DC - Diamond Corer; SS - Split Spoon; MA - Manual Auger; TR - Trowel; ST - Shelby Tube; TU - DT32 Liner
CHEMICAL ANALYSIS: PCB Poly-Chlorinated Biphenyls; BTEX Benzene, Toluene, Ethylbenzene, Xylene; Inorg. C. Inorganic Compounds; Phenol. C. Phenolic Compounds; VOC Volatil Organic Compounds (MAH & CAH); Diox. & Fur. Dioxins & Furans; CAH Chlorinated Aliphatic Hydrocarbons; MAH Monocyclic Aromatic Hydrocarbons; PAH Polycyclic Aromatic Hydrocarbons; PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}; PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50}); Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc; HWR Leacheate Tests (Haz. Waste Reg.)

▽ Water Level ▼ Free Phase

DEPTH ELEVATION (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. (ppm OR % LIE)	ODOUR F	ODOUR M	ODOUR P	VISUAL D	VISUAL S	SAMPLE TYPE	% RECUPERATION	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	MONITORING WELL DIAGRAM	MONITORING WELL DESCRIPTION	REMARKS
		Ground surface.															
0.12 / 74.38		FILL, crushed limestone gravel	11.9						SS	37	8 8 8 6	BH15-4 1	Metals and Inorganics				
0.5		FILL, silty sand and crushed limestone gravel	13						SS	46	4 6 50-2"	BH15-4 2					
0.96 / 73.54		BEDROCK, limestone with black shale partings *Auger Refusal at 1.29 mbgs, HQ coring begins*							DC	100						SCREEN Diam.: 31 mm Open.: 0.25 mm Length: 1.52 m WATER Depth: m Elev.: 72.08 m Dete: 1/19/2016	RQD = 92
1.0																	
1.5																	
2.0																	
2.5																	
3.0									DC	100							RQD = 96
3.5																	
4.0																	
4.5									DC	100							RQD = 78
5.0																Bentonite SCREEN Diam.: 31 mm Open.: 0.25 mm Length: 1.52 m WATER Depth: m Elev.: 68.67 m Date: 1/19/2016	
5.5																	
6.0									DC	100							RQD = 93
6.5																Sand PVC Slotted Pipe	
7.0																	
7.39 / 67.09		End of borehole at 7.41 m.															
7.5																	
8.0																	
8.5																	

Projet : PHASE II ESA - 774 BRONSON AVE.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 2/9/2016

BOREHOLE DRILLING RECORD : BH15-5

Prepared by: **Kathryn Matori** Date (Start): **1/11/2016**
Reviewed by: **Phil Romeril** Date (End): **1/11/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **774 Bronson Avenue and 557 Cambridge Street South, Ottawa, Ontario**
Sector:
Client: **Textbook Student Suites**

Project Number: **151-13503-00**
Geographic Coordinates: X = 445217 mE, Y = 5027643 mN
Surface Elevation: 74.7 m *(Approximate)*
Top of PVC Elevation:

Drilling Company: Downing Estate Drilling Ltd.
Drilling Equipment: CME 55
Drilling Method: Auger
Borehole Diameter: 200 mm
Drilling Fluid: None
Sampling Method: Split Spoon

ODOUR: F - Light; M - Medium; P - Persistent
VISUAL: D - Disseminated Product; S - Saturated with Product
SAMPLE TYPE: DC - Diamond Corer; SS - Split Spoon; MA - Manual Auger; TR - Trowel; ST - Shelby Tube; TU - DT32 Liner
Water Level; Free Phase

CHEMICAL ANALYSIS
PCB Poly-Chlorinated Biphenyls
BTEX Benzene, Toluene, Ethylbenzene, Xylene
Inorg. C. Inorganic Compounds
Phenol. C. Phenolic Compounds
VOC Volatil Organic Compounds (MAH & CAH)
Diox. & Fur. Dioxins & Furans
CAH Chlorinated Aliphatic Hydrocarbons
MAH Monocyclic Aromatic Hydrocarbons
PAH Polycyclic Aromatic Hydrocarbons
PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}
PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
HWR Leacheate Tests (Haz. Waste Reg.)

DEPTH ELEVATION (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. (ppm OR % LIE)	ODOUR F	ODOUR M	ODOUR P	VISUAL D	VISUAL S	SAMPLE TYPE	% RECUPERATION	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	DIAGRAM	DESCRIPTION	REMARKS
		Ground surface.															
74.70		TOP SOIL	8						SS	50	2 10 7 4	BH15-5-1 1					
0.15 / 0.17																	
74.53		FILL, pieces of asphalt	1.3									BH15-5-2 (0.15-0.17)	Metals and Inorganics				
		FILL, sand and crushed limestone gravel with trace pieces of brick	1.2									BH15-5-3 2					
0.61																	
74.09		FILL, topsoil with some pieces of wood, compact, moist, dark brown	1.3						SS	41	4 32 50-1"	BH15-5-4 3					
0.71																	
73.99		GRAVEL and sand	1									BH15-5-5 4					
0.94																	
73.76		BEDROCK, limestone with black shale partings															
1.35		*Auger Refusal at 1.35 mbgs*															
73.35		End of borehole at 1.35 m.															

Projet : PHASE II ESA - 774 BRONSON AVE.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 2/9/2016

BOREHOLE DRILLING RECORD : BH15-6

Prepared by: **Kathryn Maton** Date (Start): **1/11/2016**
Reviewed by: **Phil Romeril** Date (End): **1/13/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **774 Bronson Avenue and 557 Cambridge Street South, Ottawa, Ontario**
Sector:
Client: **Textbook Student Suites**

Project Number: **151-13503-00**
Geographic Coordinates: X = 445189 mE, Y = 5027623 mN
Surface Elevation: 73.7 m *(Approximate)*
Top of PVC Elevation: 74.705 m *(Approximate)*

Drilling Company: Downing Estate Drilling Ltd.
Drilling Equipment: CME 55
Drilling Method: Auger / HQ Casing
Borehole Diameter: 200 mm / 96 mm
Drilling Fluid: Municipal Water
Sampling Method: Split Spoon

ODOUR: F - Light; M - Medium; P - Persistent
VISUAL: D - Disseminated Product; S - Saturated with Product

SAMPLE TYPE: DC - Diamond Corer; SS - Split Spoon; MA - Manual Auger; TR - Trowel; ST - Shelby Tube; TU - DT32 Liner

CHEMICAL ANALYSIS: PCB Poly-Chlorinated Biphenyls; BTEX Benzene, Toluene, Ethylbenzene, Xylene; Inorg. C. Inorganic Compounds; Phenol. C. Phenolic Compounds; VOC Volatil Organic Compounds (MAH & CAH); Diox. & Fur. Dioxins & Furans; CAH Chlorinated Aliphatic Hydrocarbons; MAH Monocyclic Aromatic Hydrocarbons; PAH Polycyclic Aromatic Hydrocarbons; PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}; PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50}); Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc; HWR Leacheate Tests (Haz. Waste Reg.)

▽ Water Level ▼ Free Phase

DEPTH ELEVATION (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. (ppm OR % LIE)	ODOUR F M P	VISUAL D S	SAMPLE TYPE	% RECUPERATION	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	MONITORING WELL DIAGRAM	MONITORING WELL DESCRIPTION	REMARKS
		Ground surface.												
0.11 / 73.59		FILL, top soil, with some pieces of brick, dry, compact, dark brown	11.1			SS	39	3, 14, 13, 8	BH15-6 1	Metals and Inorganics Duplicate				
0.5			13.8						BH15-6 2					
73.09		FILL, crushed limestone gravel and sand, dry, compact, brown-grey becoming silty with trace pieces of brick, saturated, brown	12.1			SS	25	14, 50-2"	BH15-6 3					
1.0						DC	27							
1.49 / 72.21		*Auger Refusal at 1.52 mbgs, HQ Coring begins*	11.9			SS	16	11, 50-1"	BH15-6 4					
1.5		BEDROCK, limestone and black shale partings				DC	92						SCREEN Diam.: 31 mm Open.: 0.25 mm Length: 1.52 m WATER Depth: m Elev.: 71.67 m Date: 1/19/2016	RQD = 63
2.0														
2.5														
3.0						DC	104							RQD = 100
3.5														
4.0														
4.5						DC	95							RQD = 76
5.0													← Bentonite	
5.5													SCREEN Diam.: 31 mm Open.: 0.25 mm Length: 1.52 m WATER Depth: m Elev.: 67.05 m Date: 1/19/2016	
6.0						DC	105							RQD = 90
6.5														
7.0													← Sand	
													← PVC Slotted Pipe	
7.5						DC	100							RQD = 75
7.95 / 65.75		End of borehole at 7.95 m.												
8.0														
8.5														

Projet : PHASE II ESA - 774 BRONSON AVE.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 2/9/2016

PROJECT: 1525987

RECORD OF DRILLHOLE: 15-1

SHEET 2 OF 2

LOCATION: N 5027695.2 ;E 445226.2

DRILLING DATE: March 25, 2015

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG:

DRILLING CONTRACTOR: Marathon Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		BEDROCK SURFACE		73.43																
3	Rotary Drill / NQ Core	Fresh, thinly to medium bedded, grey, fine grained, non-porous LIMESTONE BEDROCK, with partings to thin interbeds of black shale		2.43	1															Bentonite Seal
4																				Silica Sand
5					2															38 mm Diam. PVC #10 Slot Screen
				70.23																
6		End of Drillhole		5.63																W.L. in Screen at Elev. 73.36 m on March 27, 2015
7																				
8																				
9																				
10																				
11																				
12																				

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: JD

CHECKED: TMS

MIS-RCK 004 1525987.GPJ GAL-MISS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF DRILLHOLE: 15-2

SHEET 2 OF 2

LOCATION: N 5027707.7 ;E 445228.3

DRILLING DATE: March 24, 2015

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG:

DRILLING CONTRACTOR: Marathon Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		BEDROCK SURFACE		72.99																
3	Rotary Drill / NQ Core	Fresh, thinly to medium bedded, grey, fine grained, non-porous LIMESTONE BEDROCK, with partings to thin interbeds of black shale		2.71	1	100														Bentonite Seal
4																				Silica Sand
5					2	85														38 mm Diam. PVC #10 Slot Screen
				69.79																
6		End of Drillhole		5.91																W.L. in Screen at Elev. 72.79 m on March 27, 2015
7																				
8																				
9																				
10																				
11																				
12																				

DEPTH SCALE
1 : 50

Golder Associates

LOGGED: JD
CHECKED: TMS

MIS-RCK 004 1525987.GPJ GAL-MISS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF DRILLHOLE: 15-3

SHEET 2 OF 2

LOCATION: N 5027716.1 ;E 445220.9

DRILLING DATE: March 24, 2015

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG:

DRILLING CONTRACTOR: Marathon Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR / % RETURN	FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		BEDROCK SURFACE		72.98																	
3	Rotary Drill NQ Core	Fresh, thinly to medium bedded, grey, fine grained, non-porous LIMESTONE BEDROCK, with partings to thin interbeds of black shale		2.77	1		85														Bentonite Seal
4																					Silica Sand
5					2																38 mm Diam. PVC #10 Slot Screen
				69.82																	
6		End of Drillhole		5.93																	W.L. in Screen at Elev. 72.38 m on March 27, 2015
7																					
8																					
9																					
10																					
11																					
12																					

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: JD

CHECKED: TMS

MIS-RCK 004 1525987.GPJ GAL-MISS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF DRILLHOLE: 15-4

SHEET 2 OF 2

LOCATION: N 5027715.5 ;E 445230.4

DRILLING DATE: March 24, 2015

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG:

DRILLING CONTRACTOR: Marathon Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		BEDROCK SURFACE		72.56																
4	Rotary Drill NQ Core	Fresh, thinly to medium bedded, grey, fine grained, non-porous LIMESTONE BEDROCK, with partings and thin interbeds of black shale		3.06	1	95														Bentonite Seal Silica Sand
5					2	80														38 mm Diam. PVC #10 Slot Screen
6				69.65																
		End of Drillhole		5.97																W.L. in Screen at Elev. 72.87 m on March 27, 2015
7																				
8																				
9																				
10																				
11																				
12																				
13																				

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: JD

CHECKED: TMS

MIS-RCK 004 1525987.GPJ GAL-MISS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF DRILLHOLE: 15-5

SHEET 2 OF 3

LOCATION: N 5027698.4 ;E 445234.4

DRILLING DATE: June 19, 2015

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 55

DRILLING CONTRACTOR: Marathon Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		BEDROCK SURFACE		72.91																
	Rotary Drill / NQ Core	Fresh, thinly to medium bedded, grey, fine grained, non-porous LIMESTONE BEDROCK, with partings to thin interbeds of black shale		2.58	1	100														
3													,BD,PL,RO							
4					2	100														
													,BD,PL,RO							
5					3	100							,BD,PL,RO							
													,BD,PL,RO							
6																				
7					4	100														Peltonite and Cement Grout
8													,BD,CU,RO							
													,BD,IR,RO							
					5	100							,BD,PL,RO							
													,BD,PL,RO							
9													,BD,PL,RO ,BD,PL,SM							
10					6	100														
													,BD,PL,SM							
													,BD,PL,RO							
11		- Broken core from 10.85 m to 10.90 m																		
		- Broken core from 11.35 m to 11.38 m			7	100							,BD,PL,RO							
12																				
					8								,BD,IR,RO							
		CONTINUED NEXT PAGE																		

DEPTH SCALE

1 : 50

LOGGED: HEC

CHECKED: TMS

Golder Associates

MIS-RCK 004 1525987.GPJ GAL-MISS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF DRILLHOLE: 15-5

SHEET 3 OF 3

LOCATION: N 5027698.4 ;E 445234.4

DRILLING DATE: June 19, 2015

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 55

DRILLING CONTRACTOR: Marathon Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		--- CONTINUED FROM PREVIOUS PAGE ---																		
13	Rotary Drill NQ Core	Fresh, thinly to medium bedded, grey, fine grained, non-porous LIMESTONE BEDROCK, with partings to thin interbeds of black shale			8	100														Silica Sand
14													,BD,PL,RO ,BD,PL,RO							50 mm Diam. PVC #10 Slot Screen
					9	100							,BD,PL,RO ,BD,PL,RO							
15													,BD,PL,RO							
				60.15																
		End of Drillhole		15.34																W.L. in Screen at Elev. 71.83 m on August 20, 2015
16																				
17																				
18																				
19																				
20																				
21																				
22																				

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: HEC

CHECKED: TMS

MIS-RCK 004 1525987.GPJ GAL-MISS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF BOREHOLE: 15-1

SHEET 1 OF 2

LOCATION: N 5027695.2 ;E 445226.2

BORING DATE: March 25, 2015

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		75.86							
0	Power Auger 200 mm Diam. (Hollow Stem)	ASPHALTIC CONCRETE		0.00							
		FILL - (GW/SW) SAND and GRAVEL; grey brown; non-cohesive, moist, compact to very dense		0.10	1	SS	36				Flush Mount Casing
1		- Black staining from 0.25 m to 0.46 m			2	SS	21				
					3	SS	13				
2					4	SS	>50				Bentonite Seal
				73.43							
		Borehole continued on RECORD OF DRILLHOLE 15-1		2.43							
3											
4											
5											
6											
7											
8											
9											
10											

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: JD

CHECKED: TMS

MIS-BHS 001 1525987.GPJ GAL-MIS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF BOREHOLE: 15-2

SHEET 1 OF 2

LOCATION: N 5027707.7 ;E 445228.3

BORING DATE: March 24, 2015

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		75.70							
0	Power Auger 200 mm Diam. (Hollow Stem)	ASPHALTIC CONCRETE		0.00							
		FILL - (GW/SW) SAND and GRAVEL; grey brown; non-cohesive, moist, compact to very dense		0.10	1	SS	58				Flush Mount Casing
1					2	SS	68				
					3	SS	70				
2					4	SS	25				Bentonite Seal
				72.99	5	SS	>50				
		Borehole continued on RECORD OF DRILLHOLE 15-2		2.71							
3											
4											
5											
6											
7											
8											
9											
10											

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: JD

CHECKED: TMS

MIS-BHS 001 1525987.GPJ GAL-MIS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF BOREHOLE: 15-3

SHEET 1 OF 2

LOCATION: N 5027716.1 ;E 445220.9

BORING DATE: March 24, 2015

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		75.75							
0	Power Auger 200 mm Diam. (Hollow Stem)	ASPHALTIC CONCRETE		0.00							
		FILL - (GW/SW) SAND and GRAVEL; grey brown; non-cohesive, moist, compact to very dense		0.10	1	SS	69				Flush Mount Casing
1					2	SS	93				
					3	SS	11				
2					4	SS	13				Bentonite Seal
				72.98	5	SS	>50				
		Borehole continued on RECORD OF DRILLHOLE 15-3		2.77							
3											
4											
5											
6											
7											
8											
9											
10											

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: JD

CHECKED: TMS

MIS-BHS 001 1525987.GPJ GAL-MIS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF BOREHOLE: 15-4

SHEET 1 OF 2

LOCATION: N 5027715.5 ;E 445230.4

BORING DATE: March 24, 2015

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		75.62							
	Power Auger 200 mm Diam. (Hollow Stem)	ASPHALTIC CONCRETE		0.00							
		FILL - (SW) gravelly SAND; grey with dark grey staining; non-cohesive, moist, very dense		0.10	1	SS	>50				Flush Mount Casing
		FILL - (GW/SW) SAND and GRAVEL, trace silt; grey brown; non-cohesive, moist, compact to very dense		0.25	2	SS	25				
1					3	SS	17				
2					4	SS	10				Bentonite Seal
					5	SS	>50				
3				72.56							
		Borehole continued on RECORD OF DRILLHOLE 15-4		3.06							
4											
5											
6											
7											
8											
9											
10											

DEPTH SCALE

1 : 50

LOGGED: JD

CHECKED: TMS

Golder Associates

MIS-BHS 001 1525987.GPJ GAL-MIS.GDT 08/21/15 JM

PROJECT: 1525987

RECORD OF BOREHOLE: 15-5

SHEET 1 OF 3

LOCATION: N 5027698.4 ;E 445234.4

BORING DATE: June 19, 2015

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		75.49							
0	Power Auger 200 mm Diam. (Hollow Stem)	ASPHALTIC CONCRETE		0.00							Cement Grout
		FILL - (SW) gravelly SAND, angular; grey (PAVEMENT STRUCTURE)		0.10 75.18							
		FILL - (SW) gravelly SAND; brown, contains cobbles; non-cohesive, moist, dense to very dense		0.31	1	SS	61				
1					2	SS	>50				
											Peltonite and Cement Grout
2					3	SS	32				
				73.20							
		(SM) SILTY SAND, trace gravel; brown, contains organic matter; non-cohesive, wet, very dense		2.29 72.91	4	SS	>50				
		Borehole continued on RECORD OF DRILLHOLE 15-5		2.58							
3											
4											
5											
6											
7											
8											
9											
10											

