Phase Two Environmental Site Assessment

688, 694, and 698 Brant Street, Burlington, Ontario

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Type of Document:
FINAL

Project Name:
Phase Two Environmental Site Assessment

Project Number:
GTR-21018895-B0

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Date Submitted:
February 10, 2023

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1 Executive Summary

EXP Services Inc. (EXP) was retained by by Elite 688 Brant Holdings Inc. ('Client') to complete a Phase Two Environmental Site Assessment (ESA) of the property municipally addressed as 688, 694 and 698 Brant Street in Burlington, Ontario. These adjoining parcels of land are hereinafter referred to as the 'Site' or the 'Phase Two Property'.

For ease of reference, a project north has been used throughout this report, in which Brant Street is situated in a north-south orientation (as depicted on Figure 2).

The Site is located on the west side of Brant Street, in Burlington, Ontario, west of the intersection of Brant Street and Blairholm Avenue (refer to Figure 1). The Site has an area of approximately 0.76 hectares (1.89 acres) and is occupied by a commercial building with a partial basement on the south portion (688 Brant Street), a two (2) storey apartment building with full basement on the central portion (694 Brant Street), and a two (2) storey residential building with full basement on the north portion (698 Brant Street). The exterior areas of the Site consist of asphalt paved parking areas to the north and west, and manicured lawns east of the Site buildings.

The Phase Two Property is bound by Brant Street to the east, followed by residential properties to the north and west, and commercial/institutional properties to the south.

According to a review of historical records, aerial photographs, and an interview with the Site representative within the Phase One ESA completed by EXP (EXP, 2023), the Site was first developed for residential use since at least the early 1930s. Prior to that time, the Site was inferred to be vacant or used for agricultural purposes. The southern portion of the Site was re-developed for commercial and/or institutional purposes circa 1960s. The northern portion of the Site was formerly occupied by one (1) residential dwelling until the early 1960s and re-developed with the current multi-unit residential dwelling (698 Brant Street) and apartment building (694 Brant Street) in approximately 1934 and 1954 (698 Brant and 694 Brant, respectively).

It is EXP's understanding that the Site is to be redeveloped for residential purposes, with a proposed eleven (11) storey condominium building with three (3) levels of underground parking. The redevelopment of the Site will require a Record of Site Condition (RSC) to be filed for the portion of the Site addressed as 688 Brant Street. As such, the objective of the investigation was to support the filing of a RSC in accordance with Ontario Regulation (O.Reg.) 153/04, as amended.

This Phase Two ESA was conducted in accordance with the Phase Two ESA standards defined by O.Reg. 153/04 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.

The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified in the Phase One ESA completed by EXP in February 2023 and to support the filing of a Record of Site Condition (RSC) on the Ontario Ministry of the Environment, Conservation and Parks (MECP) Environmental Brownfield Site Registry. The detailed information regarding the APECs is outlined in Section 3.0 of the report.

The results and findings of the Phase Two ESA conducted at the Site are summarized as follows:

- Seven (7) boreholes were advanced by ALTECH Drilling & Investigative Services Ltd. between January 12th and 20th, 2023. Of the seven (7) boreholes, four (4) boreholes were utilized for environmental purposes and drilled to a maximum depth between of 2.13 and 6.1 metres below ground surface (m bgs). The other three (3) remaining boreholes were advanced to approximately 13 m bgs.
- The general stratigraphy at the Site, as observed in the boreholes; consisted of asphalt (overlying sandy gravel fill) or surficial topsoil in all boreholes, underlain by reworked native and/or native sand materials. The reworked native material

extended to depths of approximately 1.0 and 2.13 m bgs. Native material was encountered in all boreholes, with the exception of BH-5. The underlying native soil consisted of sand overlying till deposits. Red shale bedrock of the Queenston Formation was encountered underlying the native till at depths ranging from approximately 5.33 to completion depth at 6.10 m bgs.

- The monitoring well network advanced as part of this Phase Two ESA consisted of three (3) newly installed monitoring wells (BH/MW-1S, BH/MW-2, and BH/MW-4S). The three (3) wells were screened between 1.52 and 4.57 m bgs, within the native sand and silty clay and/or sand till layer. Based on the groundwater contour map delineated for the Site, on-Site groundwater flow is to the southeast (Figure 6). EXP notes that the direction of localized groundwater flow is significantly influenced by disturbed soil (fill), railway tracks, and underground utilities within the Site. As such, the measured groundwater flow direction may not be representative of the regional area.
- The horizontal hydraulic gradient on Site was calculated as 0.005 m/m (between BH/MW-1S and BH/MW-2) and 0.001 m/m (between BH/MW-2 and BH/MW-4S).
- The reported pH values were 8.06 for surface soils and 7.74 for subsurface soils, across the investigation, which are within the acceptable range to use the Table 2 SCS.
- Soil samples were submitted for the analysis of Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), Metals including hydride-forming metals, Polycyclic Aromatic Hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and selected Other Regulated Parameters (ORPs).
    - All parameters analyzed were either not detected at laboratory RDLs, or detected below the applicable Table 2 SCS, with the exception of BH-2 SS1, which exceeded Table 2 SCS for Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR).
    - It is the QP's opinion that the elevated concentrations of EC and SAR are associated with de-icing activities in the winter months for the safety of the public and vehicular traffic. As such, they are not considered to be in excess of the Table 2 SCS for the purposes of filing a RSC based on the exemption outlined in Section 49.1 of O.Reg. 153/04, and EC and SAR are not considered as COCs for the Site.
- Groundwater samples were submitted for the analysis of PHCs including BTEX, Metals and PCBs.
    - All parameters analyzed were either not detected at laboratory RDLs or detected below the applicable Table 2 SCS.
- No evidence of free product (i.e. visible film or sheen), or odor was observed during soil sampling, groundwater purging, or groundwater sampling activities.

Based on the findings of the Phase Two ESA, no further work is recommended at this time and as such, a Record of Site Condition may be filed.

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

2 Introduction

EXP Services Inc. (EXP) was retained by by Elite 688 Brant Holdings Inc. (‘Client‘) to complete a Phase Two Environmental Site Assessment (ESA) of the property municipally addressed as 688, 694 and 698 Brant Street in Burlington, Ontario. This adjoining parcel of land is hereinafter referred to as the 'Site' or the ‘Phase Two Property’.

It is EXP’s understanding that this Phase Two ESA is required for re-zoning and re-development purposes for residential land use. The objective of the investigation was to support future filing of a Record of Site Condition (RSC) in accordance with Ontario Regulation (O.Reg.) 153/04, as amended.

This Phase Two ESA was conducted in accordance with the Phase Two ESA standard defined by O.Reg. 153/04 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.

The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified in the Phase One ESA completed by EXP (EXP, 2023) and to support the filing of a Record of Site Condition (RSC) on the Ontario Ministry of the Environment, Conservation and Parks (MECP) Environmental Brownfield Site Registry.

2.1 Site Description

For ease of reference, a project north has been used throughout this report, in which Brant Street is situated in a north-south orientation (as depicted on Figure 2).

The Site is located on the west side of Brant Street, in Burlington, Ontario, west of the intersection of Brant Street and Blairholm Avenue (refer to Figure 1). The Site has an area of approximately 0.76 hectares (1.89 acres) and is occupied by a commercial building with a partial basement on the south portion (688 Brant Street), a two (2) storey apartment building with full basement on the central portion (694 Brant Street), and a two (2) storey residential building with full basement on the north portion (698 Brant Street). The exterior areas of the Site consist of asphalt paved parking areas to the north and west, and manicured lawns east of the Site buildings.