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: HEC

CHECKED: TMS

MIS-BHS 001 1525987.GPJ GAL-MIS.GDT 08/21/15 JM

Appendix E: Analytical Summary Tables

Table 1 - Analytical Results in Soil - PHC and VOC
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

			770 Bronson Avenue								557 Cambridge Streat and 774 Bronson Avenue			
Parameter	**Units**	**MECP Table 7 [1]**	**BH15-1 SA1**	**BH15-1 SA4**	**BH15-2 SA1**	**BH15-2 SA4**	**BH15-3 SA1**	**BH-3 SA3**	**BH15-4 SA1**	**BH15-4 SA3**	**BH15-1-2**	**BH15-2-2**	**BH15-3-4**	**BH-15-3-104 (Duplicate BH15-3-4)**
Sampling Date			**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**11-Jan-2016**	**11-Jan-2016**	**11-Jan-2016**	**11-Jan-2016**
Sample Depth (mbgs)		Orange	0.1 to 0.7	2.0 to 2.4	0.1 to 0.7	2.0 to 2.4	0.1 to 0.7	1.4 t o2.0	0.1 to 0.7	1.4 to 2.0	0.15 to 0.61	0.61 to 0.83	1.22 to 1.83	1.22 to 1.83
Lab			AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	Maxxam	Maxxam	Maxxam	Maxxam
Certificate of Analysis			15T957961	15T957961	15T957961	15T957961	15T957961	15T957961	15T957961	15T957961	B605611	B605611	B605611	B605611
Volatile Organic Compounds														
Acetone	ug/g dry	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g dry	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.020	<0.020	<0.020	<0.020
Bromodichloromethane	ug/g dry	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Bromoform	ug/g dry	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Bromomethane	ug/g dry	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Carbon Tetrachloride	ug/g dry	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g dry	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Chloroform	ug/g dry	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g dry	9.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane	ug/g dry	16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	ug/g dry	3.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g dry	4.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g dry	0.083	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g dry	3.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g dry	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	ug/g dry	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	ug/g dry	3.4	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	ug/g dry	0.084	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g dry	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropylene	ug/g dry	NV	-	-	-	-	-	-	-	-	<0.030	<0.030	<0.030	<0.030
trans-1,3-Dichloropropylene	ug/g dry	NV	-	-	-	-	-	-	-	-	<0.040	<0.040	<0.040	<0.040
1,3-Dichloropropene, total	ug/g dry	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	ug/g dry	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Ethylene dibromide	ug/g dry	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.050	<0.050	<0.050	<0.050
Hexane	ug/g dry	2.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone (2-Butanone)	ug/g dry	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	ug/g dry	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl tert-butyl ether	ug/g dry	0.75	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Methylene Chloride	ug/g dry	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Styrene	ug/g dry	0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	ug/g dry	0.058	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g dry	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Tetrachloroethylene	ug/g dry	0.28	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Toluene	ug/g dry	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	ug/g dry	0.38	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g dry	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	ug/g dry	0.061	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.050	<0.050	<0.050	<0.050
Trichlorofluoromethane	ug/g dry	4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Vinyl Chloride	ug/g dry	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.020	<0.020	<0.020	<0.020
m/p-Xylene	ug/g dry	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020	<0.020	<0.020
o-Xylene	ug/g dry	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020	<0.020	<0.020
Xylenes, total	ug/g dry	3.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050
Petroleum Hydrocarbons														
F1 PHC (C6 - C10) - BTEX*	ug/g dry	55	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10
F2 PHC (C10-C16)	ug/g dry	98	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 PHC (C16-C34)	ug/g dry	300	<50	<50	<50	<50	<50	<50	740	<50	<50	<50	<50	<50
F4 PHC (C34-C50)**	ug/g dry	2800	<50	<50	<50	<50	<50	<50	1100	<50	<50	<50	<50	140

NOTES:

1	Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
*	F1 fraction does not include BTEX.
**	In instances where the PHC F2 to F4 chromatogram did not reach baseline, the F4 fraction result shown is the highest value obtained via the gas chromatograph/flame ionization detection method or the gravimetric method.
ND	Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
NV	No Value
N/A	Not Applicable
-	Parameter not analyzed
m bgs	Metres below ground surface
	Indicates soil exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 2 - Analytical Results in Soil - PAH
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON

OTT-22019409-A0			770 Bronson Avenue							557 Cambridge Street and 774 Bronson Avenue			
Parameter	**Units**	**MECP Table 7** [1]	**BH15-1 SA1**	**BH15-1 SA4**	**BH15-2 SA1**	**BH15-2 SA3**	**BH-3 SA1**	**BH-3 SA3**	**BH15-4 SA3**	**BH15-1-2**	**BH15-2-2**	**BH15-3-4**	**BH-15-3-104 (Duplicate BH15-3-4)**
Sampling Date			**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**24-Mar-2015**	**11-Jan-2016**	**11-Jan-2016**	**11-Jan-2016**	**11-Jan-2016**
Sample Depth (mbgs)		Orange	0.1 to 0.7	2.0 to 2.4	0.1 to 0.7	1.4 to 2.0	0.1 to 0.7	1.4 t o2.0	1.4 to 2.0	0.15 to 0.61	0.61 to 0.83	1.22 to 1.83	1..22 to 1.83
Lab			AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	Maxxam	Maxxam	Maxxam	Maxxam
Paracel Certificate of Analysis			15T957961	15T957961	15T957961	15T957961	15T957961	15T957961	15T957961	B605611	B605611	B605611	B605611
Semi-Volatiles													
Acenaphthene	ug/g dry	7.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	<0.0050	<0.0050	<0.0050
Acenaphthylene	ug/g dry	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.066	<0.0050	<0.0050	<0.0050
Anthracene	ug/g dry	0.67	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	<0.0050	<0.0050	<0.0050
Benzo[a]anthracene	ug/g dry	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.72	<0.0050	<0.0050	0.02
Benzo[a]pyrene	ug/g dry	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.78	<0.0050	<0.0050	0.02
Benzo[b]fluoranthene	ug/g dry	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	<0.010	<0.010	0.035
Benzo[g,h,i]perylene	ug/g dry	6.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.42	<0.0050	<0.0050	0.015
Benzo[k]fluoranthene	ug/g dry	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.41	<0.0050	<0.0050	0.0099
Chrysene	ug/g dry	7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.71	<0.0050	<0.0050	0.02
Dibenzo[a,h]anthracene	ug/g dry	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	<0.0050	<0.0050	<0.0050
Fluoranthene	ug/g dry	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.9	0.0095	0.0084	0.035
Fluorene	ug/g dry	62	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.0050	<0.0050	<0.0050
Indeno[1,2,3-cd]pyrene	ug/g dry	0.38	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.44	<0.0050	<0.0050	0.0099
Methylnaphthalene (1&2)	ug/g dry	0.99	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.037	<0.0071	<0.0071	<0.0071
Naphthalene	ug/g dry	0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.022	<0.0050	<0.0050	<0.0050
Phenanthrene	ug/g dry	6.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	<0.0050	<0.0050	0.02
Pyrene	ug/g dry	78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.3	0.0095	0.0084	0.03

NOTES:

1	Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
ND	Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
NV	No Value
N/A	Not Applicable
-	Parameter not analyzed
m bgs	Metres below ground surface
	Indicates soil exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 3 - Analytical Results in Soil - Inorganic Parameters
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

			557 Cambridge Street and 774 Bronson Avenue			
Parameter	**Units**	**MECP Table 7 [2]**	**BH15-4-1**	**BH15-5-2**	**BH15-6-2**	**BH-6-102 (Duplicate of BH-6-2)**
Sampling Date			**11-Jan-2016**	**11-Jan-2016**	**11-Jan-2016**	**11-Jan-2016**
Sample Depth (mbgs)		Orange	0.0 to 0.6	0.2 to 0.6	0.1 to 0.6	0.1 to 0.6
Lab			Maxxam	Maxxam	Maxxam	Maxxam
Certificate of Analysis			B605611	B605611	B605611	B605611
Metals						
Antimony	ug/g dry	7.5	0.63	1	0.92	1
Arsenic	ug/g dry	18	15	3.1	2.7	3.6
Barium	ug/g dry	390	160	130	110	130
Beryllium	ug/g dry	4	0.52	0.5	0.28	0.33
Boron	ug/g dry	120	7.2	17	<5.0	<5.0
Cadmium	ug/g dry	1.2	0.3	0.19	0.22	0.29
Chromium	ug/g dry	160	24	48	16	19
Chromium (VI)	ug/g dry	8	<0.2	-	-	-
Cobalt	ug/g dry	22	6.8	11	4.4	5.1
Copper	ug/g dry	140	28	17.0	24	22
Lead	ug/g dry	120	140	63	190	210
Mercury	ug/g dry	0.27	0.39	<0.050	0.076	0.13
Molybdenum	ug/g dry	6.9	1.8	0.77	1	1.1
Nickel	ug/g dry	100	15	140	11	11.0
Selenium	ug/g dry	2.4	0.72	<0.50	<0.50	<0.50
Silver	ug/g dry	20	<0.20	<0.20	<0.20	<0.20
Thallium	ug/g dry	1	0.19	0.085	0.1	0.12
Uranium	ug/g dry	23	0.49	3.8	0.49	100
Vanadium	ug/g dry	86	34	30	17	20
Zinc	ug/g dry	340	120	97	170	190
General Inorganics						
Cyanide, free	ug/g dry	0.051	0.09	-	-	-
Conductivity	mS/cm	0.7	0.38	0.48	0.54	0.46
SAR	-	5	0.67	0.7	0.16	0.16
pH	pH Units	5 to 9	8.25	8.22	-	-

NOTES:

1	Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for
ND	Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
NV	No Value
N/A	Not Applicable
-	Parameter not analyzed
m bgs	Metres below ground surface
	Indicates soil exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 4 - Analytical Results in Groundwater - PHC and VOC
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

			770 Bronson Avenue															
Parameter	**Units**	**MECP Table 7 [2]**	**15-1**	**MW15-1**	**15-2**	**Dup 1**	**MW15-2**	**15-3**	**MW15-3**	**15-4**	**MW15-5**	**Dup 1 (Field Duplicate MW15-5)**	**Field Blank**	**Trip Blank**	**BH15-2A**	**BH15-2B**	**BH15-102B (Field Duplicate BH15-2B)**	**BH15-3A**
Sampling Date		Dark Orange	27-Mar-2015	11-Aug-2022	27-Mar-2015	27-Mar-2015	11-Aug-2022	27-Mar-2015	11-Aug-2022	27-Mar-2015	11-Aug-2022	11-Aug-2022	27-Mar-2015	27-Mar-2015	19-Jan-2016	19-Jan-2016	19-Jan-2016	19-Jan-2016
Screen Depth (mbgs)			4.1 to 5.6	4.1 to 5.6	4.4 to 5.9	4.4 to 5.9	4.4 to 5.9	4.4 to 5.9	4.4 to 5.9	4.4 to 6.0	7.82 to 15.34	7.82 to 15.34	NA	NA	2.1 to 4.0	6.3 to 7.8	6.3 to 7.8	1.0 to 2.6
Lab			AGAT	Caduceon	AGAT	AGAT	Caduceon	AGAT	Caduceon	AGAT	Caduceon	Caduceon	AGAT	AGAT	Maxxam	Maxxam	Maxxam	Maxxam
Certificate of Analysis			15T957963	B22-25709	15T957963	15T957963	B22-25709	15T957963	B22-25709	15T957963	B22-25709	B22-25709	15T957963	15T957963	B611447	B611447	B611447	B611447
Volatile Organic Compounds																		
Acetone	ug/L	100000	<1.0	< 30	<2.0	<1.0	< 30	<1.0	< 30	<2.0	< 30	< 30	<1.0	<1.0	<19	<10	<10	20
Benzene	ug/L	0.5	<0.20	< 0.5	1.8	<0.20	< 0.5	<0.20	< 0.5	<0.40	< 0.5	< 0.5	<0.20	<0.20	<0.20	<0.20	<0.20	0.83
Bromodichloromethane	ug/L	67000	<0.20	< 2	<0.40	0.28	< 2	0.27	< 2	<0.40	< 2	< 2	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
Bromoform	ug/L	5	<0.10	< 5	<0.20	<0.10	< 5	<0.10	< 5	<0.20	< 5	< 5	<0.10	<0.10	<1.0	<1.0	<1.0	<1.0
Bromomethane	ug/L	0.89	<0.20	< 0.5	<0.40	<0.20	< 0.5	<0.20	< 0.5	<0.40	< 0.5	< 0.5	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	ug/L	0.2	<0.20	< 0.2	<0.40	<0.20	< 0.2	<0.20	< 0.2	<0.40	< 0.2	< 0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	ug/L	140	<0.10	< 0.5	<0.20	<0.10	< 0.5	<0.10	< 0.5	<0.20	< 0.5	< 0.5	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
Chloroform	ug/L	2	2.1	< 1	2.8	2.8	< 1	3.2	< 1	0.91	< 1	< 1	<0.20	<0.20	1.6	1.2	1.3	<0.20
Dibromochloromethane	ug/L	65000	<0.10	< 2	<0.20	<0.10	< 2	<0.10	< 2	<0.20	< 2	< 2	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	ug/L	3500	<0.20	< 2	<0.40	<0.20	< 2	<0.20	< 2	<0.40	< 2	< 2	<0.20	<0.20	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	150	<0.10	< 0.5	<0.20	<0.10	< 0.5	<0.10	< 0.5	<0.20	< 0.5	< 0.5	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	ug/L	7600	<0.10	< 0.5	<0.20	<0.10	< 0.5	<0.10	< 0.5	<0.20	< 0.5	< 0.5	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	ug/L	0.5	<0.10	< 0.5	<0.20	<0.10	< 0.5	<0.10	< 0.5	<0.20	< 0.5	< 0.5	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	ug/L	11	<0.30	< 0.5	<0.60	<0.30	< 0.5	<0.30	< 0.5	<0.60	< 0.5	< 0.5	<0.30	<0.30	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	ug/L	0.5	<0.20	< 0.5	<0.40	<0.20	< 0.5	<0.20	< 0.5	<0.40	< 0.5	< 0.5	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/L	0.5	<0.30	< 0.5	<0.60	<0.30	< 0.5	<0.30	< 0.5	<0.60	< 0.5	< 0.5	<0.30	<0.30	<0.20	<0.20	<0.20	<0.20
cis-1,2-Dichloroethylene	ug/L	1.6	<0.20	< 0.5	<0.40	<0.20	< 0.5	<0.20	< 0.5	<0.40	< 0.5	< 0.5	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	<0.20	< 0.5	<0.40	<0.20	< 0.5	<0.20	< 0.5	<0.40	< 0.5	< 0.5	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	ug/L	0.58	<0.20	< 0.5	<0.40	<0.20	< 0.5	<0.20	< 0.5	<0.40	< 0.5	< 0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropylene	ug/L	NV	-	< 0.5	-	-	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	-	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropylene	ug/L	NV	-	< 0.5	-	-	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	-	<0.40	<0.40	<0.40	<0.40
1,3-Dichloropropene, total	ug/L	0.5	<0.30	< 0.5	<0.60	<0.30	< 0.5	<0.30	< 0.5	<0.60	< 0.5	< 0.5	<0.30	<0.30	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	ug/L	54	<0.10	< 0.5	<0.20	<0.10	< 0.5	<0.10	< 0.5	0.55	< 0.5	< 0.5	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	<0.10	< 0.2	<0.20	<0.10	< 0.2	<0.10	< 0.2	<0.20	< 0.2	< 0.2	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
Hexane	ug/L	5	<0.20	< 5	<0.40	<0.20	< 5	<0.20	< 5	<0.40	< 5	< 5	<0.20	<0.20	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	ug/L	21000	11	< 20	21	<1.0	< 20	<1.0	< 20	<2.0	< 20	< 20	<1.0	<1.0	<10	<10	<10	<10
Methyl Isobutyl Ketone	ug/L	5200	<1.0	< 20	<2.0	<1.0	< 20	<1.0	< 20	<2.0	< 20	< 20	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	ug/L	15	<0.20	< 2	4.2	<0.20	< 2	<0.20	< 2	<0.40	< 2	< 2	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	ug/L	26	<0.30	< 5	<0.60	<0.30	< 5	<0.30	< 5	<0.60	< 5	< 5	<0.30	<0.30	<2.0	<2.0	<2.0	<2.0
Styrene	ug/L	43	<0.10	< 0.5	<0.20	<0.10	< 0.5	<0.10	< 0.5	<0.20	< 0.5	< 0.5	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	ug/L	1.1	<0.10	< 0.5	<0.20	<0.10	< 0.5	<0.10	< 0.5	<0.20	< 0.5	< 0.5	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.10	< 0.5	<0.20	<0.10	< 0.5	<0.10	< 0.5	<0.20	< 0.5	< 0.5	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	ug/L	0.5	<0.20	< 0.5	<0.40	<0.20	< 0.5	<0.20	< 0.5	<0.40	< 0.5	< 0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	ug/L	320	0.67	< 0.5	1.6	1.5	< 0.5	1.5	< 0.5	0.66	< 0.5	< 0.5	<0.20	<0.20	0.24	0.22	0.22	2.9
1,1,1-Trichloroethane	ug/L	23	<0.30	< 0.5	<0.60	<0.30	< 0.5	<0.30	< 0.5	<0.60	< 0.5	< 0.5	<0.30	<0.30	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	ug/L	0.5	<0.20	< 0.5	<0.40	<0.20	< 0.5	<0.20	< 0.5	<0.40	< 0.5	< 0.5	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	ug/L	0.5	<0.20	< 0.5	<0.40	<0.20	< 0.5	<0.20	< 0.5	<0.40	< 0.5	< 0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	ug/L	2000	<0.40	< 5	<0.80	<0.40	< 5	<0.40	< 5	<0.80	< 5	< 5	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	ug/L	0.50	<0.17	< 0.2	<0.37	<0.17	< 0.2	<0.17	< 0.2	<0.34	< 0.2	< 0.2	<0.17	<0.17	<0.20	<0.20	<0.20	<0.20
m/p-Xylene	ug/L	NV	<0.20	< 1.0	0.51	0.36	< 1.0	0.37	< 1.0	2.8	< 1.0	< 1.0	<0.20	<0.20	0.25	<0.20	<0.20	1.6
o-Xylene	ug/L	NV	<0.10	< 0.5	<0.20	0.10	< 0.5	<0.10	< 0.5	<0.20	< 0.5	< 0.5	<0.10	<0.10	<0.20	<0.20	<0.20	0.61
Xylenes, total	ug/L	72	<0.20	< 1.1	0.51	0.46	< 1.1	0.47	< 1.1	5.2	< 1.1	< 1.1	<0.20	<0.20	0.25	<0.20	<0.20	2.2
Petroleum Hydrocarbons																		
F1 PHC (C6 - C10) - BTEX*	ug/L	420	<25	< 25	<25	<25	< 25	<25	< 25	30	< 25	< 25	-	-	<25	<25	<25	<25
F2 PHC (C10-C16)	ug/L	150	<100	< 50	<100	<100	< 50	<100	< 50	<100	< 50	< 50	-	-	<100	<100	<100	<100
F3 PHC (C16-C34)	ug/L	500	<100	< 400	<100	<100	< 400	<100	< 400	<100	< 400	< 400	-	-	<200	<200	<200	<200
F4 PHC (C34-C50)**	ug/L	500	<100	< 400	<100	<100	< 400	<100	< 400	<100	< 400	< 400	-	-	<200	<200	<200	<200

NOTES:

1 — Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)

* — F1 fraction does not include BTEX.

** — In instances where the PHC F2 to F4 chromatogram did not reach baseline, the F4 fraction result shown is the highest value obtained via the gas chromatograph/flame ionization detection method or the gravimetric method.

ND — Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV — No Value

N/A — Not Applicable

\- — Parameter not analyzed

m bgs — Metres below ground surface

Indicates groundwater exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 4 - Analytical Results in Groundwater - PHC and VOC
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

			557 Cambridge Street and 774 Bronson Avenue															
Parameter	**Units**	**MECP Table 7 [2]**	**BH15-3A**	**BH15-3A**	**BH15-3B**	**BH15-3B**	**BH15-103B (Field Duplicate BH15-3B)**	**BH15-3B**	**BH15-4A**	**BH15-4A**	**BH15-4A**	**BH15-104A (Field Duplicate BH15-4A)**	**BH15-4B**	**BH15-4B**	**BH15-4B**	**BH15-4B**	**BH15-6A**	**BH15-6A**
Sampling Date			15-Feb-2016	23-Feb-2016	19-Jan-2016	15-Feb-2016	15-Feb-2016	23-Feb-2016	19-Jan-2016	16-Feb-2016	23-Feb-2016	23-Feb-2016	19-Jan-2016	21-Jan-2016	16-Feb-2016	23-Feb-2016	19-Jan-2016	16-Feb-2016
Screen Depth (mbgs)		Dark Orange	1.0 to 2.6	1.0 to 2.6	6.3 to 7.8	6.3 to 7.8	6.3 to 7.8	6.3 to 7.8	2.2 to 3.7	2.2 to 3.7	2.2 to 3.7	2.2 to 3.7	5.9 to 7.4	5.9 to 7.4	5.9 to 7.4	5.9 to 7.4	2.1 to 3.7	2.1 to 3.7
Lab			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Certificate of Analysis			B631126	B636643	B611447	B631126	B631126	B636643	B611447	B631126	B614405	B636643	B614405	B611447	B631126	B636643	B611447	B631126
Volatile Organic Compounds																		
Acetone	ug/L	100000	<10	<10	<10	<10	<10	<10	19	<10	<10	<10	-	14	<10	<10	<10	<10
Benzene	ug/L	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.27	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	ug/L	67000	<0.50	<0.50	0.59	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	<0.50	-	1.1	<0.50	<0.50	0.56	<0.50
Bromoform	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	ug/L	0.89	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.20	<0.20	<0.20	<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	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	ug/L	2	<0.20	<0.20	4.4	<0.20	<0.20	<0.20	11	0.76	0.22	0.20	-	14	1.7	0.9	4.6	1.3
Dibromochloromethane	ug/L	65000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	ug/L	3500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	150	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	ug/L	7600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<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	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	ug/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/L	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,2-Dichloroethylene	ug/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20
cis-1,3-Dichloropropylene	ug/L	NV	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropylene	ug/L	NV	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	-	<0.40	<0.40	<0.40	<0.40	<0.40
1,3-Dichloropropene, total	ug/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	ug/L	54	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20
Hexane	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	ug/L	21000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10
Methyl Isobutyl Ketone	ug/L	5200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	ug/L	15	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	ug/L	43	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	ug/L	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	ug/L	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	ug/L	320	<0.20	<0.20	0.27	<0.20	<0.20	<0.20	0.92	<0.20	<0.20	<0.20	0.24	<0.20	<0.20	<0.20	0.78	<0.20
1,1,1-Trichloroethane	ug/L	23	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	ug/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	ug/L	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	ug/L	2000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	ug/L	0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20
m/p-Xylene	ug/L	NV	<0.20	<0.20	0.29	<0.20	<0.20	<0.20	0.43	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.40	<0.20
o-Xylene	ug/L	NV	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.27	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylenes, total	ug/L	72	<0.20	<0.20	0.29	<0.20	<0.20	<0.20	0.70	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.40	<0.20
Petroleum Hydrocarbons																		
F1 PHC (C6 - C10) - BTEX*	ug/L	420	-	-	<25	-	-	-	-	-	-	-	<25	-	-	-	<25	-
F2 PHC (C10-C16)	ug/L	150	-	-	<100	-	-	-	-	-	-	-	<100	-	-	-	<100	-
F3 PHC (C16-C34)	ug/L	500	-	-	<200	-	-	-	-	-	-	-	<200	-	-	-	<200	-
F4 PHC (C34-C50)**	ug/L	500	-	-	<200	-	-	-	-	-	-	-	<200	-	-	-	<200	-

NOTES:

1 — Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)

* — F1 fraction does not include BTEX.

** — In instances where the PHC F2 to F4 chromatogram did not reach baseline, the F4 fraction result shown is the highest value obtained via the gas chromatograph/flame ionization detection method or the gravimetric method.

ND — Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV — No Value

N/A — Not Applicable

\- — Parameter not analyzed

m bgs — Metres below ground surface

Indicates groundwater exceedance of MECP Table 7 generic site condition standard for c

Table 4 - Analytical Results in Groundwater - PHC and VOC
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	MECP Table 7 [2]	BH15-6A	BH15-6B	BH15-6B	BH15-6B	Trip Blank	Trip Blank
Sampling Date			23-Feb-2016	21-Jan-2016	15-Feb-2016	23-Feb-2016	19-Jan-2016	23-Feb-2016
Screen Depth (mbgs)		Dark Orange	2.1 to 3.7	6.4 to 8.0	6.4 to 8.0	6.4 to 8.0	N/A	N/A
Lab			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Certificate of Analysis			B636643	B614405	B631126	B636643	B614405	B636643
Volatile Organic Compounds								
Acetone	ug/L	100000	<10	-	<10	<10	<10	<10
Benzene	ug/L	0.5	<0.20	-	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	ug/L	67000	<0.50	-	<0.50	<0.50	<0.50	<0.50
Bromoform	ug/L	5	<1.0	-	<1.0	<1.0	<1.0	<1.0
Bromomethane	ug/L	0.89	<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
Chlorobenzene	ug/L	140	<0.20	-	<0.20	<0.20	<0.20	<0.20
Chloroform	ug/L	2	1	-	3	1.3	<0.20	<0.20
Dibromochloromethane	ug/L	65000	<0.50	-	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	ug/L	3500	<1.0	-	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	150	<0.50	-	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	ug/L	7600	<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
1,1-Dichloroethane	ug/L	11	<0.20	-	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	ug/L	0.5	<0.50	-	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/L	0.5	<0.20	-	<0.20	<0.20	<0.20	<0.20
cis-1,2-Dichloroethylene	ug/L	1.6	<0.50	-	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	<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
cis-1,3-Dichloropropylene	ug/L	NV	<0.30	-	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropylene	ug/L	NV	<0.40	-	<0.40	<0.40	<0.40	<0.40
1,3-Dichloropropene, total	ug/L	0.5	<0.50	-	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	ug/L	54	<0.20	-	<0.20	<0.20	<0.20	<0.20
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	<0.20	-	<0.20	<0.20	<0.20	<0.20
Hexane	ug/L	5	<1.0	-	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	ug/L	21000	<10	-	<10	<10	<10	<10
Methyl Isobutyl Ketone	ug/L	5200	<5.0	-	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	ug/L	15	<0.50	-	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	ug/L	26	<2.0	-	<2.0	<2.0	-	<2.0
Styrene	ug/L	43	<0.50	-	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	ug/L	1.1	<0.50	-	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.50	-	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	ug/L	0.5	<0.20	-	<0.20	<0.20	<0.20	<0.20
Toluene	ug/L	320	<0.20	-	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	ug/L	23	<0.20	-	<0.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	ug/L	0.5	<0.50	-	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	ug/L	0.5	<0.20	-	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	ug/L	2000	<0.50	-	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	ug/L	0.50	<0.20	-	<0.20	<0.20	<0.20	<0.20
m/p-Xylene	ug/L	NV	<0.20	-	<0.20	<0.20	<0.20	<0.20
o-Xylene	ug/L	NV	<0.20	-	<0.20	<0.20	<0.20	<0.20
Xylenes, total	ug/L	72	<0.20	-	<0.20	<0.20	<0.20	<0.20
Petroleum Hydrocarbons								
F1 PHC (C6 - C10) - BTEX*	ug/L	420	-	<25	-	-	-	-
F2 PHC (C10-C16)	ug/L	150	-	<100	-	-	-	-
F3 PHC (C16-C34)	ug/L	500	-	<200	-	-	-	-
F4 PHC (C34-C50)**	ug/L	500	-	<200	-	-	-	-

NOTES:

1	Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)
*	F1 fraction does not include BTEX.
**	In instances where the PHC F2 to F4 chromatogram did not reach baseline, the F4 fraction result shown is the highest value obtained via the gas chromatograph/flame ionization detection method or the gravimetric method.
ND	Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
NV	No Value
N/A	Not Applicable
-	Parameter not analyzed
m bgs	Metres below ground surface
	Indicates groundwater exceedance of MECP Table 7 generic site condition standard for c

Table 5 - Analytical Results in Groundwater - PAH
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

			770 Bronson Avenue									557 Cambridge Street and 774 Bronson Avenue							
Parameter	**Units**	**MECP Table 7 [2]**	**15-1**	**MW15-1**	**15-2**	**MW15-2**	**15-3**	**MW15-3**	**15-4**	**MW15-5**	**Dup 1 (Field Duplicate MW15-5)**	**BH15-2A**	**BH15-2B**	**BH15-102B (Field Duplicate BH15-102B)**	**BH15-3A**	**BH15-3B**	**BH15-4A**	**BH15-4B**	**BH15-6A**
Sampling Date			27-Mar-2015	11-Aug-2022	27-Mar-2015	11-Aug-2022	27-Mar-2015	11-Aug-2022	27-Mar-2015	11-Aug-2022	11-Aug-2022	19-Jan-2016	19-Jan-2016	19-Jan-2016	Janury 21, 2016	19-Jan-2016	1-Mar-2016	1-Mar-2016	21-Jan-2016
Screen Depth (mbgs)		Dark Orange	4.1 to 5.6	4.1 to 5.6	4.4 to 5.9	4.4 to 5.9	4.4 to 5.9	4.4 to 5.9	4.4 to 6.0	7.82 to 15.34	7.82 to 15.34	2.1 to 4.0	6.3 to 7.8	6.3 to 7.8	1.0 to 2.6	6.3 to 7.85	2.2 to 3.7	5.9 to 7.4	2.1 to 3.7
Lab			AGAT	Caduceon	AGAT	Caduceon	AGAT	Caduceon	AGAT	Caduceon	Caduceon	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxaam	Maxamm	Maxamm
Certificate of Analysis			15T957963	B22-25709	15T957963	B22-25709	15T957963	B22-25709	15T957963	B22-25709	B22-25709	B611447	B611447	B611447	B614405	B611447	B614405	B614405	B614405
Semi-Volatiles																			
Acenaphthene	ug/L	17	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/L	1	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/L	1	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	0.059	<0.050	<0.050
Benzo[a]anthracene	ug/L	1.8	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	0.16	<0.050	<0.050
Benzo[a]pyrene	ug/L	0.81	<0.01	0.012	<0.01	< 0.01	<0.01	< 0.01	<0.01	< 0.01	< 0.01	<0.010	<0.010	<0.010	<0.010	<0.010	0.18	0.043	<0.010
Benzo[b]fluoranthene	ug/L	0.75	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	< 0.05	<0.10	<0.10	<0.10	<0.10	<0.10	0.24	0.055	<0.10
Benzo(b+k)fluoranthene	ug/L	NV	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-	-	-	-
Benzo[g,h,i]perylene	ug/L	0.2	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	0.12	<0.050	<0.050
Benzo[k]fluoranthene	ug/L	0.4	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	0.087	<0.050	<0.050
Chrysene	ug/L	0.7	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	0.15	<0.050	<0.050
Dibenzo[a,h]anthracene	ug/L	0.4	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/L	44	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	0.35	0.12	<0.050
Fluorene	ug/L	290	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno[1,2,3-cd]pyrene	ug/L	0.2	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	0.13	<0.050	<0.050
1-Methylnaphthalene	ug/L	1500	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	< 0.05	<0.050	<0.050	<0.050	0.05	0.050	<0.050	<0.050	<0.050
2-Methylnaphthalene	ug/L	1500	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	< 0.05	<0.050	<0.050	<0.050	0.05	0.050	<0.050	<0.050	<0.050
Methylnaphthalene (1&2)	ug/L	1500	<0.20	< 1	0.38	< 1	<0.20	< 1	1.5	< 1	< 1	<0.1	<0.1	<0.1	<0.1	0.10	<0.71	<0.1	<0.1
Naphthalene	ug/L	7	<0.20	< 0.05	0.36	< 0.05	<0.20	< 0.05	0.70	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	0.050	<0.050	<0.050	<0.050
Phenanthrene	ug/L	380	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	<0.10	< 0.05	< 0.05	<0.030	<0.030	<0.030	0.17	<0.030	0.99	<0.030	<0.030
Pyrene	ug/L	5.7	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	<0.20	< 0.05	< 0.05	<0.050	<0.050	<0.050	<0.050	<0.050	0.1	0.1	<0.050

NOTES:

1	Ontario Ministry of Environment, Conservation and Parks (MECP),
ND	Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
NV	No Value
N/A	Not Applicable
-	Parameter not analyzed
m bgs	Metres below ground surface
	Indicates goundwater exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 6 - Analytical Results in Groundwater - Inorganics
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

			557 Cambridge Street and 774 Bronson Avenue								
Parameter	**Units**	**MECP Table 7 [2]**	**BH15-2A**	**BH15-2B**	**BH15-102B (Field Duplicate BH15-102B)**	**BH15-3A**	**BH15-3B**	**BH15-4A**	**BH15-4B**	**BH15-6A**	**BH15-6B**
Sampling Date		Dark Orange	21-Jan-2016	21-Jan-2016	21-Jan-2016	21-Jan-2016	21-Jan-2016	1-Mar-2016	1-Mar-2016	1-Mar-2016	1-Mar-2016
Screen Depth (mbgs)			2.1 to 4.0	6.3 to 7.8	6.3 to 7.8	1.0 to 2.6	6.3 to 7.8	2.2 to 3.7	5.9 to 7.4	2.1 to 3.7	6.4 to 8.0
Lab			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Certificate of Analysis			B614405	B614405	B614405	B614405	B614405	B614405	B614405	B614405	B614405
Metals & Inorganics											
Antimony	ug/L	16000	<0.50	<0.50	<0.50	0.62	<0.50	<0.50	<0.50	1.1	0.75
Arsenic	ug/L	1500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	1.5
Barium	ug/L	23000	110	190	190	77	190	210	0.2	220	65
Beryllium	ug/L	53	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Boron	ug/L	36000	39	58	61	300	870	60	380	930	660
Cadmium	ug/L	2.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	ug/L	1800000	340000	570000	570000	460000	970000	950000	480000	110000	140000
Chromium	ug/L	640	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chromium (VI)	ug/L	110	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<2.5	<0.50	<0.50
Cobalt	ug/L	52	2.3	1.2	1.1	1.2	0.92	<0.50	<0.50	0.59	<0.50
Copper	ug/L	69	5.8	1.7	1.7	1.7	<1.0	2.3	3.2	1.4	1.6
Cyanide	ug/L	52	<2	<2	<2	<2	<2	<2	<2	<2	-
Lead	ug/L	20	3.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Mercury	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Molybdenum	ug/L	7300	3.1	1.9	2	4.7	0.98	3.1	14	22	3.4
Nickel	ug/L	390	3.6	2.9	2.5	3.4	1	2.1	2.5	1.3	<1.0
Sodium	ug/L	1800000	300000	450000	460000	520000	890000	520000	280000	120000	260000
Selenium	ug/L	50	<2.0	<2.0	<2.0	2.9	<2.0	<2.0	<2.0	<2.0	<2.0
Silver	ug/L	1.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Thallium	ug/L	400	0.05	<0.050	<0.050	0.074	<0.050	<0.050	0.054	<0.050	<0.050
Uranium	ug/L	330	1.7	2	1.8	3.1	0.88	2	2.5	4.7	2.6
Vanadium	ug/L	200	1.7	<0.50	<0.50	<0.50	<1.0	<1.0	<0.050	<0.050	0.96
Zinc	ug/L	890	12	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

NOTES:

1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (coarse textured soils)

ND Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

NV No Value

N/A Not Applicable

- Parameter not analyzed

m bgs Metres below ground surface

Indicates goundwater exceedance of MECP Table 7 generic site condition standard for coarse textured soil and residential/parkland/institutional property use