The Phase Two Property is bound by Brant Street to the east, followed by residential properties to the north and west, and commercial/institutional properties to the south.

According to a review of historical records, aerial photographs, and an interview with the Site representative within the Phase One ESA completed by EXP (EXP, 2023), the Site was first developed for residential use since at least the early 1930s. Prior to that time, the Site was inferred to be vacant or used for agricultural purposes. The southern portion of the Site was re-developed for commercial and/or institutional purposes circa 1960s. The northern portion of the Site was formerly occupied by one (1) residential dwelling until the early 1960s and re-developed with the current multi-unit residential dwelling (698 Brant Street) and apartment building (694 Brant Street) in approximately 1934 and 1954 (698 Brant and 694 Brant, respectively).

2.2 Legal Description and Property Ownership

Refer to the table below for the Site identification information:

Municipal Address	688, 694 and 698, Brant Street, Burlington, Ontario
Current Land Use	Commercial/Residential
Proposed Land Use	Residential

Legal Description	LT 65, RCP PL99; PT LT 66, RCP PL99, AS IN 290227; Burlington LT 66, RCP PL99, PART 1" & 2, "20R2804; Burlington LT 66, RCP PL99, PART 1" & 2, 20R2773; Burlington
Property Identification Number (PIN)	07089-0110 (LT) (688 Brant Street) 07089-0112 (LT) (694 Brant Street) 07089-0111 (LT) (698 Brant Street)
Approximate Universal Transverse Mercator (UTM) coordinates	NAD83 17T 596745 m E 4798283 m N
Accuracy Estimate of UTM	10-15 m
Measurement Method	Global Positioning System (GPS)
Site Area	0.76 hectares (1.89 acres)
Property Owner	Elite 688 Brant Holdings Inc.
Any Other Person Who Engaged the QPESA	Ibti Safi Elite 688 Brant Holdings Inc. 3410 South Service Road Suite 102 Burlington, Ontario L7N 3T2

2.3 Current and Proposed Future Uses

At the time of the Phase Two ESA, the Site was occupied by the following buildings:

- 688 Brant Street: a vacant commercial building with a partial basement located on the south portion of the Site. This building had a footprint of approximately 1,820 square meters (m^2) (19,590 square feet [ft^2]);
- 694 Brant Street: a two (2) storey apartment building (5 units) with full basement on the central portion of the Site. This building had a footprint of approximately 102 m^2 (1,097 ft^2); and,
- 698 Brant Street: a two (2) storey residential building (3 units) including a full basement located on the north portion of the Site. This building had a footprint of approximately 110 m^2 (1,185 ft^2).

The exterior areas of the Site consist of asphalt paved parking areas to the north and west, and manicured lawns to the east of the Site buildings.

It is EXP's understanding that the Client is redeveloping the Site for residential use.

2.4 Applicable Site Condition Standards

Analytical results obtained for Site soil and groundwater samples were assessed against Site Condition Standards (SCS) as established under subsection 169.4(1) of the Environmental Protection Act, and presented in the document MECP "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", ("SGWS" Standards), (MECP, 2011). 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 are provided in MECP (2011). 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).

For assessment purposes, EXP selected the MECP (2011) Table 2: Full Depth Background SCS in a Potable Groundwater Condition for Residential/Parkland/Institutional Land Use with coarse textured soil. The selection of this category was based on the following factors:

- More than 2/3 area of the Site has an overburden thickness greater than 2 m.
- The Site is not located within 30 m of a surface water body or an area of natural significance.
- The soil at the Site has a pH value between 5 and 9 for surficial soils; and, between 5 and 11 for subsurface soils.
- The property is not located within an area of natural significance; does not include, nor is it adjacent to an area of natural significance, nor is it part of such an area; and, it does not include land that is within 30 m of an area of natural significance, nor is it part of such an area. Based on the review of available resources from the Ministry of Natural Resources and Forestry and MECP, no areas of natural significance were identified at the Site or within the Phase One Study Area.
- The Site is serviced by the City of Burlington water distribution system; and, to the best of EXP's knowledge, all properties within 250 m of the Site are serviced by the municipal water supply (i.e., there are no potable water supply wells located within the Phase Two Study Area). The Region of Halton responded on February 7th, 2023, with an objection for the use of the non-potable standards based on the presence of a highly vulnerable aquifer in the area.
- Based on the Geotechnical Investigation Report (EXP 2023) (provided under a separate cover) , the predominant soil type on the Site is considered to be coarse textured (as per the results of the 75-micron sieve results).
- The Site proposed land use is residential.
- There is no intention to carry out a stratified restoration at the Site.

3 Background Information

3.1 Physical Setting

The following physiographic, geological and soil maps were reviewed:

- "Toporama"; Natural Resources Canada. Map 30M11. Scale 1:15,000. 2008.
- Quaternary Geology of Ontario - geology_ll.shp [computer file], Ontario: Ontario Geological Survey, 2000.
- Bedrock Geology of Ontario - geology_ll.shp [computer file], Ontario: Ontario Geological Survey, 2000.

Based on the review of the above maps, the following information was obtained:

- The Site is approximately 92 m above sea level and is generally flat.
- A review of the topographic map indicated that Rambo Creek is located approximately 160 m east of the Site. Rambo Creek flows in a southerly direction towards Lake Ontario, which is located approximately 1.26 km south of the Site. Based on the water levels recorded for the Site and the groundwater elevations, the anticipated groundwater flow direction is to the southeast.
- The Site is expected to consist of Glaciolacustrine deposits, predominantly sand, gravelly sand and gravel, nearshore and beach deposits from the Pleistocene era.
- The bedrock in the general area of the Site is part of a group belonging to the Queenston Formation consisting of shale, limestone, dolostone, and siltstone.

3.2 Previous Environmental Investigations

The following reports were available for review at the time of this Phase Two ESA:

1. A report entitled "*Preliminary Geotechnical Investigation Report (Draft) 688 Brant Street Burlington, Ontario*", prepared by EXP Services Inc. for Elite Developments on November 25, 2021.

    - This report presents the results of the preliminary geotechnical investigation carried out at the site of the proposed residential development at 688 Brant Street in Burlington, Ontario.
    - It was understood that the proposed development will consist of an 11-storey residential structure including a commercial/retail area and a 3-storey above-grade parking garage, including one level of underground parking covering the majority of the Site.
    - The purpose of this preliminary investigation was to determine the subsoil and groundwater conditions at the Site by advancing five (5) boreholes and based on an assessment of the factual subsurface data, provide an engineering report containing general geotechnical recommendations pertinent to the proposed construction.
    - The Site is situated at 688 Brant Street and is currently occupied by a single-storey commercial building with an associated asphalt parking lot. Low to mid-rise residential/commercial properties bound the Site to the south and west, and a mid-rise commercial property bounds the site to the east.
    - EXP advanced a total of five (5) boreholes at the Site; numbered BH-1 to BH-5. The boreholes were advanced using solid stem augers and terminated in shale bedrock at depths ranging from approximately 4.8 to 6.2 m below existing grade.