Table 7 - Maximum Concentration - Soil
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Sample Location	Sample Depth (mbgs)	Sampling Date	Maximum Concentration	MECP Table 7
Metals and Inorganics					
Mercury	BH15-4 (WSP)	0.0 to 0.6	11-Jan-2016	0	0.27
Antimony	BH15-5 (WSP)	0.2 to 0.6	11-Jan-2016	1	8
Arsenic	BH15-1 (WSP)	0.0 to 0.6	11-Jan-2016	15.00	18
Barium	BH15-5 (WSP)	0.2 to 0.6	11-Jan-2016	17	390
Beryllium	BH15-4 (WSP)	0.0 to 0.6	11-Jan-2016	0.52	4
Boron (Total)	BH15-5 (WSP)	0.2 to 0.6	11-Jan-2016	17	120
Cadmium	BH15-6 (WSP)	0.1 to 0.6	11-Jan-2016	0.29	1.2
Chromium	BH15-5(WSP)	0.2 to 0.6	11-Jan-2016	48	160
Chromium (VI)	BH15-4 (WSP)	0.0 to 0.6	11-Jan-2016	<0.2	8
Cobalt	BH15-5 (WSP)	0.2 to 0.6	11-Jan-2016	11	22
Copper	BH15-4 (WSP)	0.0 to 0.6	11-Jan-2016	28	140
Lead	BH15-6 (WSP)	0.1 to 0.6	11-Jan-2016	210	120
Molybdenum	BH15-4 (WSP)	0.0 to 0.6	11-Jan-2016	1.8	7
Nickel	BH15-5 (WSP)	0.2 to 0.6	11-Jan-2016	140	100
Selenium	BH15-4 (WSP)	0.0 to 0.6	11-Jan-2016	0.72	2
Silver	All WSP Locations	0.0 to 0.6	11-Jan-2016	<0.20	20.0
Thallium	BH15-4 (WSP)	0.0 to 0.6	11-Jan-2016	0.19	1
Uranium	BH15-6 (WSP)	0.1 to 0.6	11-Jan-2016	100	23
Vanadium	BH15-4 (WSP)	0.0 to 0.6	11-Jan-2016	34	86
Zinc	BH15-6 (WSP)	0.1 to 0.6	11-Jan-2016	190	340
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0	7.9
Acenaphthylene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.1	0.15
Anthracene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.23	0.67
Benzo(a)anthracene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.72	0.5
Benzo(a)pyrene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.78	0.3
Benzo(b/j)fluoranthene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	1.1	0.78
Benzo(g,h,i)perylene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.42	6.6
Benzo(k)fluoranthene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.41	0.78
Chrysene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.71	7
Dibenz(a,h)anthracene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.13	0.1
Fluoranthene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	1.9	0.69
Fluorene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.11	62
Indeno(1,2,3-cd)pyrene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.4	0.38
Methylnaphthalene, 2-(1-)	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.037	0.99
Naphthalene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	0.022	0.6
Phenanthrene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	1.1	6.2
Pyrene	BH15-1 (WSP)	0.15 to 0.61	11-Jan-2016	1	78
Petroleum Hydrocarbons					
F1 PHC (C6 - C10) - BTEX	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<10	55
F2 PHC (C10-C16)	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<10	98
F3 PHC (C16-C34)	BH15-4 (Golder)	0.1 to 0.7	24-Mar-2015	740	300
F4 PHC (C34-C50)	BH15-4 (Golder)	0.1 to 0.7	24-Mar-2015	1100	2800
Volatile Organic Compounds					
Acetone (2-Propanone)	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.50	16
Benzene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.02	0.21
Bromodichloromethane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	13
Bromoform	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.27
Bromomethane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.05
Carbon Tetrachloride	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.05
Chlorobenzene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	2.4
Chloroform	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.05
Dibromochloromethane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	9.4
Dichlorodifluoromethane (FREON 12)	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	16
1,2-Dichlorobenzene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	3.4
1,3-Dichlorobenzene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	4.8
1,4-Dichlorobenzene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.083
1,1-Dichloroethane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.02	3.5
1,2-Dichloroethane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.03	0.05
1,1-Dichloroethylene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.05
cis-1,2-Dichloroethylene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.02	3.4
trans-1,2-Dichloroethylene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.084
1,2-Dichloropropane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.03	0.05
cis-1,3-Dichloropropylene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.030	NV
trans-1,3-Dichloropropylene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.040	NV
1,3-Dichloropropene (cis+trans)	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.04	0.05
Ethylbenzene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	2
Ethylene Dibromide	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.04	0.05
Hexane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	2.8
Methyl Ethyl Ketone (2-Butanone)	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.50	16
Methyl Isobutyl Ketone	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.50	1.7
Methyl t-butyl ether (MTBE)	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.75
Methylene Chloride(Dichloromethane)	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.1
Styrene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.7
1,1,1,2-Tetrachloroethane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.04	0.058
1,1,2,2-Tetrachloroethane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.05
Tetrachloroethylene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.28
Toluene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	2.3
1,1,1-Trichloroethane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	0.38
1,1,2-Trichloroethane	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.04	0.05
Trichloroethylene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.03	0.061
Trichlorofluoromethane (FREON 11)	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	4
Vinyl Chloride	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.02	0.02
m/p-Xylene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	NV
o-Xylene	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	NV
Total Xylenes	All Locations	0.1 to 2.4	24-Mar-2015, 11-Jan-2016	<0.05	3.1

NOTES:
All results are in ppm on dry weight basis
Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7
Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use Property Use (coarse textured soils)

Table 8 - Maximum Concentration - Groundwater
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Sample Location	Sample Depth (mbgs)	Sampling Date	Maximum Concentration	MECP Table 7
Metals and Inorganics					
Mercury	All WSP sampling locations	1.0 to 8.0	All 2016 sampling dates	<0.1	0.10
Antimony	BH15-6A (WSP)	2.1 to 3.7	1-Mar-2016	1.1	16000
Arsenic	BH15-6B (WSP)	6.4 to 8.0	1-Mar-2016	1.5	1500
Barium	BH15-6A (WSP)	2.1 to 3.7	1-Mar-2016	220	23000
Beryllium	All WSP sampling locations	1.0 to 8.0	All 2016 sampling dates	<0.50	53
Boron (Total)	BH15-6A (WSP)	2.1 to 3.7	1-Mar-2016	930	36000
Cadmium	All WSP sampling locations	1.0 to 8.0	All 2016 sampling dates	<0.50	2.1
Chloride	BH15-3B (WSP)	6.3 to 7.8	21-Jan-2016	970000	1800000
Chromium	All WSP sampling locations	1.0 to 8.0	All 2016 sampling dates	<5.0	640
Chromium (VI)	All WSP sampling locations	1.0 to 8.0	All 2016 sampling dates	<0.50	110
Cobalt	BH15-2A (WSP)	2.1 to 4.0	21-Jan-2016	2.3	52
Copper	BH15-2A (WSP)	2.1 to 4.0	21-Jan-2016	5.8	69
Lead	BH15-2A (WSP)	2.1 to 4.0	21-Jan-2016	3.7	20
Molybdenum	BH15-6A (WSP)	2.1 to 3.7	1-Mar-2016	22	7300
Nickel	BH15-2A (WSP)	2.1 to 4.0	21-Jan-2016	3.6	390
Selenium	BH15-3A (WSP)	1.0 to 2.6	21-Jan-2022	2.9	50
Silver	All WSP sampling locations	1.0 to 8.0	All 2016 sampling dates	<0.10	1.2
Sodium	BH15-3B (WSP)	6.3 to 7.8	21-Jan-2016	890000	1,800,000
Thallium	BH15-3A (WSP)	1.0 to 2.6	21-Jan-2022	0.074	400
Uranium	BH15-6A (WSP)	2.1 to 3.7	1-Mar-2016	4.7	330
Vanadium	BH15-2A (WSP)	2.1 to 4.0	21-Jan-2016	1.7	200
Zinc	BH15-2A (WSP)	2.1 to 4.0	21-Jan-2016	12	890
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	All sampling locations	1.0 to 15.3	All sampling dates	<0.050	17
Acenaphthylene	All sampling locations	1.0 to 15.3	All sampling dates	<0.050	1
Anthracene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.059	1
Benzo(a)anthracene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.16	1.8
Benzo(a)pyrene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.18	0.81
Benzo(b/j)fluoranthene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.24	0.75
Benzo(g,h,i)perylene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.12	0.2
Benzo(k)fluoranthene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.087	0.4
Chrysene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.15	0.7
Dibenz(a,h)anthracene	All sampling locations	1.0 to 15.3	All sampling dates	<0.050	0.4
Fluoranthene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.35	44
Fluorene	All sampling locations	1.0 to 15.3	All sampling dates	<0.050	290
Indeno(1,2,3-cd)pyrene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.13	0.2
1-Methylnaphthalene	All sampling locations	1.0 to 15.3	All sampling dates	<0.050	1500
2-Methylnaphthalene	All sampling locations	1.0 to 15.3	All sampling dates	<0.050	1500
Methylnaphthalene, 2-(1-)	BH15-4 (Golder)	4.4 to 6.0	27-Mar-2015	1.5	1500
Naphthalene	BH15-4 (Golder)	4.4 o 6.0	27-Mar-2015	0.7	7
Phenanthrene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.99	380
Pyrene	BH15-4A (WSP)	2.2 to 3.7	1-Mar-2016	0.10	5.7
Petroleum Hydrocarbons					
F1 PHC (C6 - C10) - BTEX	All sampling locations	1.0 to 15.3	All sampling dates	<25	420
F2 PHC (C10-C16)	All sampling locations	1.0 to 15.3	All sampling dates	<100	150
F3 PHC (C16-C34)	All sampling locations	1.0 to 15.3	All sampling dates	<400	500
F4 PHC (C34-C50)	All sampling locations	1.0 to 15.3	All sampling dates	<400	500
Volatile Organic Compounds					
Acetone (2-Propanone)	BH15-3A (WSP)	1.0 to 2.6	19-Jan-2016	20	100000
Benzene	BH15-2 (Golder)	4.4 to 5.9	27-Mar-2015	1.8	0.5
Bromodichloromethane	BH15-4A (WSP)	2.2 to 3.7	27-Mar-2015	1.5	67000
Bromoform	All sampling locations	1.0 to 15.3	All sampling dates	<0.10	5
Bromomethane	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	0.89
Carbon Tetrachloride	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	0.2
Chlorobenzene	All sampling locations	1.0 to 15.3	All sampling dates	<0.10	140
Chloroform				14	2
Dibromochloromethane	All sampling locations	1.0 to 15.3	All sampling dates	<0.10	65000
Dichlorodifluoromethane (FREON 12)	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	3500
1,2-Dichlorobenzene	All sampling locations	1.0 to 15.3	All sampling dates	<0.10	150
1,3-Dichlorobenzene	All sampling locations	1.0 to 15.3	All sampling dates	<0.10	7600
1,4-Dichlorobenzene	All sampling locations	1.0 to 15.3	All sampling dates	<0.10	0.5
1,1-Dichloroethane	All sampling locations	1.0 to 15.3	All sampling dates	<0.30	11
1,2-Dichloroethane	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	0.5
1,1-Dichloroethylene	All sampling locations	1.0 to 15.3	All sampling dates	<0.30	0.5
cis-1,2-Dichloroethylene	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	1.6
trans-1,2-Dichloroethylene	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	1.6
1,2-Dichloropropane	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	0.58
cis-1,3-Dichloropropylene	All sampling locations	1.0 to 15.3	All sampling dates	< 0.5	NV
trans-1,3-Dichloropropylene	All sampling locations	1.0 to 15.3	All sampling dates	< 0.5	NV
1,3-Dichloropropene (cis+trans)	All sampling locations	1.0 to 15.3	All sampling dates	<0.60	0.5
Ethylbenzene	BH15-4 (Golder)	4.4 to 6.0	27-Mar-2015	0.55	54
Ethylene Dibromide	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	0.2
Hexane	All sampling locations	1.0 to 15.3	All sampling dates	<5	5
Methyl Ethyl Ketone (2-Butanone)	BH15-2 (Golder)	4.4 to 5.9	27-Mar-2015	21	21000
Methyl Isobutyl Ketone	All sampling locations	1.0 to 15.3	All sampling dates	<1.0	5200
Methyl t-butyl ether (MTBE)	BH15-2 (Golder)	4.4 to 5.9	27-Mar-2015	4.2	15
Methylene Chloride(Dichloromethane)	All sampling locations	1.0 to 15.2	All sampling dates	<0.30	26
Styrene	All sampling locations	1.0 to 15.3	All sampling dates	<0.10	43
1,1,1,2-Tetrachloroethane	All sampling locations	1.0 to 15.3	All sampling dates	<0.10	1.1
1,1,2,2-Tetrachloroethane	All sampling locations	1.0 to 15.3	All sampling dates	<0.10	0.5
Tetrachloroethylene	All sampling locations	1.0 to 15.4	All sampling dates	<0.20	0.5
Toluene	BH15-3A (WSP)	1.0 to 2.6	19-Jan-2016	2.9	320
1,1,1-Trichloroethane	All sampling locations	1.0 to 15.3	All sampling dates	<0.30	23
1,1,2-Trichloroethane	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	0.5
Trichloroethylene	All sampling locations	1.0 to 15.3	All sampling dates	<0.20	0.5
Trichlorofluoromethane (FREON 11)	All sampling locations	1.0 to 15.4	All sampling dates	<0.40	2000
Vinyl Chloride	All sampling locations	1.0 to 15.5	All sampling dates	<0.17	0.5
m/p-Xylene	BH15-4 (Golder)	4.4 to 6.0	27-Mar-2015	2.8	NV
o-Xylene	BH15-3A (WSP)	1.0 to 2.6	19-Jan-2016	0.61	NV
Total Xylenes	BH15-4 (Golder)	4.4 to 6.0	27-Mar-2015	5.2	72

NOTES:
NV - No value
Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 7 Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use Property Use (coarse textured soils)

Table 9 - Relative Percent Differences - PHC and VOC in Soil
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	RDL	BH15-3-4	BH-15-3-104	RPD (%)	Alert Limit (%)
			11-Jan-2016	11-Jan-2016		
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	ug/g dry	7	<10	<10	nc	60
F2 PHC (C10-C16)	ug/g dry	4	<10	<10	nc	60
F3 PHC (C16-C34)	ug/g dry	8	<50	<50	nc	60
F4 PHC (C34-C50)	ug/g dry	6	<50	140	nc	60
Volatiles						
Acetone	ug/g dry	0.50	<0.50	<0.50	nc	100
Benzene	ug/g dry	0.02	<0.020	<0.020	nc	100
Bromodichloromethane	ug/g dry	0.05	<0.050	<0.050	nc	100
Bromoform	ug/g dry	0.05	<0.050	<0.050	nc	100
Bromomethane	ug/g dry	0.05	<0.050	<0.050	nc	100
Carbon Tetrachloride	ug/g dry	0.05	<0.050	<0.050	nc	100
Chlorobenzene	ug/g dry	0.05	<0.050	<0.050	nc	100
Chloroform	ug/g dry	0.05	<0.050	<0.050	nc	100
Dibromochloromethane	ug/g dry	0.05	<0.050	<0.050	nc	100
Dichlorodifluoromethane	ug/g dry	0.05	<0.050	<0.050	nc	100
1,2-Dichlorobenzene	ug/g dry	0.05	<0.050	<0.050	nc	100
1,3-Dichlorobenzene	ug/g dry	0.05	<0.050	<0.050	nc	100
1,4-Dichlorobenzene	ug/g dry	0.05	<0.050	<0.050	nc	100
1,1-Dichloroethane	ug/g dry	0.05	<0.050	<0.050	nc	100
1,2-Dichloroethane	ug/g dry	0.05	<0.050	<0.050	nc	100
1,1-Dichloroethylene	ug/g dry	0.05	<0.050	<0.050	nc	100
cis-1,2-Dichloroethylene	ug/g dry	0.05	<0.050	<0.050	nc	100
trans-1,2-Dichloroethylene	ug/g dry	0.05	<0.050	<0.050	nc	100
1,2-Dichloropropane	ug/g dry	0.05	<0.050	<0.050	nc	100
cis-1,3-Dichloropropylene	ug/g dry	0.05	<0.030	<0.030	nc	100
trans-1,3-Dichloropropylene	ug/g dry	0.05	<0.040	<0.040	nc	100
1,3-Dichloropropene, total	ug/g dry	0.05	<0.050	<0.050	nc	100
Ethylbenzene	ug/g dry	0.05	<0.050	<0.050	nc	100
Ethylene dibromide (dibromoethane, 1,2-	ug/g dry	0.05	<0.050	<0.050	nc	100
Hexane	ug/g dry	0.05	<0.050	<0.050	nc	100
Methyl Ethyl Ketone (2-Butanone)	ug/g dry	0.50	<0.50	<0.50	nc	100
Methyl Isobutyl Ketone	ug/g dry	0.50	<0.50	<0.50	nc	100
Methyl tert-butyl ether	ug/g dry	0.05	<0.050	<0.050	nc	100
Methylene Chloride	ug/g dry	0.05	<0.050	<0.050	nc	100
Styrene	ug/g dry	0.05	<0.050	<0.050	nc	100
1,1,1,2-Tetrachloroethane	ug/g dry	0.05	<0.050	<0.050	nc	100
1,1,2,2-Tetrachloroethane	ug/g dry	0.05	<0.050	<0.050	nc	100
Tetrachloroethylene	ug/g dry	0.05	<0.050	<0.050	nc	100
Toluene	ug/g dry	0.05	<0.020	<0.020	nc	100
1,1,1-Trichloroethane	ug/g dry	0.05	<0.050	<0.050	nc	100
1,1,2-Trichloroethane	ug/g dry	0.05	<0.050	<0.050	nc	100
Trichloroethylene	ug/g dry	0.05	<0.050	<0.050	nc	100
Trichlorofluoromethane	ug/g dry	0.05	<0.050	<0.050	nc	100
Vinyl Chloride	ug/g dry	0.02	<0.020	<0.020	nc	100
m/p-Xylene	ug/g dry	0.05	<0.020	<0.020	nc	100
o-Xylene	ug/g dry	0.05	<0.020	<0.020	nc	100
Xylenes, total	ug/g dry	0.05	<0.050	<0.050	nc	100

NOTES:

All results on dry weight basis; Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 10 - Relative Percent Differences - PAH in Soil
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	RDL	BH15-3-4	BH-15-3-104	RPD (%)	Alert Limit (%)
			11-Jan-2016	11-Jan-2016		
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	ug/g dry	0.02	<0.0050	<0.0050	nc	80
Acenaphthylene	ug/g dry	0.02	<0.0050	<0.0050	nc	80
Anthracene	ug/g dry	0.02	<0.0050	<0.0050	nc	80
Benzo[a]anthracene	ug/g dry	0.02	<0.0050	0.02	nc	80
Benzo[a]pyrene	ug/g dry	0.02	<0.0050	0.02	nc	80
Benzo[b]fluoranthene	ug/g dry	0.02	<0.010	0.035	nc	80
Benzo[g,h,i]perylene	ug/g dry	0.02	<0.0050	0.015	nc	80
Benzo[k]fluoranthene	ug/g dry	0.02	<0.0050	0.0099	nc	80
Chrysene	ug/g dry	0.02	<0.0050	0.02	nc	80
Dibenzo[a,h]anthracene	ug/g dry	0.02	<0.0050	<0.0050	nc	80
Fluoranthene	ug/g dry	0.02	0.0084	0.035	nc	80
Fluorene	ug/g dry	0.02	<0.0050	<0.0050	nc	80
Indeno[1,2,3-cd]pyrene	ug/g dry	0.02	<0.0050	0.0099	nc	80
Methylnaphthalene (1&2)	ug/g dry	0.04	<0.0071	<0.0071	nc	80
Naphthalene	ug/g dry	0.01	<0.0050	<0.0050	nc	80
Phenanthrene	ug/g dry	0.02	<0.0050	0.02	nc	80
Pyrene	ug/g dry	0.02	0.0084	0.03	nc	80

NOTES:

Analysis by Paracel Labratories Ltd.