- The fieldwork for this investigation was carried out on October 12 and 13, 2021. Drilling and sampling operations were completed by a combination of auger and split-spoon techniques using truck mounted drilling equipment owned and operated by a specialist drilling subcontractor.
- The soil stratigraphy was asphalt (overlying granular fill) or surficial topsoil surface at all boreholes, underlain by fill and/or native sand. The fill extended to depths of approximately 0.7 to 1.5 m below existing grade. The underlying native soil consisted of sand overlying till deposits. Red shale bedrock of the Queenston Formation was encountered underlying the till at depths ranging from approximately 4.5 to 5.6 m below grade.
- Groundwater conditions were monitored in the open boreholes during and upon completion of the investigation. Boreholes BH-1 and BH-2 (2021) encountered groundwater at a depth of approximately 4.0 m below grade upon completion, and the remaining boreholes were dry upon completion, however; groundwater levels were not anticipated to have stabilized during the short term of the investigation.
- No environmental sampling was completed during the geotechnical investigation.

2. A report entitled "*Phase One Environmental Site Assessment – 688, 694 and 698 Brant Street, Burlington, Ontario*" dated February 2023, was prepared for by Elite 688 Brant Holdings Inc., by EXP Services Inc. (EXP). Pertinent information from the report is as follows:

- Based on the Assessment of Past Uses findings, the following information is provided in the following Table in support of the Qualified Person's (QP's) conclusion:

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)1	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1A: Former waste storage (PCA identifier 1A)	Southwest portion of the Site (688 Brant Street)	PCA 'Other' – Waste generations	On-Site	Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), Metals, Hydride-forming Metals (HFM), Polychlorinated biphenyls (PCBs)	Soil and groundwater
APEC 1B: Transformer (in-use)	Southeast portion of the Site (688 Brant Street)	PCA 55– Transformer Manufacturing, Processing and Use	On-Site	PCBs, PHCs, BTEX	Soil
APEC 1C: Salt application (PCA identifier 1B)	Parking areas on Site	PCA 'Other' – Application of De-icing Agents (or Products)	On-Site	Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR)	Soil
APEC 1D: Former buildings on the northeast corner of the Site (PCA identifier 1C)	Northeast portion of the Site (698 Brant Street)	PCA #30 – Importation of Fill Material of Unknown Quality	On-Site	Polycyclic Aromatic Hydrocarbons (PAHs), Metals, HFM, PHCs, BTEX	Soil

(1) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D (O.Reg.153/04, as amended) that is occurring or has occurred in a Phase One Study Area.

4 Scope of the Investigation

4.1 Overview of Site Investigation

The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified in the Phase One ESA completed by EXP in February 2023 and to support the filing of a Record of Site Condition (RSC) on the Ontario Ministry of the Environment, Conservation and Parks (MECP) Environmental Brownfield Site.

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

- Request local utility locating companies (e.g., cable, telephone, gas, hydro, water, sewer and storm water) to mark any underground utilities present at the Site;
- Retain a private utility locating company to mark any underground utilities present in the vicinity of the borehole locations and to clear the individual borehole locations;
- Advance a total of seven (7) boreholes across the Site in conjunction with a geotechnical and hydrogeological investigation (reported under separate covers);
- Utilize four (4) of the seven (7) boreholes advanced to assess soil quality at the Site as part of the Phase Two ESA;
- Complete six (6) boreholes (BH/MW-1S, BH/MW-1D, BH/MW-2, BH/MW-3, BH/MW-4S and BH/MW-4D) as monitoring wells, with three (3) of the six (6) monitoring wells to be utilized to assess groundwater quality at the Site as part of the Phase Two ESA;
- Collect representative soil samples from the boreholes for laboratory analysis of PHCs, BTEX, Metals, PAHs, PCBs, selected ORPs, pH and/or, 75-micron sieve;
- Develop newly installed groundwater monitoring wells;
- Collect groundwater samples from three (3) newly installed monitoring wells for laboratory chemical analysis of PHCs, BTEX, Metals, and PCBs;
- Complete an elevation survey of all newly installed monitoring wells to determine the groundwater flow direction in the groundwater unit(s) identified beneath the Site; and,
- Analyze the data and prepare a report of the findings, in accordance with O.Reg.153/04.

4.2 Media Investigated

The Phase Two ESA included the investigation of the Site soil and/or groundwater. As there were no surface water bodies on the Site, sediment sampling was not required.

4.3 Phase One Conceptual Site Model

The Phase One Conceptual Site Model (CSM) is incorporated into the Phase Two CSM, presented in Appendix F.

4.4 Deviations from Sampling and Analysis Plan (SAP)

The field investigative and sampling program was carried out following the requirements of the Site Sampling and Analysis Plan (SAP in Appendix A).

No significant deviations from the SAP were reported that affected the sampling and data quality objectives.

4.5 Impediments

The entire Site was accessible at the time of the investigation, and no physical impediments were encountered during the field investigation.

5 Investigation Method

5.1 General

The Site investigative activities consisted of the following:

- Borehole drilling to facilitate the collection of soil samples for geologic characterization and/or chemical analysis; and,
- Monitoring well installation for the collection of groundwater samples for chemical analysis.

Boreholes were advanced in the surficial material and overburden soils by a licensed drilling company, ALTECH Drilling and Investigative Services (ALTECH) under the full-time supervision of EXP staff. The drilling equipment used to advance the boreholes is described below. No petroleum-based greases or solvents were used during drilling activities.

Monitoring wells were installed in the boreholes by a MECP licensed well contractor in accordance with Reg. 903/90, as amended, using manufactured well components (i.e., riser pipes and screens) and materials (i.e., sand pack and grout) from documented sources.

5.2 Underground Utilities

Prior to the commencement of drilling activities, the locations of underground utilities including but not limited to cable, telephone, natural gas, electrical lines, water, sewer, and storm water conduits were marked out by public locating companies. In addition, a private utility locating service (ALTECH) was retained to clear individual borehole locations.

5.3 Borehole Program

The fieldwork for the soil investigative portion of the Phase Two ESA was carried out between January 12th and 20th, 2023. The boreholes were advanced under full-time supervision of EXP staff.

Seven (7) boreholes were advanced by ALTECH between January 12th and 20th, 2023. Of the seven (7) boreholes, four (4) boreholes were utilized for environmental purposes and drilled to maximum depths between of 2.13 and 6.1 metres below ground surface (m bgs). The three (3) remaining boreholes were advanced to approximately 13 m bgs for the purposes of the geotechnical and hydrogeological investigations.

Three (3) of boreholes (BH/MW1-S, BH/MW-2 and BH/MW-4S) (for the environmental investigation), were advanced using a truck-mounted D-70 equipped with hollow stem augers and split spoon sampling equipment. The remaining borehole (BH-5) (for the environmental investigation) was advanced using a Pionjar. No petroleum-based greases or solvents were used during drilling activities. A summary of the boreholes advanced is provided in Table 2.

EXP continuously monitored the drilling activities to record the physical characteristics of the soil, depth of soil sample collection and total depth of boreholes. Field observations are summarized on the borehole logs provided in Appendix C. Representative soil samples were recovered in the overburden of the boreholes at regular intervals using a split spoon sampler.

Efforts to prevent cross contamination during the soil sampling program included the use of dedicated nitrile gloves, sampling containers, and hermetic sampling syringes etc. during sampling handling, washing the auger flights between sample locations, and changing the Shelby tube sampler between runs.

Drill cuttings were temporarily stored in sealed on-Site drums pending analytical results.

5.4 Soil: Sampling

The soil sampling conducted during the completion of this Phase Two ESA was undertaken in accordance with the SAAP presented in Appendix A.