All results on dry weight basis; Non-detectable results are shown as "ND (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 11 - Relative Percent Differences - Inorganics in Soil
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	RDL	BH15-6-2	BH-6-102	RPD (%)	Alert Limit (%)
			11-Jan-2016	11-Jan-2016		
Metals						
Antimony	ug/g dry	1.0	0.92	1	nc	60
Arsenic	ug/g dry	1.0	2.7	3.6	nc	60
Barium	ug/g dry	1.0	110	130	17	60
Beryllium	ug/g dry	0.5	0.28	0.33	nc	60
Boron	ug/g dry	5.0	<5.0	<5.0	nc	60
Cadmium	ug/g dry	0.5	0.22	0.29	nc	60
Chromium	ug/g dry	5.0	16	19	nc	60
Cobalt	ug/g dry	1.0	4.4	5.1	nc	60
Copper	ug/g dry	5.0	24	22	nc	60
Lead	ug/g dry	1.0	190	210	10	60
Mercury	ug/g dry	0.1	0.076	0.13	nc	60
Molybdenum	ug/g dry	1.0	1	1.1	nc	60
Nickel	ug/g dry	5.0	11	11	nc	60
Selenium	ug/g dry	1.0	<0.50	<0.50	nc	60
Silver	ug/g dry	0.3	<0.20	<0.20	nc	60
Thallium	ug/g dry	1.0	0.1	0.12	nc	60
Uranium	ug/g dry	1.0	0.49	100	nc	60
Vanadium	ug/g dry	10.0	17	20	nc	60
Zinc	ug/g dry	20.0	170	190	11	60

NOTES:

All results on dry weight basis; Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

\- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 12 - Relative Percent Differences - PHC and VOC in Groundwater
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	RDL	MW15-5	DUP 1	RPD (%)	Alert Limit (%)
			11-Aug-2022	11-Aug-2022		
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	ug/L	25	< 25	< 25	nc	60
F2 PHC (C10-C16)	ug/L	100	< 50	< 50	nc	60
F3 PHC (C16-C34)	ug/L	100	< 400	< 400	nc	60
F4 PHC (C34-C50)	ug/L	100	< 400	< 400	nc	60
Volatiles						
Acetone	ug/L	5.0	< 30	< 30	nc	60
Benzene	ug/L	0.5	< 0.5	< 0.5	nc	60
Bromodichloromethane	ug/L	0.5	< 2	< 2	nc	60
Bromoform	ug/L	0.5	< 5	< 5	nc	60
Bromomethane	ug/L	0.5	< 0.5	< 0.5	nc	60
Carbon Tetrachloride	ug/L	0.2	< 0.2	< 0.2	nc	60
Chlorobenzene	ug/L	0.5	< 0.5	< 0.5	nc	60
Chloroform	ug/L	0.5	< 1	< 1	nc	60
Dibromochloromethane	ug/L	0.5	< 2	< 2	nc	60
Dichlorodifluoromethane	ug/L	1.0	< 2	< 2	nc	60
1,2-Dichlorobenzene	ug/L	0.5	< 0.5	< 0.5	nc	60
1,3-Dichlorobenzene	ug/L	0.5	< 0.5	< 0.5	nc	60
1,4-Dichlorobenzene	ug/L	0.5	< 0.5	< 0.5	nc	60
1,1-Dichloroethane	ug/L	0.5	< 0.5	< 0.5	nc	60
1,2-Dichloroethane	ug/L	0.5	< 0.5	< 0.5	nc	60
1,1-Dichloroethylene	ug/L	0.5	< 0.5	< 0.5	nc	60
cis-1,2-Dichloroethylene	ug/L	0.5	< 0.5	< 0.5	nc	60
trans-1,2-Dichloroethylene	ug/L	0.5	< 0.5	< 0.5	nc	60
1,2-Dichloropropane	ug/L	0.5	< 0.5	< 0.5	nc	60
cis-1,3-Dichloropropylene	ug/L	0.5	< 0.5	< 0.5	nc	60
trans-1,3-Dichloropropylene	ug/L	0.5	< 0.5	< 0.5	nc	60
1,3-Dichloropropene, total	ug/L	0.5	< 0.5	< 0.5	nc	60
Ethylbenzene	ug/L	0.5	< 0.5	< 0.5	nc	60
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	< 0.2	< 0.2	nc	60
Hexane	ug/L	1.0	< 5	< 5	nc	60
Methyl Ethyl Ketone (2-Butanone)	ug/L	5.0	< 20	< 20	nc	60
Methyl Isobutyl Ketone	ug/L	5.0	< 20	< 20	nc	60
Methyl tert-butyl ether	ug/L	2.0	< 2	< 2	nc	60
Methylene Chloride	ug/L	5.0	< 5	< 5	nc	60
Styrene	ug/L	0.5	< 0.5	< 0.5	nc	60
1,1,1,2-Tetrachloroethane	ug/L	0.5	< 0.5	< 0.5	nc	60
1,1,2,2-Tetrachloroethane	ug/L	0.5	< 0.5	< 0.5	nc	60
Tetrachloroethylene	ug/L	0.5	< 0.5	< 0.5	nc	60
Toluene	ug/L	0.5	< 0.5	< 0.5	nc	60
1,1,1-Trichloroethane	ug/L	0.5	< 0.5	< 0.5	nc	60
1,1,2-Trichloroethane	ug/L	0.5	< 0.5	< 0.5	nc	60
Trichloroethylene	ug/L	0.5	< 0.5	< 0.5	nc	60
Trichlorofluoromethane	ug/L	1.0	< 5	< 5	nc	60
Vinyl Chloride	ug/L	0.5	< 0.2	< 0.2	nc	60
m/p-Xylene	ug/L	0.5	< 1.0	< 1.0	nc	60
o-Xylene	ug/L	0.5	< 0.5	< 0.5	nc	60
Xylenes, total	ug/L	0.5	< 1.1	< 1.1	nc	60

NOTES:

Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 12 - Relative Percent Differences - PHC and VOC in Groundwater
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	RDL	BH15-2B	BH15-102B	RPD (%)	Alert Limit (%)
			19-Jan-2016	19-Jan-2016		
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	ug/L	25	<25	<25	nc	60
F2 PHC (C10-C16)	ug/L	100	<100	<100	nc	60
F3 PHC (C16-C34)	ug/L	100	<200	<200	nc	60
F4 PHC (C34-C50)	ug/L	100	<200	<200	nc	60
Volatiles						
Acetone	ug/L	5.0	<10	<10	nc	60
Benzene	ug/L	0.5	<0.20	<0.20	nc	60
Bromodichloromethane	ug/L	0.5	<0.50	<0.50	nc	60
Bromoform	ug/L	0.5	<1.0	<1.0	nc	60
Bromomethane	ug/L	0.5	<0.50	<0.50	nc	60
Carbon Tetrachloride	ug/L	0.2	<0.20	<0.20	nc	60
Chlorobenzene	ug/L	0.5	<0.20	<0.20	nc	60
Chloroform	ug/L	0.5	1.2	1.3	nc	60
Dibromochloromethane	ug/L	0.5	<0.50	<0.50	nc	60
Dichlorodifluoromethane	ug/L	1.0	<1.0	<1.0	nc	60
1,2-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,3-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,4-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,1-Dichloroethane	ug/L	0.5	<0.20	<0.20	nc	60
1,2-Dichloroethane	ug/L	0.5	<0.50	<0.50	nc	60
1,1-Dichloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
cis-1,2-Dichloroethylene	ug/L	0.5	<0.50	<0.50	nc	60
trans-1,2-Dichloroethylene	ug/L	0.5	<0.50	<0.50	nc	60
1,2-Dichloropropane	ug/L	0.5	<0.20	<0.20	nc	60
cis-1,3-Dichloropropylene	ug/L	0.5	<0.30	<0.30	nc	60
trans-1,3-Dichloropropylene	ug/L	0.5	<0.40	<0.40	nc	60
1,3-Dichloropropene, total	ug/L	0.5	<0.50	<0.50	nc	60
Ethylbenzene	ug/L	0.5	<0.20	<0.20	nc	60
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	<0.20	<0.20	nc	60
Hexane	ug/L	1.0	<1.0	<1.0	nc	60
Methyl Ethyl Ketone (2-Butanone)	ug/L	5.0	<10	<10	nc	60
Methyl Isobutyl Ketone	ug/L	5.0	<5.0	<5.0	nc	60
Methyl tert-butyl ether	ug/L	2.0	<0.50	<0.50	nc	60
Methylene Chloride	ug/L	5.0	<2.0	<2.0	nc	60
Styrene	ug/L	0.5	<0.50	<0.50	nc	60
1,1,1,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	nc	60
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	nc	60
Tetrachloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
Toluene	ug/L	0.5	0.22	0.22	nc	60
1,1,1-Trichloroethane	ug/L	0.5	<0.20	<0.20	nc	60
1,1,2-Trichloroethane	ug/L	0.5	<0.50	<0.50	nc	60
Trichloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
Trichlorofluoromethane	ug/L	1.0	<0.50	<0.50	nc	60
Vinyl Chloride	ug/L	0.5	<0.20	<0.20	nc	60
m/p-Xylene	ug/L	0.5	<0.20	<0.20	nc	60
o-Xylene	ug/L	0.5	<0.20	<0.20	nc	60
Xylenes, total	ug/L	0.5	<0.20	<0.20	nc	60

NOTES:
Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
- means "not analysed"
nc means "not calculable" - one (or both) of the results are <5x RDL
Exceedances of alert limits are shown in **bold**

Table 12 - Relative Percent Differences - PHC and VOC in Groundwater
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	RDL	BH15-3B	BH15-103B	RPD (%)	Alert Limit (%)
			15-Feb-2016	15-Feb-2016		
Volatiles						
Acetone	ug/L	5.0	<10	<10	nc	60
Benzene	ug/L	0.5	<0.20	<0.20	nc	60
Bromodichloromethane	ug/L	0.5	<0.50	<0.50	nc	60
Bromoform	ug/L	0.5	<1.0	<1.0	nc	60
Bromomethane	ug/L	0.5	<0.50	<0.50	nc	60
Carbon Tetrachloride	ug/L	0.2	<0.20	<0.20	nc	60
Chlorobenzene	ug/L	0.5	<0.20	<0.20	nc	60
Chloroform	ug/L	0.5	<0.20	<0.20	nc	60
Dibromochloromethane	ug/L	0.5	<0.50	<0.50	nc	60
Dichlorodifluoromethane	ug/L	1.0	<1.0	<1.0	nc	60
1,2-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,3-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,4-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,1-Dichloroethane	ug/L	0.5	<0.20	<0.20	nc	60
1,2-Dichloroethane	ug/L	0.5	<0.50	<0.50	nc	60
1,1-Dichloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
cis-1,2-Dichloroethylene	ug/L	0.5	<0.50	<0.50	nc	60
trans-1,2-Dichloroethylene	ug/L	0.5	<0.50	<0.50	nc	60
1,2-Dichloropropane	ug/L	0.5	<0.20	<0.20	nc	60
cis-1,3-Dichloropropylene	ug/L	0.5	<0.30	<0.30	nc	60
trans-1,3-Dichloropropylene	ug/L	0.5	<0.40	<0.40	nc	60
1,3-Dichloropropene, total	ug/L	0.5	<0.50	<0.50	nc	60
Ethylbenzene	ug/L	0.5	<0.20	<0.20	nc	60
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	<0.20	<0.20	nc	60
Hexane	ug/L	1.0	<1.0	<1.0	nc	60
Methyl Ethyl Ketone (2-Butanone)	ug/L	5.0	<10	<10	nc	60
Methyl Isobutyl Ketone	ug/L	5.0	<5.0	<5.0	nc	60
Methyl tert-butyl ether	ug/L	2.0	<0.50	<0.50	nc	60
Methylene Chloride	ug/L	5.0	<2.0	<2.0	nc	60
Styrene	ug/L	0.5	<0.50	<0.50	nc	60
1,1,1,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	nc	60
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	nc	60
Tetrachloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
Toluene	ug/L	0.5	<0.20	<0.20	nc	60
1,1,1-Trichloroethane	ug/L	0.5	<0.20	<0.20	nc	60
1,1,2-Trichloroethane	ug/L	0.5	<0.50	<0.50	nc	60
Trichloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
Trichlorofluoromethane	ug/L	1.0	<0.50	<0.50	nc	60
Vinyl Chloride	ug/L	0.5	<0.20	<0.20	nc	60
m/p-Xylene	ug/L	0.5	<0.20	<0.20	nc	60
o-Xylene	ug/L	0.5	<0.20	<0.20	nc	60
Xylenes, total	ug/L	0.5	<0.20	<0.20	nc	60

NOTES:

Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

\- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

Table 12 - Relative Percent Differences - PHC and VOC in Groundwater
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	RDL	BH15-4A	BH15-104A	RPD (%)	Alert Limit (%)
			23-Feb-2016	23-Feb-2016		
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	ug/L	25	<25	<25	nc	60
F2 PHC (C10-C16)	ug/L	100	<100	<100	nc	60
F3 PHC (C16-C34)	ug/L	100	<200	<200	nc	60
F4 PHC (C34-C50)	ug/L	100	<200	<200	nc	60
Volatiles						
Acetone	ug/L	5.0	<10	<10	nc	60
Benzene	ug/L	0.5	<0.20	<0.20	nc	60
Bromodichloromethane	ug/L	0.5	<0.50	<0.50	nc	60
Bromoform	ug/L	0.5	<1.0	<1.0	nc	60
Bromomethane	ug/L	0.5	<0.50	<0.50	nc	60
Carbon Tetrachloride	ug/L	0.2	<0.20	<0.20	nc	60
Chlorobenzene	ug/L	0.5	<0.20	<0.20	nc	60
Chloroform	ug/L	0.5	1.2	1.3	nc	60
Dibromochloromethane	ug/L	0.5	<0.50	<0.50	nc	60
Dichlorodifluoromethane	ug/L	1.0	<1.0	<1.0	nc	60
1,2-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,3-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,4-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,1-Dichloroethane	ug/L	0.5	<0.20	<0.20	nc	60
1,2-Dichloroethane	ug/L	0.5	<0.50	<0.50	nc	60
1,1-Dichloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
cis-1,2-Dichloroethylene	ug/L	0.5	<0.50	<0.50	nc	60
trans-1,2-Dichloroethylene	ug/L	0.5	<0.50	<0.50	nc	60
1,2-Dichloropropane	ug/L	0.5	<0.20	<0.20	nc	60
cis-1,3-Dichloropropylene	ug/L	0.5	<0.30	<0.30	nc	60
trans-1,3-Dichloropropylene	ug/L	0.5	<0.40	<0.40	nc	60
1,3-Dichloropropene, total	ug/L	0.5	<0.50	<0.50	nc	60
Ethylbenzene	ug/L	0.5	<0.20	<0.20	nc	60
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	<0.20	<0.20	nc	60
Hexane	ug/L	1.0	<1.0	<1.0	nc	60
Methyl Ethyl Ketone (2-Butanone)	ug/L	5.0	<10	<10	nc	60
Methyl Isobutyl Ketone	ug/L	5.0	<5.0	<5.0	nc	60
Methyl tert-butyl ether	ug/L	2.0	<0.50	<0.50	nc	60
Methylene Chloride	ug/L	5.0	<2.0	<2.0	nc	60
Styrene	ug/L	0.5	<0.50	<0.50	nc	60
1,1,1,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	nc	60
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	nc	60
Tetrachloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
Toluene	ug/L	0.5	0.22	0.22	nc	60
1,1,1-Trichloroethane	ug/L	0.5	<0.20	<0.20	nc	60
1,1,2-Trichloroethane	ug/L	0.5	<0.50	<0.50	nc	60
Trichloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
Trichlorofluoromethane	ug/L	1.0	<0.50	<0.50	nc	60
Vinyl Chloride	ug/L	0.5	<0.20	<0.20	nc	60
m/p-Xylene	ug/L	0.5	<0.20	<0.20	nc	60
o-Xylene	ug/L	0.5	<0.20	<0.20	nc	60
Xylenes, total	ug/L	0.5	<0.20	<0.20	nc	60

NOTES:
Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
- means "not analysed"
nc means "not calculable" - one (or both) of the results are <5x RDL
Exceedances of alert limits are shown in **bold**