Soil samples for geologic characterization and chemical analysis were collected on a continuous basis in the overburden materials using sampling equipment advanced into the subsurface using a truck mount D-70 drill rig/Pionjar. Upon retrieval from the boreholes, the split spoons were placed on a flat surface and disassembled by drilling personnel to provide access of the recovered cores. Geologic and sampling details of the recovered cores were logged and assessed for the potential presence of non-aqueous phase liquids. Soil stratigraphy encountered in the boreholes were texturally, visually and olfactory classified in the field and in the laboratory. Soil samples were logged for colour, grain size, moisture content, density, structures, texture and/or staining. Field observations are summarized on the borehole logs provided in Appendix C.

Measures were taken in the field and during transport to preserve sample integrity prior to chemical analysis. Recommended volumes of soil samples selected for chemical analysis were collected from the recovered cores into pre-cleaned, laboratory-supplied glass sample jars/vials identified for the specified analytical test group.

All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory, AGAT Laboratories (AGAT), of Mississauga, Ontario. The samples were transported/submitted within the acceptable holding time to AGAT following Chain of Custody protocols for chemical analysis.

Decontamination and other protocols were followed during sample collection and handling to minimize the potential for sample cross-contamination. New disposable nitrile gloves were used for the handling and sampling of each retrieved soil core. The sampling equipment was decontaminated between sampling intervals by the drilling contractor using a potable water/phosphate-free detergent solution followed by rinses with potable water and de-ionized water. Wash and rinse waters were collected in sealed, labeled containers. Drill cuttings were placed in labeled, sealed drums upon completion of sampling pending disposal.

Soil samples submitted for specific chemical analysis were selected on the basis of visual inspection of the recovered cores, sample location and/or depth interval. The rationale for soil sample submission is presented in Table 2.

Geologic details of the soil cores recovered from the boreholes advanced at the Site are provided in finalized boreholes logs presented in Appendix C.

Field duplicate soil samples were collected and analyzed for Quality Assurance/Quality Control (QA/QC) purposes. See Section 5.14 of this report for further details.

5.5 Soil: Field Screening Measurements

A portion of each soil sample was placed in a sealed plastic bag and allowed to reach ambient temperature prior to field screening using an RKI Eagle calibrated with hexane (H) and isobutylene (I). The measurements were made by inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These readings provide a real-time indication of the relative concentration of vapours encountered in the subsurface during drilling and are used to aid in the assessment of the vertical and horizontal extent of contamination and the selection of soil samples for analysis; samples with the highest PID readings were selected for submission to AGAT for chemical analysis of VOCs or PHCs. Prior to use in the field, the Eagle 2 was calibrated by Spectra Scientific and a copy of the calibration was provided with the instrument. Additionally, an ambient air reading of zero ppm was observed confirming the PID's proper operation. Each sample was additionally examined for visual, textural and olfactory classification at the time of sampling. The field screening measurements, in parts per million (ppm) isobutylene equivalents, are presented on the borehole logs in Appendix C.

5.6 Groundwater: Monitoring Well Installation

The purpose of the monitoring well installation program was to characterize groundwater quality, determine hydraulic gradients and hydraulic conductivity. The monitoring wells were installed in general accordance with Reg. 903/90 and were installed by ALTECH.

Three (3) of the boreholes (BH/MW-1S, BH/MW-2 and BH/MW-4S), advanced on-Site between January 12th and 20th, 2023, were instrumented with a monitoring well for environmental purposes, in order to assess the groundwater quality at the Site. The monitoring wells were installed at depths of 4.57 m bgs. The monitoring wells consisted of a 3 m length, 51 mm diameter number 10 slot size (0.25 mm) PVC well screens and Schedule 40 PVC riser pipe. All pipe connections were factory machined threaded flush couplings. The annular space around the wells was backfilled with silica sand to an average height of 0.6 m above the top of the screen. A bentonite seal was added from the top of the sand pack to approximately 0.3 m below ground surface. The monitoring wells were completed with a protective flush-mount well casing.

EXP continuously monitored the well installation activities. Well installation details are summarized in Table 4 and on the borehole logs provided in Appendix C.

When the monitoring wells are no longer required, they must be decommissioned in accordance with the procedure outlined in Reg. 903/90.

Measures taken to minimize the potential for cross contamination or the introduction of contaminants during well construction included:

- The use of well pipe components (e.g. riser pipe and well screens) with factory machined threaded flush coupling joints;
- Construction of wells without the use of glues or adhesives;
- Removing the protective plastic wraps from well components at borehole insertion to prevent contact with the ground and other surfaces; and,
- Cleaning of augers between sampling locations.

5.7 Groundwater: Monitoring Well Development

Upon completion of monitoring well installation, the monitoring wells were developed to remove fine sediment particles from the sand pack and enhance hydraulic communication with the surrounding formation waters.

BH/MW-1S, BH/MW-2 and BH/MW-4S were developed on January 20th, 2023, using dedicated inertial tubing and foot valves to disturb the water column and recover groundwater containing dislodged sediment particles.

In addition, groundwater monitoring activities were also conducted on each of the monitoring wells which consisted of measuring the depth to groundwater in each monitoring well so that groundwater flow and direction below the Site could be assessed. Water levels were measured with respect to the top of the casing by means of an electronic water level meter. The water level measurements were recorded on water level log sheets or in a bound field notebook. The water level meter probe was decontaminated between monitoring well locations.

Equipment used during groundwater monitoring was thoroughly cleaned and decontaminated between wells. Well purging details were documented on a log sheet or in a bound hard cover notebook.

5.8 Groundwater: Field Measurements of Water Quality Parameters

Prior to collecting groundwater samples, field measurements of water quality parameters were recorded from the three (3) monitoring wells used for environmental purposes (BH/MW-1S, BH/MW-2 and BH/MW-4S) and sampled utilizing low flow

purging and sampling methodologies. Groundwater was purged from each location using a peristaltic pump and dedicated LDPE tubing. Field measurements of dissolved oxygen concentration, electrical conductivity, oxidation-reduction potential, pH, temperature, turbidity and water levels were recorded at three (3) minute intervals during the purging activities using a pre-calibrated multi probe water quality meter, a turbidity meter and a water level meter. Groundwater was considered to be chemically stable when the pH measurements of three (3) successive readings agreed to within ± 1 pH units, the specific conductance within ± 10%, and the temperature within ± 10%. The multi-meter electrodes were calibrated prior to receipt of the meter by the supplier using in-house reference standards.

5.9 Groundwater: Sampling

Groundwater samples were collected from the newly installed monitoring wells (BH/MW-1S, BH/MW-2, and BH/MW-4S) on January 24th, 2023. The groundwater sampling conducted during the completion of this Phase Two ESA was generally undertaken in accordance with the SAP presented in Appendix A.

Upon completion of purging activities, groundwater samples were collected from monitoring wells. Recommended groundwater sample volumes were collected into pre-cleaned laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. The samples were placed in an insulated cooler pre-chilled with ice immediately upon collection. Samples for VOCs and PHCs including BTEX analysis were collected in triplicate vials prepared with concentrated sodium bisulphate as a preservative. Each VOC/PHC vial was inverted and inspected for gas bubbles prior to being placed in the cooler to ensure that no headspace was present in the samples.

All groundwater samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory, AGAT. The samples were transported/submitted following appropriate holding time requirements following AGAT Chain of Custody protocols for chemical analysis.