Table 13 - Relative Percent Differences - PAH in Groundwater
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	RDL	MW15-5	DUP 1	RPD (%)	Alert Limit (%)
			11-Aug-2022	11-Aug-2022		
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	ug/L	0.05	< 0.05	< 0.05	nc	60
Acenaphthylene	ug/L	0.05	< 0.05	< 0.05	nc	60
Anthracene	ug/L	0.01	< 0.05	< 0.05	nc	60
Benzo[a]anthracene	ug/L	0.01	< 0.05	< 0.05	nc	60
Benzo[a]pyrene	ug/L	0.01	< 0.01	< 0.01	nc	60
Benzo[b]fluoranthene	ug/L	0.05	< 0.05	< 0.05	nc	60
Benzo[g,h,i]perylene	ug/L	0.05	< 0.05	< 0.05	nc	60
Benzo[k]fluoranthene	ug/L	0.05	< 0.05	< 0.05	nc	60
Chrysene	ug/L	0.05	< 0.05	< 0.05	nc	60
Dibenzo[a,h]anthracene	ug/L	0.05	< 0.05	< 0.05	nc	60
Fluoranthene	ug/L	0.01	< 0.05	< 0.05	nc	60
Fluorene	ug/L	0.05	< 0.05	< 0.05	nc	60
Indeno[1,2,3-cd]pyrene	ug/L	0.05	< 0.05	< 0.05	nc	60
1-Methylnaphthalene	ug/L	0.05	< 0.05	< 0.05	nc	60
2-Methylnaphthalene	ug/L	0.05	< 0.05	< 0.05	nc	60
Methylnaphthalene (1&2)	ug/L	0.10	< 1	< 1	nc	60
Naphthalene	ug/L	0.05	< 0.05	< 0.05	nc	60
Phenanthrene	ug/L	0.05	< 0.05	< 0.05	nc	60
Pyrene	ug/L	0.01	< 0.05	< 0.05	mc	60
Parameter	**Units**	**RDL**	**BH15-2B**	**BH15-102B**	**RPD (%)**	**Alert Limit (%)**
			19-Jan-2016	19-Jan-2016		
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	ug/L	0.05	<0.050	<0.050	nc	60
Acenaphthylene	ug/L	0.05	<0.050	<0.050	nc	60
Anthracene	ug/L	0.01	<0.050	<0.050	nc	60
Benzo[a]anthracene	ug/L	0.01	<0.050	<0.050	nc	60
Benzo[a]pyrene	ug/L	0.01	<0.010	<0.010	nc	60
Benzo[b]fluoranthene	ug/L	0.05	<0.10	<0.10	nc	60
Benzo[g,h,i]perylene	ug/L	0.05	<0.050	<0.050	nc	60
Benzo[k]fluoranthene	ug/L	0.05	<0.050	<0.050	nc	60
Chrysene	ug/L	0.05	<0.050	<0.050	nc	60
Dibenzo[a,h]anthracene	ug/L	0.05	<0.050	<0.050	nc	60
Fluoranthene	ug/L	0.01	<0.050	<0.050	nc	60
Fluorene	ug/L	0.05	<0.050	<0.050	nc	60
Indeno[1,2,3-cd]pyrene	ug/L	0.05	<0.050	<0.050	nc	60
1-Methylnaphthalene	ug/L	0.05	<0.050	0.05	nc	60
2-Methylnaphthalene	ug/L	0.05	<0.050	0.05	nc	60
Methylnaphthalene (1&2)	ug/L	0.10	<0.1	<0.1	nc	60
Naphthalene	ug/L	0.05	<0.050	<0.050	nc	60
Phenanthrene	ug/L	0.05	<0.030	0.17	nc	60
Pyrene	ug/L	0.01	<0.050	<0.050	mc	60

NOTES:

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Exceedances of alert limits are shown in **bold**

Table 14 - Relative Percent Differences - Metals in Groundwater
770 and 775 Bronson Avenue, 557 Cambridge Street, Ottawa, ON
OTT-22019409-A0

Parameter	Units	RDL	BH15-2B	BH15-102B	RPD (%)	Alert Limit (%)
			19-Jan-2016	19-Jan-2016		
Metals						
Mercury	ug/L	0.1	<0.1	<0.1	nc	40
Antimony	ug/L	0.5	<0.50	0.62	nc	40
Arsenic	ug/L	1	<1.0	<1.0	nc	40
Barium	ug/L	1	190	77	**85**	40
Beryllium	ug/L	0.5	<0.50	<0.50	nc	40
Boron	ug/L	10	61	300	**132**	40
Cadmium	ug/L	0.1	<0.10	<0.10	nc	40
Chromium	ug/L	1	<5.0	<5.0	nc	40
Chromium (VI)	ug/L	10	<0.5	<0.5	nc	40
Cobalt	ug/L	0.5	1.1	1.2	nc	40
Copper	ug/L	0.5	1.7	1.7	nc	40
Lead	ug/L	0.1	<0.50	<0.50	nc	40
Molybdenum	ug/L	0.5	2	4.7	nc	40
Nickel	ug/L	1	2.5	3.4	nc	40
Selenium	ug/L	1	460000	520000	12	40
Silver	ug/L	0.1	<2.0	2.9	nc	40
Sodium	ug/L	200	<0.10	<0.10	nc	40
Thallium	ug/L	0.1	<0.050	0.074	nc	40
Uranium	ug/L	0.1	1.8	3.1	**53**	40
Vanadium	ug/L	0.5	<0.50	<0.50	nc	40
Zinc	ug/L	5	<5.0	<5.0	nc	40

NOTES:

Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
- means "not analysed"
nc means "not calculable" - one (or both) of the results are <5x RDL
Exceedances of alert limits are shown in **bold**

Appendix F: Laboratory Certificates of Analysis

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G105027 **REPORT No. B22-25709**

Report To:

EXP Services Inc
2650 Queensview Drive, Suite 100
Ottawa ON K2B 8H6 Canada
Attention: Mark McCalla

Caduceon Environmental Laboratories
2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 12-Aug-22
DATE REPORTED: 18-Aug-22
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: OTT-22019409-AO
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Comment	5	Default Site	KPR	15-Aug-22	C-comment	-
Comment	5	Default Site	JE	17-Aug-22	C-comment purg RH	-
SVOC	5	Kingston	law	16-Aug-22	C-NAB-S-001 (k)	EPA 8270
SVOC	5	Kingston	law	16-Aug-22	C-NAB-W-001 (k)	EPA 8270
PHC(F2-F4)	5	Kingston	KPR	15-Aug-22	C-PHC-W-001 (k)	MOE E3421
VOC's	5	Richmond Hill	JE	16-Aug-22	C-VOC-02 (rh)	EPA 8260
PHC(F1)	5	Richmond Hill	JE	17-Aug-22	C-VPHW-01 (rh)	MOE E3421

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 1 - GW (µg/L) - Table 1 - Ground Water

Tahir Yapici Ph.D
Lab Manager - Ottawa District

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 12-Aug-22
DATE REPORTED: 18-Aug-22
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: OTT-22019409-AO
WATERWORKS NO.

	Client I.D.		MW15-1	MW15-5	MW15-2	MW15-3	O. Reg. 153	
	Sample I.D.		B22-25709-1	B22-25709-2	B22-25709-3	B22-25709-4	Tbl. 1 - GW	
	Date Collected		11-Aug-22	11-Aug-22	11-Aug-22	11-Aug-22	(µg/L)	
Parameter	**Units**	**R.L.**						
PHC F1 (C6-C10)	µg/L	25	< 25	< 25	< 25	< 25	420	
Comment-purgeable	-		-	-	-	-		
PHC F2 (>C10-C16)	µg/L	50	< 50	< 50	< 50	< 50	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	
Comment-extractable	-		-	-	-	-		
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	2	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	5	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	2	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 1 - GW (µg/L) - Table 1 - Ground Water

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Tahir Yapici Ph.D
Lab Manager - Ottawa District

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G105027 **REPORT No. B22-25709**

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Attention: Mark McCalla

Caduceon Environmental Laboratories
2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 12-Aug-22
DATE REPORTED: 18-Aug-22
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: OTT-22019409-AO
WATERWORKS NO.

	Client I.D.		MW15-1	MW15-5	MW15-2	MW15-3	O. Reg. 153	
	Sample I.D.		B22-25709-1	B22-25709-2	B22-25709-3	B22-25709-4	Tbl. 1 - GW (µg/L)	
	Date Collected		11-Aug-22	11-Aug-22	11-Aug-22	11-Aug-22		
Parameter	**Units**	**R.L.**						
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	< 5	< 5	< 5	< 5	5	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	400	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	3	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	5	
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Toluene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Xylene, o-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Xylene, m,p,o-	µg/L	1.1	< 1.1	< 1.1	< 1.1	< 1.1	72	
Acenaphthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 1 - GW (µg/L) - Table 1 - Ground Water

R.L. = Reporting Limit
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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Tahir Yapici Ph.D
Lab Manager - Ottawa District

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DATE RECEIVED: 12-Aug-22
DATE REPORTED: 18-Aug-22
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: OTT-22019409-AO
WATERWORKS NO.

	Client I.D.		MW15-1	MW15-5	MW15-2	MW15-3	O. Reg. 153	
	Sample I.D.		B22-25709-1	B22-25709-2	B22-25709-3	B22-25709-4	Tbl. 1 - GW (µg/L)	
	Date Collected		11-Aug-22	11-Aug-22	11-Aug-22	11-Aug-22		
Parameter	**Units**	**R.L.**						
Acenaphthylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Benzo(a)pyrene	µg/L	0.01	**0.012**	< 0.01	< 0.01	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Chrysene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.4	
Fluorene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2	
Methylnaphthalene,2-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1	< 1	< 1	< 1	2	
Naphthalene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	7	
Phenanthrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
2-Fluorobiphenyl (SS)	% rec.	10	86.0	95.0	92.0	86.0		
Terphenyl-d14 (SS)	% rec.	10	99.0	108	105	104		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 1 - GW (µg/L) - Table 1 - Ground Water

Tahir Yapici Ph.D
Lab Manager - Ottawa District

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G105027 **REPORT No. B22-25709**

Report To:

EXP Services Inc
2650 Queensview Drive, Suite 100
Ottawa ON K2B 8H6 Canada
Attention: Mark McCalla

Caduceon Environmental Laboratories
2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 12-Aug-22
DATE REPORTED: 18-Aug-22
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: OTT-22019409-AO
WATERWORKS NO.

	Client I.D. / Sample I.D. / Date Collected		Dup 1 B22-25709-5 11-Aug-22				O. Reg. 153 Tbl. 1 - GW (µg/L)	
Parameter	**Units**	**R.L.**						
PHC F1 (C6-C10)	µg/L	25	< 25				420	
Comment-purgeable	-		-					
PHC F2 (>C10-C16)	µg/L	50	< 50				150	
PHC F3 (>C16-C34)	µg/L	400	< 400				500	
PHC F4 (>C34-C50)	µg/L	400	< 400				500	
Comment-extractable	-		-					
Acetone	µg/L	30	< 30				2700	
Benzene	µg/L	0.5	< 0.5				0.5	
Bromodichloromethane	µg/L	2	< 2				2	
Bromoform	µg/L	5	< 5				5	
Bromomethane	µg/L	0.5	< 0.5				0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2				0.2	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5				0.5	
Chloroform	µg/L	1	< 1				2	
Dibromochloromethane	µg/L	2	< 2				2	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5				0.5	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5				0.5	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5				0.5	
Dichlorodifluoromethane	µg/L	2	< 2				590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5				0.5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5				0.5	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5				0.5	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5				1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5				1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5				0.5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5					

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 1 - GW (µg/L) - Table 1 - Ground Water

Tahir Yapici Ph.D
Lab Manager - Ottawa District

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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DATE RECEIVED: 12-Aug-22
DATE REPORTED: 18-Aug-22
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: OTT-22019409-AO
WATERWORKS NO.

	Client I.D.		Dup 1				O. Reg. 153	
	Sample I.D.		B22-25709-5				Tbl. 1 - GW (µg/L)	
	Date Collected		11-Aug-22					
Parameter	**Units**	**R.L.**						
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5					
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5				0.5	
Ethylbenzene	µg/L	0.5	< 0.5				0.5	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2				0.2	
Hexane	µg/L	5	< 5				5	
Methyl Ethyl Ketone	µg/L	20	< 20				400	
Methyl Isobutyl Ketone	µg/L	20	< 20				640	
Methyl-t-butyl Ether	µg/L	2	< 2				15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5				5	
Styrene	µg/L	0.5	< 0.5				0.5	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5				1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5				0.5	
Tetrachloroethylene	µg/L	0.5	< 0.5				0.5	
Toluene	µg/L	0.5	< 0.5				0.8	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5				0.5	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5				0.5	
Trichloroethylene	µg/L	0.5	< 0.5				0.5	
Trichlorofluoromethane	µg/L	5	< 5				150	
Vinyl Chloride	µg/L	0.2	< 0.2				0.5	
Xylene, m,p-	µg/L	1.0	< 1.0					
Xylene, o-	µg/L	0.5	< 0.5					
Xylene, m,p,o-	µg/L	1.1	< 1.1				72	
Acenaphthene	µg/L	0.05	< 0.05				4.1	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 1 - GW (µg/L) - Table 1 - Ground Water

Tahir Yapici Ph.D
Lab Manager - Ottawa District

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: OTT-22019409-AO
WATERWORKS NO.

	Client I.D. / Sample I.D. / Date Collected		Dup 1 B22-25709-5 11-Aug-22				O. Reg. 153 Tbl. 1 - GW (µg/L)	
Parameter	**Units**	**R.L.**						
Acenaphthylene	µg/L	0.05	< 0.05				1	
Anthracene	µg/L	0.05	< 0.05				0.1	
Benzo(a)anthracene	µg/L	0.05	< 0.05				0.2	
Benzo(a)pyrene	µg/L	0.01	< 0.01				0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05				0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1					
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05				0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05				0.1	
Chrysene	µg/L	0.05	< 0.05				0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05				0.2	
Fluoranthene	µg/L	0.05	< 0.05				0.4	
Fluorene	µg/L	0.05	< 0.05				120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05				0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05				2	
Methylnaphthalene,2-	µg/L	0.05	< 0.05				2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1				2	
Naphthalene	µg/L	0.05	< 0.05				7	
Phenanthrene	µg/L	0.05	< 0.05				0.1	
Pyrene	µg/L	0.05	< 0.05				0.2	
2-Fluorobiphenyl (SS)	% rec.	10	100					
Terphenyl-d14 (SS)	% rec.	10	110					

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 1 - GW (µg/L) - Table 1 - Ground Water

Tahir Yapici Ph.D
Lab Manager - Ottawa District

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G105027 **REPORT No. B22-25709**

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DATE RECEIVED: 12-Aug-22
DATE REPORTED: 18-Aug-22
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: OTT-22019409-AO
WATERWORKS NO.

Summary of Exceedances

Table 1 - Ground Water

MW15-1	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.012	0.01

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 1 - GW (µg/L) - Table 1 - Ground Water

R.L. = Reporting Limit
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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Tahir Yapici Ph.D
Lab Manager - Ottawa District

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: GOLDER ASSOCIATES LTD
1931 ROBERTSON ROAD
OTTAWA, ON K2H5B7
(613) 592-9600

ATTENTION TO: Keith Holmes

PROJECT: 1525987

AGAT WORK ORDER: 15T957961

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Apr 01, 2015

PAGES (INCLUDING COVER): 16

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		BH15-2 SA3	BH15-2 SA33	BH15-4 SA3	BH15-2 SA1	BH15-1 SA1	BH15-1 SA4	BH15-3 SA1	BH15-3 SA3
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015
Parameter	Unit	G / S	RDL	6410019	6410020	6410021	6410024	6410027	6410030	6410034	6410037
Naphthalene	µg/g	0.6	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.99	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	5.4	5.1	6.4	6.4	8.7	5.6	9.8	9.2
Surrogate	Unit	Acceptable Limits									
Chrysene-d12	%	50-140		76	74	77	134	117	118	133	133

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3 Site Condition Standards - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils

6410019-6410037 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O.Reg.153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		BH15-2 SA4	BH15-4 SA1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		3/24/2015	3/24/2015
Parameter	Unit	G / S	RDL	6410018	6410040
F1 (C6 to C10)	µg/g		5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	740
F4 (C34 to C50)	µg/g	2800	50	<50	1100
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA
Moisture Content	%		0.1	7.3	2.9
Surrogate	Unit	Acceptable Limits			
Terphenyl	%	60-140		87	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3 Site Condition Standards - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils

6410018-6410040 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:

AGAT Laboratories

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AGAT WORK ORDER: 15T957961

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O.Reg.153(511) - PHCs F1 - F4 (with PAHs) (Soil)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		BH15-4 SA3	BH15-2 SA1	BH15-1 SA1	BH15-1 SA4	BH15-3 SA1	BH15-3 SA3
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015
Parameter	Unit	G / S	RDL	6410021	6410024	6410027	6410030	6410034	6410037
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	98	10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50	140	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	300	50	<50	<50	140	<50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50	55	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	6.4	6.4	8.7	5.6	9.8	9.2
Surrogate	Unit	Acceptable Limits							
Terphenyl	%	60-140		97	81	110	109	94	101

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3 Site Condition Standards - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils

6410021-6410037 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O.Reg.153(511) - VOCs (Soil)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		BH15-2 SA4	BH15-4 SA3	BH15-2 SA1	BH15-1 SA1	BH15-1 SA4	BH15-3 SA1	BH15-3 SA3	BH15-4 SA1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015
Parameter	Unit	G / S	RDL	6410018	6410021	6410024	6410027	6410030	6410034	6410037	6410040
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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Certificate of Analysis

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O.Reg.153(511) - VOCs (Soil)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		BH15-2 SA4	BH15-4 SA3	BH15-2 SA1	BH15-1 SA1	BH15-1 SA4	BH15-3 SA1	BH15-3 SA3	BH15-4 SA1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015	3/24/2015
Parameter	Unit	G / S	RDL	6410018	6410021	6410024	6410027	6410030	6410034	6410037	6410040
Bromoform	ug/g	0.27	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits									
Toluene-d8	% Recovery	50-140		90	91	91	63	94	98	65	92
4-Bromofluorobenzene	% Recovery	50-140		95	94	94	90	93	93	91	90

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3 Site Condition Standards - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils

6410018-6410040 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Certified By:

AGAT Laboratories

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AGAT WORK ORDER: 15T957961

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		BH15-2 SA44
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		3/24/2015
Parameter	Unit	G / S	RDL	6410006
F1 (C6 to C10)	µg/g		5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5
F2 (C10 to C16)	µg/g	98	10	<10
F3 (C16 to C34)	µg/g	300	50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	6.4
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		83

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3 Site Condition Standards - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils

6410006 The soil sample was prepared in the lab using the Methanol extraction technique. The sample was not field preserved with methanol.
Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
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Certificate of Analysis

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

VOCs (Soil)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		BH15-2 SA44
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		3/24/2015
Parameter	Unit	G / S	RDL	6410006
Dichlorodifluoromethane	µg/g	16	0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05
Acetone	ug/g	16	0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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Certificate of Analysis

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

VOCs (Soil)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		BH15-2 SA44
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		3/24/2015
Parameter	Unit	G / S	RDL	6410006
Bromoform	ug/g	0.27	0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05
o-Xylene	ug/g		0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		114
4-Bromofluorobenzene	% Recovery	50-140		92

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3 Site Condition Standards - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils

6410006 The soil sample was prepared in the lab using the Methanol extraction technique. The sample was not field preserved with methanol.
The sample was analysed using the high level technique. The sample was
extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed.
Results are based on the dry weight of the soil.