Decontamination and other protocols were followed during sample collection and handling to minimize the potential for sample cross-contamination. New disposable nitrile gloves were used at each monitoring well location.

Groundwater samples submitted for specific chemical analysis were selected on the basis of sample location and/or depth interval. The rationale for groundwater sample submission is presented in Table 5.

Appropriate QA/QC samples were collected during groundwater sampling, including field duplicate samples and trip blanks, where required, as presented in Table 5.

5.10 Sediment Sampling

As no water body was present at the Site, sediment sampling was not part of the Phase Two ESA.

5.11 Analytical Testing

The contractual laboratory selected to perform all chemical analyses was AGAT. AGAT is an accredited laboratory under the Standards Council of Canada/Canadian Association of Laboratory Accreditation (CALA), Accredited Laboratory No. 97 and No. A3200, respectively, in accordance with ISO/IEC 17025:2005 – "General Requirements for the Competence of Testing and Calibration Laboratories".

5.12 Elevation Survey

An elevation survey was conducted during the Phase Two ESA investigative activities, with the purpose of obtaining relative vertical control of the monitoring well locations. The top of pipe and ground surface elevations of each monitoring well were surveyed in reference to a geodetic benchmark provided on the topographic survey plan: Topographic Survey Plan prepared by R.A McLaren, O.L.S – A.T. McLaren Limited under Reference No. 36830, dated June 6, 2022.

5.13 Quality Assurance and Quality Control Measures

Quality Control/Quality Assurance measures, as set out in the Sampling and Analysis Plan, were implemented during sample collection, storage and transport to provide accurate data representative of conditions in the surficial and upper overburden soils and the water table aquifer. The QA/QC measures included decontamination procedures to minimize the potential for sample cross contamination, the execution of standard operating procedures to collect representative and unbiased samples, the collection of quality control samples to evaluate sample precision and accuracy, and the implementation of measures to preserve sample integrity.

Decontamination protocols were followed during sample collection and handling to minimize the potential for cross-contamination. During the collection of soil samples, split-spoon and dual tube samplers were scraped and decontaminated between sampling intervals by washing with a potable water/phosphate-free detergent solution followed by a rinse with potable water. New disposable nitrile gloves were used for the handling and collection of samples from each soil core and for sample collection from each borehole.

Soil samples selected for chemical analyses were collected from the retrieved soil cores and placed directly into pre-cleaned, laboratory-supplied glass jars or vials. Sample volumes were consistent with analytical test group requirements as specified by the receiving laboratory.

Groundwater samples were collected into pre-clean laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. Recommended analytical test group specific sample volumes were collected as specified by the contractual laboratory. Sample vials for analysis of PHC F1 (BTEX) and VOCs were inspected for the presence of gas bubbles and the presence of head space, where volatiles may partition into.

Measures were followed to preserve sample integrity between collection and receipt by the contractual laboratory. All samples, both soil and groundwater, immediately upon collection were placed in insulated coolers pre-chilled with ice for storage and transport to the contractual laboratory. Samples were received by the contractual laboratory within specific analytical test group holding time requirements.

Documentation procedures were followed to confirm sample identification and tracked sample movement. Each sample was assigned a unique identification ID number, which was recorded along with the date, time of sampling and requested analyses on labels affixed to the sampling containers, and in a bound field notebook. Chain of Custody protocols were followed to track sample handling and movement until receipt by the contractual laboratory. Field QA/QC samples were collected during the soil and groundwater sampling. Duplicate samples were collected to evaluate sampling precision to evaluate the potential for sample cross-contamination during handling and transport.

One (1) duplicate soil sample (BH-2 SS22) was collected from BH/MW-2 and submitted for analysis of PHCs and BTEX. One (1) duplicate groundwater sample (Duplicate 1) was collected from monitoring well BH/MW-4S and submitted for analysis of PHCs and BTEX. One (1) duplicate groundwater sample (Duplicate 1) was collected from monitoring well BH/MW-4S and submitted for analysis of Metals. Additionally, one (1) trip blank sample was analyzed for PHCs F1 and BTEX.

6 Review and Evaluation

6.1 Geology

The soil investigation conducted at the Site for the environmental assessment consisted of the advancement of four (4) boreholes into the underlying fill / reworked native, and native materials, to a maximum depth between 2.13 and 6.10 m bgs. The borehole logs describing geologic details of the soil cores recovered during the Site drilling activities are presented in Appendix C. Boundaries of soil indicated on the log sheets are intended to reflect transition zones for the purpose of environmental assessment and should not be interpreted as exact planes of geological change.

The general stratigraphy at the Site, as observed in the boreholes; consisted of asphalt (overlying sandy gravel fill) or surficial topsoil in all boreholes, underlain by reworked native and/or native sand materials. The reworked native material extended to depths of approximately 1.0 and 2.13 m bgs. Native material was encountered in all boreholes, with the exception of BH-5. The underlying native soil consisted of sand overlying till deposits. Red shale bedrock of the Queenston Formation was encountered underlying the native till at depths ranging from approximately 5.33 to completion depth at 6.10 m bgs. A brief description of the soil stratigraphy at the Site, in order of depth, is summarized in the following sections. Refer to borehole logs provided in Appendix C for details of soil stratigraphy.

6.1.1 Surface Material

Asphalt pavement was encountered at BH/MW-1S, BH/MW-2 and BH/MW-4S, measuring approximately 80 to 100 mm and overlying approximately 80 to 150 mm of sandy gravel fill. BH-5 was advanced through topsoil approximately 150 mm thick.

6.1.2 Fill Material

Reworked native material was encountered in each of the boreholes below the sandy gravel fill and topsoil. The reworked native material extended to depths ranging between approximately 1.0 to 2.13 m bgs. The reworked native material consisted of either silty sand (BH/MW-1S, BH/MW-2 and BH/MW-4S); with trace clay/gravel.

Fill materials were encountered at BH-5 and consisted of sand, and some silt, with trace gravel, brick and rootlets. BH-5 was terminated within the fill material based on the scope of the investigation at that location.

6.1.3 Native Material

Native sand overlying till deposits was encountered in BH/MW-1S, BH/MW-2 and BH/MW-4S. The sand extended to depths ranging from approximately 2.29 to 3.05 m bgs. Silty clay till with trace sand and gravel, sand seams, and trace shale fragments/inclusions was encountered in BH/MW-1S and extended to 5.40 m bgs. Silty sand to sandy silt till with trace gravel and shale fragments was encountered in BH/MW-2 and extended 5.33 m bgs. Silt till with some sand/clay and trace gravel was encountered in BH/MW-4S and extended to 6.10 m bgs. Three (3) boreholes (BH/MW-1S, BH/MW-2 and BH/MW-4S) extended to the shale bedrock.

6.1.4 Bedrock

Red shale bedrock of the Queenston Formation was encountered underlying the till deposits at each of the boreholes, with the exception of BH-5, with depths ranging from 5.33 to 6.10 m below grade. The bedrock was confirmed by coring as part of the concurrent geotechnical and hydrogeological investigations.

6.2 Groundwater: Elevations and Flow Direction

The monitoring well network advanced as part of this Phase Two ESA consisted of three (3) newly installed monitoring wells (BH/MW-1S, BH/MW-2, and BH/MW-4S). The three (3) wells were screened between 1.52 and 4.57 m bgs, within the native

sand and silty clay and/or sand till layer. Groundwater levels were measured on January 31st, 2023. The groundwater levels and corresponding elevations are summarized in Table 6, and presented in the borehole logs provided in Appendix C.

Based on the groundwater contour map delineated for the Site, on-Site groundwater appears to be to the southeast. A groundwater contour map is presented in Figure 6.

EXP notes that the direction of localized groundwater flow is significantly influenced by disturbed soil (fill) and underground utilities within the Site. As such, the measured groundwater flow direction may not be representative of the regional area.

6.2.1 Groundwater: Hydraulic Conductivity

Hydraulic conductivity testing was completed during the Hydrogeological Investigation (EXP, 2023; provided under separate cover) in the overburden. Three (3) Single Well Response Tests (SWRT's) were completed on monitoring wells BH/MW-1D, BH/MW-3, and BH/MW-4D on January 31st, 2023. It is noted that the geologic unit intercepted by the well screen was shale bedrock.

The highest K-value of the tested water-bearing zone was $1.225x10^{-05}$ m/s (BH/MW4D), and the geometric mean of the K-values was $3.0x10^{-06}$ m/s.

6.2.2 Groundwater: Horizontal Hydraulic Gradients

The horizontal hydraulic gradient, between each monitoring well pair, is calculated using the following equation:

$i = \Delta h/\Delta s$

Where,

i = horizontal hydraulic gradient;

Δh (m) = groundwater elevation difference; and,

Δs (m) = separation distance.

The horizontal hydraulic gradient on Site was calculated as 0.005 m/m (between BH/MW-1S and BH/MW-2) and 0.001 m/m (between BH/MW-2 and BH/MW-4S).

6.3 Soil Texture

Based on the 75-micron sieve of representative soil, the soil texture at the Site was determined to be coarse textured soils within the native soils (refer to Appendix G).

6.4 Soil Field Screening

Total Organic Vapor (TOV) readings from each sample interval were measured for soil sample selected for BTEX/PHC and VOC analysis from all advanced boreholes. Vapour concentrations readings collected during subsurface drilling were measured using the RKI Eagle 2 in ppm calibrated with isobutylene and hexane or equivalent. The vapour readings, in ppm, are provided on the borehole logs in Appendix C.

Soil samples submitted for chemical analysis were selected on the basis of visual inspection of the recovered cores, TOV readings, sample location and/or depth interval. Both hexane and isobutylene readings indicate that there are insignificant volatile particles in the soil vapours.

6.5 Soil Quality

In accordance with the scope of work, chemical analyses were performed on selected soil samples recovered from the boreholes. The selection of representative "worst case" soil samples was based on field screening, visual and/or olfactory evidence of impacts and the presence of potential water bearing zones. Copies of the laboratory Certificates of Analysis for the analyzed soil samples are provided in Appendix E. The locations of the soil samples are shown on Figures 7 through 11.

6.5.1 Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)

Seven (7) soil samples, including one (1) field duplicate sample (BH-2 SS22; field duplicate of BH/MW-2), was analyzed for PHCs including BTEX. The results of the analysis together with the applicable Table 2 SCS are presented in Table D-1 in Appendix D.

As shown in Table D-1, PHCs including BTEX were not detected above the laboratory Reporting Detection Limits (RDLs).

6.5.2 Polycyclic Aromatic Hydrocarbons (PAHs)

Three (3) soil samples were analyzed for PAHs. The results of the analysis together with the applicable Table 2 SCS are presented in Table D-2 in Appendix D.

As shown in Table D-2, PAHs were not detected above the laboratory RDLs.

6.5.3 Metals and Hydride-Forming Metals

Four (4) soil samples were analyzed for Metals and hydride-forming metals. The results of the analysis together with the applicable Table 2 SCS are presented in Table D-3 in Appendix D.

As shown in Table D-3, Metals and hydride-forming metals were either not detected above laboratory RDLs or detected below the applicable Table 2 SCS.

6.5.4 Other Regulated Parameters (ORPs)

Three (3) soil samples were analyzed Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR). The results of the analysis together with the applicable Table 2 SCS are presented in Table D-4 in Appendix D.

As shown in Table D-4, EC and SAR was either not detected at laboratory RDLs, or detected below the applicable Table 2 SCS; with the exception of BH2 SS1, which exceeded Table 2 SCS for EC and SAR. The laboratory RDLs were below the Table 2 SCS.

It is the QP's opinion that the elevated concentrations of EC and SAR are associated with de-icing activities in the winter months for the safety of the public and vehicular traffic. As such, they are not considered to be in excess of the Table 2 SCS for the purposes of filing a RSC based on the exemption outlined in Section 49.1 of O.Reg. 153/04, and; EC and SAR are not considered as COCs for the Site.

6.5.5 Soil pH

The Table 2 SCS criteria are applicable if soil pH is in the range of 5 to 9 for surface soil (less than 1.5 m below soil surface) and 5 to 11 for subsurface soil (greater than 1.5 m below soil surface).

A total of two (2) samples were submitted for pH. The reported pH values were 8.06 for surface soils and 7.74 for subsurface soils, across the investigation, which are within the acceptable range to use the Table 2 SCS. The results of the analysis together with the applicable Table 2 SCS are presented in Table D-4 in Appendix D.

6.5.6 Polychlorinated Biphenyls (PCBs)

Two (2) soil samples were analyzed for PCBs. The results of the analysis together with the applicable Table 2 SCS are presented in Table D-5 in Appendix D.

As shown in Table D-5, PCBs were not detected at laboratory RDLs. The laboratory RDLs were below the Table 2 SCS.

6.5.7 Chemical Transformation and Soil Contaminant Sources

There are no concentrations of the chemical constituents of soil present on the property that are above the applicable Table 2 SCS. Therefore, chemical and biological transformations may not be expected in quantities of regulatory relevance in the areas where exceedance was observed.

6.5.8 Evidence of Non-Aqueous Phase Liquid

Inspection of the soil cores retrieved from the boreholes did not indicate the presence of non-aqueous phase liquid (NAPL), staining or sheen.

6.6 Groundwater Quality

In accordance with the scope of work, chemical analyses were performed on groundwater samples recovered from the monitoring wells. The selection of groundwater samples was based on location and/or screen depth. Copies of the laboratory Certificates of Analysis for the analyzed groundwater samples are provided in Appendix E. A summary of the analytical results for the groundwater samples, including the locations of each sample, well screen interval depth, a comparison of parameter concentrations against applicable SCS, and the identification of the PCOCs, are provided in Appendix D. The locations of the groundwater samples are shown on Figures 12 through 14.

6.6.1 Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)

Five (5) groundwater samples, including one (1) field duplicate sample (Duplicate 1, field duplicate of BH/MW-4S) and one (1) QA/QC Trip Blank sample, was analyzed for PHCs including BTEX. The results of the analysis together with the applicable Table 2 SCS are presented in Table D-6 in Appendix D.

As shown in Table D-6, PHCs including BTEX were not detected above the laboratory RDLs.

6.6.2 Metals (Including Hydride-Forming Metals)

Three (3) groundwater samples, including one (1) field duplicate sample, was analyzed for Metals. The results of the analysis together with the applicable Table 2 SCS are presented in Table D-7 in Appendix D.

As shown in Table D-7, Metals were either not detected above the laboratory RDLs, or were detected below the applicable Table 2 SCS.

6.6.3 Polychlorinated Biphenyls (PCBs)

One (1) groundwater sample was analyzed for PCBs. The results of the analysis together with the applicable Table 2 SCS are presented in Table D-8 in Appendix D.