Certified By:

AGAT Laboratories

Guideline Violation

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6410040	BH15-4 SA1	T3(RPI) - Current	O.Reg.153(511) - PHCs F1 - F4 (-BTEX) (Soil)	F3 (C16 to C34)	300	740

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 15T957961
PROJECT: 1525987
ATTENTION TO: Keith Holmes
SAMPLING SITE:
SAMPLED BY:T L

Trace Organics Analysis

RPT Date: Apr 01, 2015			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	6412426		< 0.05	< 0.05	0.0%	< 0.05	110%	50%	140%	86%	50%	140%	82%	50%	140%
Acenaphthylene	6412426		< 0.05	< 0.05	0.0%	< 0.05	104%	50%	140%	86%	50%	140%	92%	50%	140%
Acenaphthene	6412426		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	89%	50%	140%	85%	50%	140%
Fluorene	6412426		< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	86%	50%	140%	96%	50%	140%
Phenanthrene	6412426		< 0.05	< 0.05	0.0%	< 0.05	94%	50%	140%	86%	50%	140%	101%	50%	140%
Anthracene	6412426		< 0.05	< 0.05	0.0%	< 0.05	96%	50%	140%	82%	50%	140%	99%	50%	140%
Fluoranthene	6412426		< 0.05	< 0.05	0.0%	< 0.05	92%	50%	140%	81%	50%	140%	110%	50%	140%
Pyrene	6412426		< 0.05	< 0.05	0.0%	< 0.05	90%	50%	140%	81%	50%	140%	106%	50%	140%
Benz(a)anthracene	6412426		< 0.05	< 0.05	0.0%	< 0.05	61%	50%	140%	57%	50%	140%	105%	50%	140%
Chrysene	6412426		< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	89%	50%	140%	102%	50%	140%
Benzo(b)fluoranthene	6412426		< 0.05	< 0.05	0.0%	< 0.05	80%	50%	140%	68%	50%	140%	85%	50%	140%
Benzo(k)fluoranthene	6412426		< 0.05	< 0.05	0.0%	< 0.05	120%	50%	140%	107%	50%	140%	101%	50%	140%
Benzo(a)pyrene	6412426		< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	81%	50%	140%	102%	50%	140%
Indeno(1,2,3-cd)pyrene	6412426		< 0.05	< 0.05	0.0%	< 0.05	88%	50%	140%	71%	50%	140%	110%	50%	140%
Dibenz(a,h)anthracene	6412426		< 0.05	< 0.05	0.0%	< 0.05	86%	50%	140%	75%	50%	140%	103%	50%	140%
Benzo(g,h,i)perylene	6412426		< 0.05	< 0.05	0.0%	< 0.05	110%	50%	140%	87%	50%	140%	111%	50%	140%
2-and 1-methyl Naphthalene	6412426		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	88%	50%	140%	89%	50%	140%
VOCs (Soil)															
Dichlorodifluoromethane	6405189		< 0.05	< 0.05	0.0%	< 0.05	125%	50%	140%	125%	50%	140%	125%	50%	140%
Vinyl Chloride	6405189		< 0.02	< 0.02	0.0%	< 0.02	130%	50%	140%	107%	50%	140%	84%	50%	140%
Bromomethane	6405189		< 0.05	< 0.05	0.0%	< 0.05	75%	50%	140%	108%	50%	140%	109%	50%	140%
Trichlorofluoromethane	6405189		< 0.05	< 0.05	0.0%	< 0.05	79%	50%	140%	99%	50%	140%	93%	50%	140%
Acetone	6405189		< 0.50	< 0.50	0.0%	< 0.50	106%	50%	140%	104%	50%	140%	106%	50%	140%
1,1-Dichloroethylene	6405189		< 0.05	< 0.05	0.0%	< 0.05	78%	50%	140%	130%	60%	130%	119%	50%	140%
Methylene Chloride	6405189		< 0.05	< 0.05	0.0%	< 0.05	78%	50%	140%	120%	60%	130%	108%	50%	140%
Trans- 1,2-Dichloroethylene	6405189		< 0.05	< 0.05	0.0%	< 0.05	70%	50%	140%	82%	60%	130%	123%	50%	140%
Methyl tert-butyl Ether	6405189		< 0.05	< 0.05	0.0%	< 0.05	70%	50%	140%	95%	60%	130%	121%	50%	140%
1,1-Dichloroethane	6405189		< 0.02	< 0.02	0.0%	< 0.02	91%	50%	140%	111%	60%	130%	126%	50%	140%
Methyl Ethyl Ketone	6405189		< 0.50	< 0.50	0.0%	< 0.50	113%	50%	140%	112%	50%	140%	120%	50%	140%
Cis- 1,2-Dichloroethylene	6405189		< 0.02	< 0.02	0.0%	< 0.02	92%	50%	140%	112%	60%	130%	123%	50%	140%
Chloroform	6405189		< 0.04	< 0.04	0.0%	< 0.04	89%	50%	140%	100%	60%	130%	110%	50%	140%
1,2-Dichloroethane	6405189		< 0.03	< 0.03	0.0%	< 0.03	91%	50%	140%	101%	60%	130%	110%	50%	140%
1,1,1-Trichloroethane	6405189		< 0.05	< 0.05	0.0%	< 0.05	79%	50%	140%	82%	60%	130%	94%	50%	140%
Carbon Tetrachloride	6405189		< 0.05	< 0.05	0.0%	< 0.05	76%	50%	140%	80%	60%	130%	91%	50%	140%
Benzene	6405189		< 0.02	< 0.02	0.0%	< 0.02	89%	50%	140%	92%	60%	130%	104%	50%	140%
1,2-Dichloropropane	6405189		< 0.03	< 0.03	0.0%	< 0.03	79%	50%	140%	93%	60%	130%	103%	50%	140%
Trichloroethylene	6405189		< 0.03	< 0.03	0.0%	< 0.03	72%	50%	140%	87%	60%	130%	98%	50%	140%
Bromodichloromethane	6405189		< 0.05	< 0.05	0.0%	< 0.05	73%	50%	140%	86%	60%	130%	94%	50%	140%

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MISSISSAUGA, ONTARIO
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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 15T957961
PROJECT: 1525987
ATTENTION TO: Keith Holmes
SAMPLING SITE:
SAMPLED BY:T L

Trace Organics Analysis (Continued)

RPT Date: Apr 01, 2015			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Methyl Isobutyl Ketone	6405189		< 0.50	< 0.50	0.0%	< 0.50	92%	50%	140%	112%	50%	140%	114%	50%	140%
1,1,2-Trichloroethane	6405189		< 0.04	< 0.04	0.0%	< 0.04	95%	50%	140%	98%	60%	130%	108%	50%	140%
Toluene	6405189		< 0.05	< 0.05	0.0%	< 0.05	87%	50%	140%	89%	60%	130%	103%	50%	140%
Dibromochloromethane	6405189		< 0.05	< 0.05	0.0%	< 0.05	81%	50%	140%	92%	60%	130%	96%	50%	140%
Ethylene Dibromide	6405189		< 0.04	< 0.04	0.0%	< 0.04	89%	50%	140%	95%	60%	130%	106%	50%	140%
Tetrachloroethylene	6405189		< 0.05	< 0.05	0.0%	< 0.05	109%	50%	140%	87%	60%	130%	87%	50%	140%
1,1,1,2-Tetrachloroethane	6405189		< 0.04	< 0.04	0.0%	< 0.04	94%	50%	140%	87%	60%	130%	101%	50%	140%
Chlorobenzene	6405189		< 0.05	< 0.05	0.0%	< 0.05	89%	50%	140%	90%	60%	130%	104%	50%	140%
Ethylbenzene	6405189		< 0.05	< 0.05	0.0%	< 0.05	81%	50%	140%	82%	60%	130%	98%	50%	140%
m & p-Xylene	6405189		< 0.05	< 0.05	0.0%	< 0.05	83%	50%	140%	80%	60%	130%	98%	50%	140%
Bromoform	6405189		< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	102%	60%	130%	116%	50%	140%
Styrene	6405189		< 0.05	< 0.05	0.0%	< 0.05	72%	50%	140%	86%	60%	130%	104%	50%	140%
1,1,2,2-Tetrachloroethane	6405189		< 0.05	< 0.05	0.0%	< 0.05	112%	50%	140%	105%	60%	130%	122%	50%	140%
o-Xylene	6405189		< 0.05	< 0.05	0.0%	< 0.05	88%	50%	140%	86%	60%	130%	105%	50%	140%
1,3-Dichlorobenzene	6405189		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	96%	60%	130%	99%	50%	140%
1,4-Dichlorobenzene	6405189		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	100%	60%	130%	128%	50%	140%
1,2-Dichlorobenzene	6405189		< 0.05	< 0.05	0.0%	< 0.05	92%	50%	140%	88%	60%	130%	111%	50%	140%
1,3-Dichloropropene	6405189		< 0.04	< 0.04	0.0%	< 0.04	76%	50%	140%	78%	60%	130%	86%	50%	140%
n-Hexane	6405189		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	95%	60%	130%	100%	50%	140%
PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	6398878		53	67	23.3%	< 5	79%	60%	140%	95%	80%	120%	104%	60%	140%
F2 (C10 to C16)	6410040	6410040	< 10	< 10	0.0%	< 10	112%	60%	140%	98%	80%	120%	61%	60%	140%
F3 (C16 to C34)	6410040	6410040	740	760	2.7%	< 50	114%	60%	140%	96%	80%	120%	64%	60%	140%
F4 (C34 to C50)	6410040	6410040	1100	1200	8.7%	< 50	104%	60%	140%	102%	80%	120%	74%	60%	140%

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Moisture Content	ORG-91-5106	EPA SW-846 3541 & 8270	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009		GC/FID
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 15T957961

PROJECT: 1525987

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
www.agatlabs.com webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Laboratory Use Only

Work Order #: 15T957961
Cooler Quantity: 1
Arrival Temperatures: 4 | 3 | 4
2 | 1 | 2
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Report Information:

Company: GAL
Contact: Keith Holmes
Address: 1931 Robertson Road
Phone: 613-592-9600 Fax:
Reports to be sent to:
1. Email: kholmes@golder.com
2. Email:

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04 Table 3 *Indicate One*
☐ Ind/Com
☑ Res/Park
☐ Agriculture

Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ____ *Indicate One*

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other ____ *Indicate One*

Turnaround Time (TAT) Required:

Regular TAT ☐ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)
☑ 3 Business Days ☐ 2 Business Days ☐ 1 Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Project Information:

Project: 1525987
Site Location:
Sampled By: Jason Derouin
AGAT Quote #:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Is this submission for a Record of Site Condition? ☑ Yes ☐ No

Report Guideline on Certificate of Analysis ☐ Yes ☑ No

Invoice Information:

Bill To Same: Yes ☑ No ☐
Company: GAL
Contact: Accounting
Address:
Email: Ottawa_Accounting@golder.com

Sample Matrix Legend

- **B** Biota
- **GW** Ground Water
- **O** Oil
- **P** Paint
- **S** Soil
- **SD** Sediment
- **SW** Surface Water

(Check Applicable)

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ NO_3/NO_2 ☐ Total N ☐ Hg ☐ pH ☐ SAR	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
BH15-2 SA44	24/03/15		1	S	extract F1+VOCs if possible							✓	✓							
BH15-2 SA4	24/03/15		2	S								✓	✓							
BH15-2 SA3	24/03/15		1	S											✓					
BH15-2 SA33	24/03/15		1	S											✓					
BH15-4 SA3	24/03/15		3	S								✓	✓		✓					
BH15-2 SA1	24/03/15		3	S								✓	✓		✓					
BH15-1 SA1	25/03/15		3	S								✓	✓		✓					
BH15-1 SA4	25/03/15		3	S								✓	✓		✓					
BH15-3 SA1	24/03/15		3	S								✓	✓		✓					
BH15-3 SA3	24/03/15		3	S								✓	✓		✓					
BH15-4 SA1	24/03/15		2	S								✓	✓							

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time	
Tony Lyon	Mar 27, '15	16:16	L Bertholet	Mar27/15	16h13	Page 1 of 1
Tony Lyon	Mar 27, '15	16:16	[illegible signature]	Mar 28	10:15	Nº: T000648

Document ID: DIV-78-1511.000

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Date Issued: Jan 8, 2015

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: GOLDER ASSOCIATES LTD
1931 ROBERTSON ROAD
OTTAWA, ON K2H5B7
(613) 592-9600

ATTENTION TO: Keith Holmes

PROJECT: 1525987

AGAT WORK ORDER: 15T957963

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Apr 01, 2015

PAGES (INCLUDING COVER): 16

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 15T957963

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		15-1	15-2	15-3	15-4		Dup1
		SAMPLE TYPE:		Water	Water	Water	Water		Water
		DATE SAMPLED:		3/27/2015	3/27/2015	3/27/2015	3/27/2015		3/27/2015
Parameter	Unit	G / S	RDL	6409917	6409918	6409926	6409934	RDL	6409944
Naphthalene	µg/L	1400	0.20	<0.20	0.36	<0.20	0.70	0.60	<0.60
Acenaphthylene	µg/L	1.8	0.20	<0.20	<0.20	<0.20	<0.20	0.60	<0.60
Acenaphthene	µg/L	600	0.20	<0.20	<0.20	<0.20	<0.20	0.60	<0.60
Fluorene	µg/L	400	0.20	<0.20	<0.20	<0.20	<0.20	0.60	<0.60
Phenanthrene	µg/L	580	0.10	<0.10	<0.10	<0.10	<0.10	0.30	<0.30
Anthracene	µg/L	2.4	0.10	<0.10	<0.10	<0.10	<0.10	0.30	<0.30
Fluoranthene	µg/L	130	0.20	<0.20	<0.20	<0.20	<0.20	0.60	<0.60
Pyrene	µg/L	68	0.20	<0.20	<0.20	<0.20	<0.20	0.60	<0.60
Benz(a)anthracene	µg/L	4.7	0.20	<0.20	<0.20	<0.20	<0.20	0.60	<0.60
Chrysene	µg/L	1	0.10	<0.10	<0.10	<0.10	<0.10	0.30	<0.30
Benzo(b)fluoranthene	µg/L	0.75	0.10	<0.10	<0.10	<0.10	<0.10	0.30	<0.30
Benzo(k)fluoranthene	µg/L	0.4	0.10	<0.10	<0.10	<0.10	<0.10	0.30	<0.30
Benzo(a)pyrene	µg/L	0.81	0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20	0.60	<0.60
Dibenz(a,h)anthracene	µg/L	0.52	0.20	<0.20	<0.20	<0.20	<0.20	0.60	<0.60
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20	0.60	<0.60
2-and 1-methyl Naphthalene	µg/L	1800	0.20	<0.20	0.38	<0.20	1.5	0.60	<0.60
Surrogate	Unit	Acceptable Limits							
Chrysene-d12	%	50-140		70	74	72	69		82

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3 Site Condition Standards - Non Potable Ground Water - All Types of Property Use - Coarse Textured Soils

6409917-6409934 Note: The result for Benzo(b)Flouranthene is the total of the Benzo(b)&(j)Flouranthene isomers because the isomers co-elute on the GC column.

6409944 Note: The result for Benzo(b)Flouranthene is the total of the Benzo(b)&(j)Flouranthene isomers because the isomers co-elute on the GC column.
The sample was diluted because there was limited water available to perform the analysis. The reporting detection limit has been corrected for the dilution factor used.

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CANADA L4Z 1Y2
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AGAT WORK ORDER: 15T957963

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		15-1	15-2	15-3	15-4	Dup1
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		3/27/2015	3/27/2015	3/27/2015	3/27/2015	3/27/2015
Parameter	Unit	G / S	RDL	6409917	6409918	6409926	6409934	6409944
F1 (C6 to C10)	µg/L		25	<25	<25	<25	36	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25	<25	<25	30	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100	<100
F2 (C10 to C16) minus Naphthalene	µg/L	150	100	<100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100	<100	<100	<100
F3 (C16 to C34) minus PAHs	µg/L	500	100	<100	<100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA	NAS	NA	NA
Surrogate	Unit	Acceptable Limits						
Terphenyl	%	60-140		91	86	78	78	80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3 Site Condition Standards - Non Potable Ground Water - All Types of Property Use - Coarse Textured Soils

6409917-6409944 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

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AGAT WORK ORDER: 15T957963

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		15-1		15-2		15-3		15-4
		SAMPLE TYPE:		Water		Water		Water		Water
		DATE SAMPLED:		3/27/2015		3/27/2015		3/27/2015		3/27/2015
Parameter	Unit	G / S	RDL	6409917	RDL	6409918	RDL	6409926	RDL	6409934
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
Vinyl Chloride	µg/L	0.5	0.17	<0.17	0.34	<0.34	0.17	<0.17	0.34	<0.34
Bromomethane	µg/L	5.6	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
Trichlorofluoromethane	µg/L	2500	0.40	<0.40	0.80	<0.80	0.40	<0.40	0.80	<0.80
Acetone	µg/L	130000	1.0	<1.0	2.0	<2.0	1.0	<1.0	2.0	<2.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30	0.60	<0.60	0.30	<0.30	0.60	<0.60
Methylene Chloride	µg/L	610	0.30	<0.30	0.60	<0.60	0.30	<0.30	0.60	<0.60
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
Methyl tert-butyl ether	µg/L	190	0.20	<0.20	0.40	4.2	0.20	<0.20	0.40	<0.40
1,1-Dichloroethane	µg/L	320	0.30	<0.30	0.60	<0.60	0.30	<0.30	0.60	<0.60
Methyl Ethyl Ketone	µg/L	470000	1.0	11	2.0	21	1.0	<1.0	2.0	<2.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
Chloroform	µg/L	2.4	0.20	2.1	0.40	2.8	0.20	3.2	0.40	0.91
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
1,1,1-Trichloroethane	µg/L	640	0.30	<0.30	0.60	<0.60	0.30	<0.30	0.60	<0.60
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
Benzene	µg/L	44	0.20	<0.20	0.40	1.8	0.20	<0.20	0.40	<0.40
1,2-Dichloropropane	µg/L	16	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
Trichloroethylene	µg/L	1.6	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
Bromodichloromethane	µg/L	85000	0.20	<0.20	0.40	<0.40	0.20	0.27	0.40	<0.40
Methyl Isobutyl Ketone	µg/L	140000	1.0	<1.0	2.0	<2.0	1.0	<1.0	2.0	<2.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
Toluene	µg/L	18000	0.20	0.67	0.40	1.6	0.20	1.5	0.40	0.66
Dibromochloromethane	µg/L	82000	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
Ethylene Dibromide	µg/L	0.25	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
Tetrachloroethylene	µg/L	1.6	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
1,1,1,2-Tetrachloroethane	µg/L	3.3	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
Chlorobenzene	µg/L	630	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
Ethylbenzene	µg/L	2300	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	0.55
m & p-Xylene	µg/L		0.20	<0.20	0.40	0.51	0.20	0.37	0.40	2.8