As shown in Table D-8, PCBs were not detected above the laboratory RDLs.

6.6.4 Chemical Transformation and Contaminant Sources

No groundwater impacts were identified in all monitoring wells.

6.6.5 Evidence of Non-Aqueous Phase Liquid (NAPL)

No evidence of NAPL was observed during groundwater monitoring, purging and sampling activities.

6.7 Sediment Quality

As no surface water body was located on-Site, the Phase Two ESA did not include sediment sampling.

6.8 Quality Assurance and Quality Control Measures

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 overburden and bedrock materials, and water table units at the Site.

Review of field activity documentation indicated that recommended sample volumes were collected from soil and groundwater for each analytical test group into appropriate containers and preserved with proper chemical reagents in accordance with the protocols set out in the "Protocol for Analytical Methods used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" (MECP, 2004). Samples were preserved at the required temperatures in pre-chilled insulated coolers and met applicable holding time requirements, when relinquished to the receiving laboratory.

One (1) duplicate soil sample (BH-2 SS22) was collected from BH/MW-2 and submitted for analysis of PHCs including BTEX. One (1) duplicate groundwater sample (Duplicate 1) was collected from monitoring well BH/MW-4S and submitted for analysis of PHCs including BTEX and Metals. Additionally, one (1) trip blank sample was analyzed for PHCs F1 and BTEX.

The field duplicate sample results were quantitatively evaluated by calculating the relative percent difference (RPD). Assessment of the duplicate soil and groundwater sample showed that the results generally met analytical test group specific acceptance criteria. The overall assessment indicates that the soil and groundwater samples were collected with an acceptable level of precision, and the data is acceptable quality for meeting the objectives of the Phase Two ESA.

The laboratory RDLs met the Table 2 SCS.

The contractual laboratory selected to perform the chemical analyses was AGAT, of Mississauga, ON. AGAT is an accredited laboratory under the Standards Council of Canada/Canadian Association of Laboratory Accreditation (Accredited Laboratory No. 97 and No. A3200, respectively) in accordance with ISO/IEC 17025:2005 – "General Requirements for the Competence of Testing and Calibration Laboratories". Certificates of Analysis were received from AGAT reporting the results of all the chemical analyses performed on the submitted soil and groundwater samples. Copies of the Certificates of Analysis are provided in Appendix E. Review of the Certificates of Analysis, prepared by AGAT, indicates that they were in compliance with the requirements set out under subsection 47(3) of O. Reg. 153/04.

The analytical program conducted by AGAT included analytical test group specific QA/QC measures to evaluate the accuracy and precision of the analytical results and the efficiency of analyte recovery during solute extraction procedures. The laboratory QA/QC program consisted of the preparation and analysis of laboratory duplicate samples to assess precision and sample homogeneity, method blanks to assess analytical bias, spiked blanks and QC standards to evaluate analyte recovery, matrix spikes to evaluate matrix interferences and surrogate compound recoveries (VOCs only) to evaluate extraction efficiency. The laboratory QA/QC results are presented in the Quality Assurance Report provided in the Certificate of Analysis prepared by AGAT. The QA/QC results are reported as percent recoveries for matrix spikes, spike blanks and QC standards, relative percent difference for laboratory duplicates and analyte concentrations for method blanks. The QA/QC results were assessed against test group control limits in the case of spiked blanks, matrix spikes and surrogate recoveries and alert criteria in the case of method blanks and laboratory duplicates. Review of the laboratory QA/QC results reported by AGAT indicated that they were within acceptable control limits or below applicable alert criteria for the sampled media and analytical test

groups. Based on the assessment of the QA/QC, the analytical results reported are of acceptable quality and data qualifications are not required.

6.9 Phase Two Conceptual Site Model

This section presents a Phase Two Conceptual Site Model (CSM) providing a narrative, graphical and tabulated description integrating information related to the Site geologic and hydrogeologic conditions, areas of potential environmental concern/potential contaminating activities, the presence and distribution of potential contaminants of concern, contaminant fate and transport, and potential exposure pathways. The Phase Two CSM was completed in accordance with O. Reg. 153/04 as defined by the MECP and is presented in Appendix F.

7 Conclusions

The results and findings of the Phase Two ESA conducted at the Site are summarized as follows:

7.1 Site Characterization

- Seven (7) boreholes were advanced by ALTECH between January 12th and 20th, 2023. Of the seven (7) boreholes, four (4) boreholes were used utilized for environmental purposes and drilled to a maximum depth between of 2.13 and 6.1 metres below ground surface (m bgs). The other three (3) remaining boreholes were advanced to approximately 13 m bgs.
- The general stratigraphy at the Site, as observed in the boreholes; consisted of asphalt (overlying sandy gravel fill) or surficial topsoil in all boreholes, underlain by reworked native and/or native sand materials. The reworked native material extended to depths of approximately 1.0 and 2.13 m bgs. Native material was encountered in all boreholes, with the exception of BH-5. The underlying native soil consisted of sand overlying till deposits. Red shale bedrock of the Queenston Formation was encountered underlying the native till at depths ranging from approximately 5.33 to completion depth at 6.10 m bgs.
- The monitoring well network advanced as part of this Phase Two ESA consisted of three (3) newly installed monitoring wells (BH/MW-1S, BH/MW-2, and BH/MW-4S). The three (3) were screened between 1.52 and 4.57 m bgs, within the native sand and silty clay and/or sand till layer. Based on the groundwater contour map delineated for the Site, on-Site groundwater flow is to the southeast (Figure 6).EXP notes that the direction of localized groundwater flow is significantly influenced by disturbed soil (fill), railway tracks, and underground utilities within the Site. As such, the measured groundwater flow direction may not be representative of the regional area.
- The horizontal hydraulic gradient on Site was calculated as 0.005 m/m (between BH/MW-1S and BH/MW-2) and 0.001 m/m (between BH/MW-2 and BH/MW-4S).

7.2 Whether Environmental Conditions were Met

- Soil samples were submitted for the analysis of Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), Metals, Polycyclic Aromatic Hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and Other Regulated Parameters (ORPs).
    - The reported pH values were 8.06 for surface soils and 7.74 for subsurface soils, across the investigation, which are within the acceptable range to use the Table 2 SCS.
    - All parameters analyzed were either not detected at laboratory RDLs, or detected below the applicable Table 2 SCS, with the exception of BH-2 SS1, which exceeded Table 2 SCS for Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR).
    - It is the QP's opinion that the elevated concentrations of EC and SAR are associated with de-icing activities in the winter months for the safety of the public and vehicular traffic. As such, they are not considered to be in excess of the Table 2 SCS for the purposes of filing a RSC based on the exemption outlined in Section 49.1 of O.Reg. 153/04, and EC and SAR are not considered as COCs for the Site.
- Groundwater samples were submitted for the analysis of PHCs including BTEX, Metals and PCBs.
    - All parameters analyzed were either not detected at laboratory RDLs, or detected below the Table 2 SCS.
- No evidence of free product (i.e. visible film or sheen), or odor was observed during soil sampling, groundwater purging, or groundwater sampling activities.

Based on the findings of the Phase Two ESA, no further work is recommended at this time and as such, a Record of Site Condition may be filed.

8 General Limitations

The information presented in this report is based on a limited investigation designed to provide information to support an assessment of the current environmental conditions within the subject property. The conclusions and recommendations presented in this report reflect Site conditions existing at the time of the investigation.