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Certificate of Analysis

AGAT WORK ORDER: 15T957963

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

SAMPLE DESCRIPTION:				15-1		15-2		15-3		15-4
SAMPLE TYPE:				Water		Water		Water		Water
DATE SAMPLED:				3/27/2015		3/27/2015		3/27/2015		3/27/2015
Parameter	Unit	G / S	RDL	6409917	RDL	6409918	RDL	6409926	RDL	6409934
Bromoform	µg/L	380	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
Styrene	µg/L	1300	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
1,1,2,2-Tetrachloroethane	µg/L	3.2	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
o-Xylene	µg/L		0.10	<0.10	0.20	<0.20	0.10	0.10	0.20	2.4
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
1,4-Dichlorobenzene	µg/L	8	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
1,2-Dichlorobenzene	µg/L	4600	0.10	<0.10	0.20	<0.20	0.10	<0.10	0.20	<0.20
1,3-Dichloropropene	µg/L	5.2	0.30	<0.30	0.60	<0.60	0.30	<0.30	0.60	<0.60
Xylene Mixture	µg/L	4200	0.20	<0.20	0.40	0.51	0.20	0.47	0.40	5.2
n-Hexane	µg/L	51	0.20	<0.20	0.40	<0.40	0.20	<0.20	0.40	<0.40
Surrogate	Unit	Acceptable Limits								
Toluene-d8	% Recovery	50-140		89		91		94		91
4-Bromofluorobenzene	% Recovery	50-140		76		81		79		98

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AGAT WORK ORDER: 15T957963

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

SAMPLE DESCRIPTION:				Dup1	Field Blank	Trip Blank
SAMPLE TYPE:				Water	Water	Water
DATE SAMPLED:				3/27/2015	3/27/2015	3/27/2015
Parameter	Unit	G / S	RDL	6409944	6409952	6409955
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	5.6	0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	2500	0.40	<0.40	<0.40	<0.40
Acetone	µg/L	130000	1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	610	0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	190	0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	320	0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	470000	1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2.4	0.20	2.8	<0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	640	0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20	<0.20	<0.20
Benzene	µg/L	44	0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	16	0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	85000	0.20	0.25	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	140000	1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20	<0.20	<0.20
Toluene	µg/L	18000	0.20	1.5	<0.20	<0.20
Dibromochloromethane	µg/L	82000	0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.25	0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	3.3	0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	630	0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	2300	0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	0.36	<0.20	<0.20

Certified By:

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MISSISSAUGA, ONTARIO
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Certificate of Analysis

AGAT WORK ORDER: 15T957963

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		Dup1	Field Blank	Trip Blank
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		3/27/2015	3/27/2015	3/27/2015
Parameter	Unit	G / S	RDL	6409944	6409952	6409955
Bromoform	µg/L	380	0.10	<0.10	<0.10	<0.10
Styrene	µg/L	1300	0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	3.2	0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	8	0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	4600	0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	5.2	0.30	<0.30	<0.30	<0.30
Xylene Mixture	µg/L	4200	0.20	0.46	<0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits				
Toluene-d8	% Recovery	50-140		95	94	89
4-Bromofluorobenzene	% Recovery	50-140		80	76	75

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3 Site Condition Standards - Non Potable Ground Water - All Types of Property Use - Coarse Textured Soils

6409918 Dilution factor=2
The sample was diluted because it was foamy.The reporting detection limit has been corrected for the dilution factor used.

6409934 Dilution factor=2
The sample was diluted because it was foamy.The reporting detection limit has been corrected for the dilution factor used.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 15T957963

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O. Reg. 153(511) - VOCs (Water).

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: Trip Spike SAMPLE TYPE: Water DATE SAMPLED: 3/27/2015 6409958
Dichlorodifluoromethane	%			115
Vinyl Chloride	%			119
Bromomethane	%			118
Trichlorofluoromethane	%			120
Acetone	%			107
1,1-Dichloroethylene	%			104
Methylene Chloride	%			118
trans- 1,2-Dichloroethylene	%			95
Methyl tert-butyl ether	%			94
1,1-Dichloroethane	%			100
Methyl Ethyl Ketone	%			103
cis- 1,2-Dichloroethylene	%			92
Chloroform	%			106
1,2-Dichloroethane	%			90
1,1,1-Trichloroethane	%			95
Carbon Tetrachloride	%			97
Benzene	%			82
1,2-Dichloropropane	%			84
Trichloroethylene	%			79
Bromodichloromethane	%			91
Methyl Isobutyl Ketone	%			83
1,1,2-Trichloroethane	%			102
Toluene	%			96
Dibromochloromethane	%			102
Ethylene Dibromide	%			98
Tetrachloroethylene	%			88
1,1,1,2-Tetrachloroethane	%			100
Chlorobenzene	%			96
Ethylbenzene	%			80
m & p-Xylene	%			89

Certified By:

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FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 15T957963

PROJECT: 1525987

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

O. Reg. 153(511) - VOCs (Water).

DATE RECEIVED: 2015-03-28

DATE REPORTED: 2015-04-01

		SAMPLE DESCRIPTION:		Trip Spike
		SAMPLE TYPE:		Water
		DATE SAMPLED:		3/27/2015
Parameter	Unit	G / S	RDL	6409958
Bromoform	%			98
Styrene	%			85
1,1,2,2-Tetrachloroethane	%			107
o-Xylene	%			99
1,3-Dichlorobenzene	%			79
1,4-Dichlorobenzene	%			93
1,2-Dichlorobenzene	%			83
1,3-Dichloropropene	%			72
Xylene Mixture	%			94
n-Hexane	%			96
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		101
4-Bromofluorobenzene	% Recovery	50-140		100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

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Guideline Violation

AGAT WORK ORDER: 15T957963

PROJECT: 1525987

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SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6409918	15-2	T3(NPGW) - Current	O. Reg. 153(511) - VOCs (Water)	Chloroform	2.4	2.8
6409926	15-3	T3(NPGW) - Current	O. Reg. 153(511) - VOCs (Water)	Chloroform	2.4	3.2
6409944	Dup1	T3(NPGW) - Current	O. Reg. 153(511) - VOCs (Water)	Chloroform	2.4	2.8

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 15T957963
PROJECT: 1525987
ATTENTION TO: Keith Holmes
SAMPLING SITE:
SAMPLED BY:T L

Trace Organics Analysis

RPT Date: Apr 01, 2015			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	6410005		< 0.20	< 0.20	0.0%	< 0.20	83%	50%	140%	110%	50%	140%	102%	50%	140%
Vinyl Chloride	6410005		< 0.17	< 0.17	0.0%	< 0.17	96%	50%	140%	102%	50%	140%	112%	50%	140%
Bromomethane	6410005		< 0.20	< 0.20	0.0%	< 0.20	105%	50%	140%	104%	50%	140%	112%	50%	140%
Trichlorofluoromethane	6410005		< 0.40	< 0.40	0.0%	< 0.40	118%	50%	140%	107%	50%	140%	104%	50%	140%
Acetone	6410005		< 1.0	< 1.0	0.0%	< 1.0	103%	50%	140%	100%	50%	140%	110%	50%	140%
1,1-Dichloroethylene	6410005		< 0.30	< 0.30	0.0%	< 0.30	110%	50%	140%	114%	60%	130%	104%	50%	140%
Methylene Chloride	6410005		< 0.30	< 0.30	0.0%	< 0.30	111%	50%	140%	108%	60%	130%	117%	50%	140%
trans- 1,2-Dichloroethylene	6410005		< 0.20	< 0.20	0.0%	< 0.20	111%	50%	140%	110%	60%	130%	109%	50%	140%
Methyl tert-butyl ether	6410005		< 0.20	< 0.20	0.0%	< 0.20	102%	50%	140%	110%	60%	130%	107%	50%	140%
1,1-Dichloroethane	6410005		< 0.30	< 0.30	0.0%	< 0.30	122%	50%	140%	120%	60%	130%	121%	50%	140%
Methyl Ethyl Ketone	6410005		< 1.0	< 1.0	0.0%	< 1.0	98%	50%	140%	100%	50%	140%	105%	50%	140%
cis- 1,2-Dichloroethylene	6410005		< 0.20	< 0.20	0.0%	< 0.20	107%	50%	140%	98%	60%	130%	106%	50%	140%
Chloroform	6410005		< 0.20	< 0.20	0.0%	< 0.20	117%	50%	140%	109%	60%	130%	111%	50%	140%
1,2-Dichloroethane	6410005		< 0.20	< 0.20	0.0%	< 0.20	106%	50%	140%	100%	60%	130%	103%	50%	140%
1,1,1-Trichloroethane	6410005		< 0.30	< 0.30	0.0%	< 0.30	108%	50%	140%	101%	60%	130%	98%	50%	140%
Carbon Tetrachloride	6410005		< 0.20	< 0.20	0.0%	< 0.20	107%	50%	140%	101%	60%	130%	99%	50%	140%
Benzene	6410005		< 0.20	< 0.20	0.0%	< 0.20	114%	50%	140%	90%	60%	130%	96%	50%	140%
1,2-Dichloropropane	6410005		< 0.20	< 0.20	0.0%	< 0.20	98%	50%	140%	100%	60%	130%	94%	50%	140%
Trichloroethylene	6410005		< 0.20	< 0.20	0.0%	< 0.20	103%	50%	140%	95%	60%	130%	90%	50%	140%
Bromodichloromethane	6410005		< 0.20	< 0.20	0.0%	< 0.20	109%	50%	140%	105%	60%	130%	100%	50%	140%
Methyl Isobutyl Ketone	6410005		< 1.0	< 1.0	0.0%	< 1.0	106%	50%	140%	93%	50%	140%	90%	50%	140%
1,1,2-Trichloroethane	6410005		< 0.20	< 0.20	0.0%	< 0.20	114%	50%	140%	120%	60%	130%	121%	50%	140%
Toluene	6410005		< 0.20	< 0.20	0.0%	< 0.20	126%	50%	140%	113%	60%	130%	113%	50%	140%
Dibromochloromethane	6410005		< 0.10	< 0.10	0.0%	< 0.10	127%	50%	140%	117%	60%	130%	120%	50%	140%
Ethylene Dibromide	6410005		< 0.10	< 0.10	0.0%	< 0.10	123%	50%	140%	113%	60%	130%	115%	50%	140%
Tetrachloroethylene	6410005		< 0.20	< 0.20	0.0%	< 0.20	119%	50%	140%	108%	60%	130%	119%	50%	140%
1,1,1,2-Tetrachloroethane	6410005		< 0.10	< 0.10	0.0%	< 0.10	115%	50%	140%	110%	60%	130%	117%	50%	140%
Chlorobenzene	6410005		< 0.10	< 0.10	0.0%	< 0.10	126%	50%	140%	109%	60%	130%	116%	50%	140%
Ethylbenzene	6410005		< 0.10	< 0.10	0.0%	< 0.10	109%	50%	140%	97%	60%	130%	99%	50%	140%
m & p-Xylene	6410005		< 0.20	< 0.20	0.0%	< 0.20	125%	50%	140%	112%	60%	130%	111%	50%	140%
Bromoform	6410005		< 0.10	< 0.10	0.0%	< 0.10	121%	50%	140%	114%	60%	130%	126%	50%	140%
Styrene	6410005		< 0.10	< 0.10	0.0%	< 0.10	90%	50%	140%	96%	60%	130%	97%	50%	140%
1,1,2,2-Tetrachloroethane	6410005		< 0.10	< 0.10	0.0%	< 0.10	129%	50%	140%	121%	60%	130%	121%	50%	140%
o-Xylene	6410005		< 0.10	< 0.10	0.0%	< 0.10	119%	50%	140%	118%	60%	130%	123%	50%	140%
1,3-Dichlorobenzene	6410005		< 0.10	< 0.10	0.0%	< 0.10	116%	50%	140%	95%	60%	130%	102%	50%	140%
1,4-Dichlorobenzene	6410005		< 0.10	< 0.10	0.0%	< 0.10	113%	50%	140%	112%	60%	130%	118%	50%	140%
1,2-Dichlorobenzene	6410005		< 0.10	< 0.10	0.0%	< 0.10	121%	50%	140%	98%	60%	130%	102%	50%	140%
1,3-Dichloropropene	6410005		< 0.30	< 0.30	0.0%	< 0.30	98%	50%	140%	90%	60%	130%	84%	50%	140%
n-Hexane	6410005		< 0.20	< 0.20	0.0%	< 0.20	73%	50%	140%	115%	60%	130%	93%	50%	140%

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CANADA L4Z 1Y2
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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 15T957963
PROJECT: 1525987
ATTENTION TO: Keith Holmes
SAMPLING SITE:
SAMPLED BY:T L

Trace Organics Analysis (Continued)

RPT Date: Apr 01, 2015			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	6413486		1.8	1.8	0.0%	< 0.20	98%	50%	140%	88%	50%	140%	77%	50%	140%
Acenaphthylene	6413486		< 0.20	< 0.20	0.0%	< 0.20	103%	50%	140%	81%	50%	140%	78%	50%	140%
Acenaphthene	6413486		< 0.20	< 0.20	0.0%	< 0.20	104%	50%	140%	84%	50%	140%	80%	50%	140%
Fluorene	6413486		< 0.20	< 0.20	0.0%	< 0.20	101%	50%	140%	78%	50%	140%	76%	50%	140%
Phenanthrene	6413486		0.19	0.19	0.0%	< 0.10	87%	50%	140%	75%	50%	140%	76%	50%	140%
Anthracene	6413486		< 0.10	< 0.10	0.0%	< 0.10	99%	50%	140%	82%	50%	140%	79%	50%	140%
Fluoranthene	6413486		< 0.20	< 0.20	0.0%	< 0.20	103%	50%	140%	78%	50%	140%	84%	50%	140%
Pyrene	6413486		< 0.20	< 0.20	0.0%	< 0.20	105%	50%	140%	80%	50%	140%	87%	50%	140%
Benz(a)anthracene	6413486		< 0.20	< 0.20	0.0%	< 0.20	85%	50%	140%	68%	50%	140%	77%	50%	140%
Chrysene	6413486		< 0.10	< 0.10	0.0%	< 0.10	106%	50%	140%	95%	50%	140%	82%	50%	140%
Benzo(b)fluoranthene	6413486		< 0.10	< 0.10	0.0%	< 0.10	92%	50%	140%	60%	50%	140%	72%	50%	140%
Benzo(k)fluoranthene	6413486		< 0.10	< 0.10	0.0%	< 0.10	104%	50%	140%	90%	50%	140%	71%	50%	140%
Benzo(a)pyrene	6413486		< 0.01	< 0.01	0.0%	< 0.01	100%	50%	140%	82%	50%	140%	77%	50%	140%
Indeno(1,2,3-cd)pyrene	6413486		< 0.20	< 0.20	0.0%	< 0.20	110%	50%	140%	70%	50%	140%	77%	50%	140%
Dibenz(a,h)anthracene	6413486		< 0.20	< 0.20	0.0%	< 0.20	126%	50%	140%	62%	50%	140%	73%	50%	140%
Benzo(g,h,i)perylene	6413486		< 0.20	< 0.20	0.0%	< 0.20	126%	50%	140%	78%	50%	140%	83%	50%	140%
2-and 1-methyl Naphthalene	6413486		6.8	7.0	2.9%	< 0.20	102%	50%	140%	85%	50%	140%	78%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)															
F1 (C6 to C10)	6398077		< 25	< 25	0.0%	< 25	106%	60%	140%	81%	60%	140%	81%	60%	140%
F2 (C10 to C16)	6409934	6409934	< 100	< 100	0.0%	< 100	94%	60%	140%	73%	60%	140%	67%	60%	140%
F3 (C16 to C34)	6409934	6409934	< 100	< 100	0.0%	< 100	96%	60%	140%	82%	60%	140%	92%	60%	140%
F4 (C34 to C50)	6409934	6409934	< 100	< 100	0.0%	< 100	84%	60%	140%	76%	60%	140%	78%	60%	140%

Certified By:

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CANADA L4Z 1Y2
TEL (905)712-5100
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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 15T957963

PROJECT: 1525987

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluorene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Phenanthrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene-d12	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
F1 (C6 to C10)	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC- E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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MISSISSAUGA, ONTARIO
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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 15T957963

PROJECT: 1525987

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 15T957963

PROJECT: 1525987

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:T L

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
www.agatlabs.com webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Laboratory Use Only
Work Order #: 15T957963
Cooler Quantity: 1
Arrival Temperatures: 4 | 5 | 5
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Report Information:
Company: GAL
Contact: Keith Holmes
Address: 1931 Robertson Road
Phone: Fax:
Reports to be sent to:
1. Email: kholmes@golder.com
2. Email:

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)
☑ Regulation 153/04 Table 3 (Indicate One) ☐Ind/Com ☑Res/Park ☐Agriculture
Soil Texture (Check One) ☐Coarse ☐Fine
☐ Sewer Use ☐Sanitary ☐Storm Region (Indicate One)
☐ Regulation 558 ☐ CCME ☐ Prov. Water Quality Objectives (PWQO) ☐ Other (Indicate One)

Turnaround Time (TAT) Required:
Regular TAT ☐ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply) ☑ 3 Business Days ☐ 2 Business Days ☐ 1 Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Project Information:
Project: 1525987
Site Location:
Sampled By: Tony Lyon
AGAT Quote #:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Is this submission for a **Record of Site Condition?** ☑ Yes ☐ No
Report Guideline on Certificate of Analysis ☐ Yes ☑ No

Invoice Information: Bill To Same: Yes ☑ No ☐
Company: GAL
Contact: Accounting
Address:
Email: ottawa-accounting@golder.com

Sample Matrix Legend
B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

(Check Applicable)

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr⁶⁺ ☐EC ☐FOC ☐NO_3/NO_2 ☐Total N ☐Hg ☐pH ☐SAR	Nutrients: ☐TP ☐NH_3 ☐TKN ☐NO_3 ☐NO_2 ☐NO_3/NO_2	Volatiles: ☑VOC ☐BTEX ☐THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
15-1	27/03/15		8	GW	Mar. 27, 15							✓	✓		✓					
15-2	↓		8	↓	is the							✓	✓		✓					
15-3	↓		8	↓	correct date							✓	✓		✓					
15-4	↓		8	↓	for all							✓	✓		✓					
Dup 1	↓		8	↓	GW samples							✓	✓		✓					
Field blank	↓		3	↓	(not Mar 28)							✓								
Trip blank	↓		3	↓								✓								
Trip spike	↓		3	↓								✓								
Lab Dup 15-4	27/03/15		2	GW	-limited recovery in all wells															

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time	
Tony Lyon [signature]	Mar 27 '15	16:16	L Berthelot [signature]	Mar 27/15	16h13	Page 1 of 1
Tony Lyon [signature]	Mar 27.15		[signature]	Mar 28	10:15	Nº: T000649