More specific information with respect to the conditions between samples, or the lateral and vertical extent of materials may become apparent during excavation operations. The interpretation of the borehole information must, therefore, be validated during any such excavation operations. Consequently, during the future development of the property, conditions not observed during this investigation may become apparent. Should this occur, EXP Services Inc. should be contacted to assess the situation, and the need for additional testing and reporting. EXP has qualified personnel to provide assistance in regards to any future geotechnical and environmental issues related to this property.

The environmental investigation was carried out to address the intent of applicable provincial Regulations, Guidelines, Policies, Standards, Protocols and Objectives administered by the Ministry of the Environment. It should also be noted that current environmental Regulations, Guidelines, Policies, Standards, Protocols and Objectives are subject to change, and such changes, when put into effect, could alter the conclusions and recommendations noted throughout this report. Achieving the study objectives stated in this report has required us to arrive at conclusions based upon the best information presently known to us. No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable level. Professional judgment was exercised in gathering and analyzing information obtained and in the formulation of the conclusions. Like all professional persons rendering advice, we do not act as absolute insurers of the conclusions we reach, but we commit ourselves to care and competence in reaching those conclusions.

Our undertaking at EXP, therefore, is to perform our work within limits prescribed by our clients, with the usual thoroughness and competence of the engineering profession. It is intended that the outcome of this investigation assist in reducing the client's risk associated with environmental impairment. Our work should not be considered 'risk mitigation'. No other warranty or representation, either expressed or implied, is included or intended in this report.

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9 Closure

We trust this report is satisfactory for your purposes. Should you have any questions, please do not hesitate to contact this office.

Yours truly,

EXP Services Inc.



Kelsey Proks, B.Sc.
Environmental Specialist
Environmental Services



Jennifer Hayman, P.Geo., QP^{ESA}
Senior Project Manager
Environmental Services

10 References

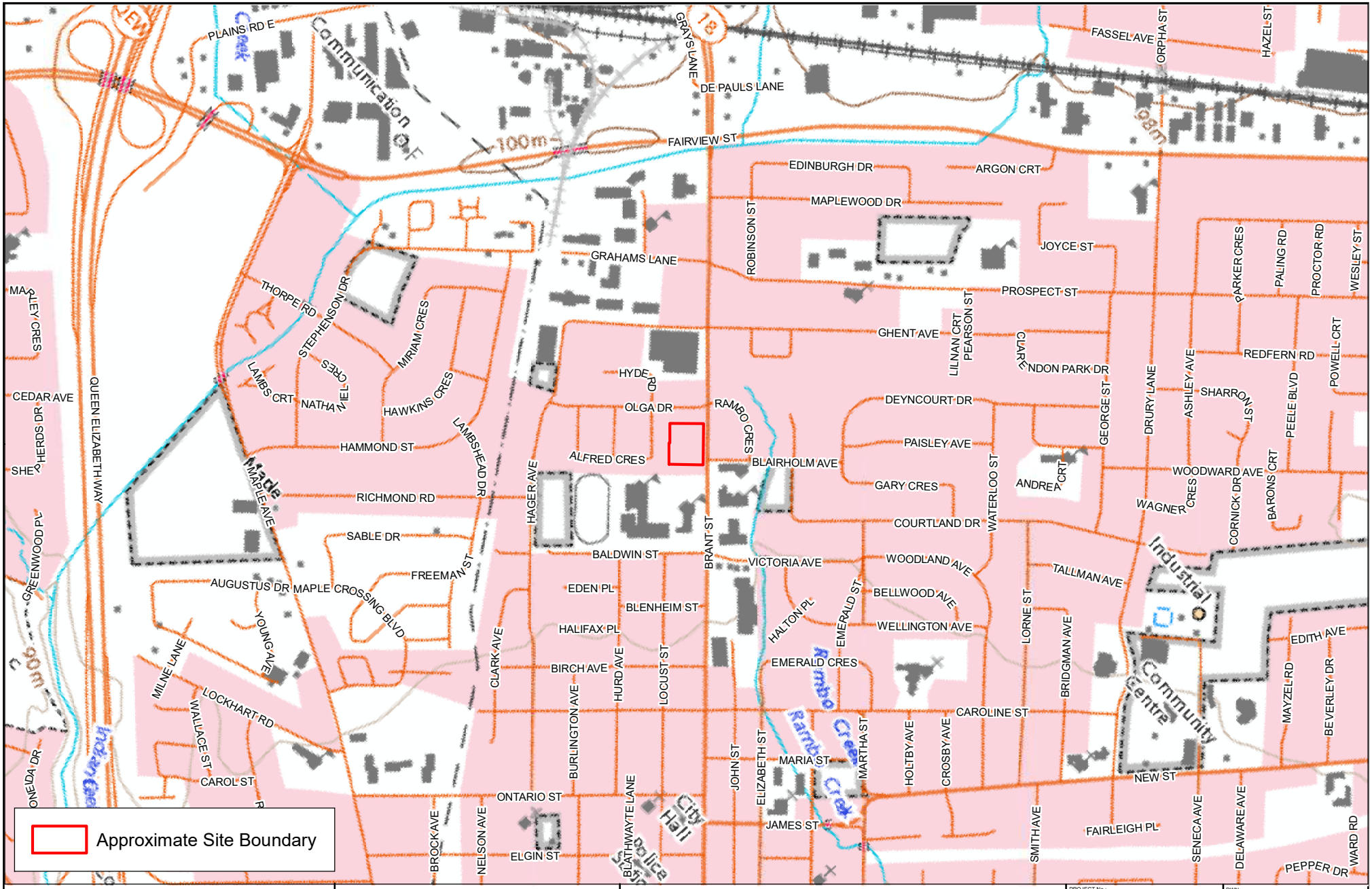
This study was conducted in general accordance with the applicable Regulations, Guidelines, Policies, Standards, Protocols and Objectives administered by the Ministry of the Environment. Specific reference is made to the following:

1. Canadian Standards Association [CSA] (2000) Z769-00, Phase II Environmental Site Assessment. Canadian Standards Association, March 2000.
2. Environmental Protection Act, R.S.O. 1990, Chapter E.19, as amended, September 2004.
3. First Base Solutions [FBS] (2011) VuMap. First Base Solutions. Available online at: http://vumap.firstbasesolutions.com/index.php.
4. Ministry of the Environment and Climate Change [MECP] (1996) Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario. Ontario Ministry of the Environment, December 1996.
5. MECP (2011a) Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Ontario Ministry of the Environment, March 2004, amended as of July 1, 2011.
6. MECP (2011) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Ontario Ministry of the Environment, April 15, 20101.
7. Ontario Regulation 153/04, made under the Environmental Protection Act, May 2004, amended.
8. Ontario Water Resources Act – R.R.O. 1990, Regulation 903, amended.
9. Bedrock Geology of Southern Ontario, Southern Sheet, Ministry of Northern Development and Mines, 1991.

Previous Environmental Investigation Reports include:

10. “Phase One Environmental Site Assessment – 688, 694 and 698 Brant Street, Burlington, Ontario” dated February 2023, was prepared for Elite 688 Brant Holdings Inc., by EXP Services Inc.
11. “Preliminary Geotechnical Investigation Report (Draft) 688 Brant Street Burlington, Ontario”, prepared by EXP Services Inc. for Elite Developments on November 25, 2021.

Figures



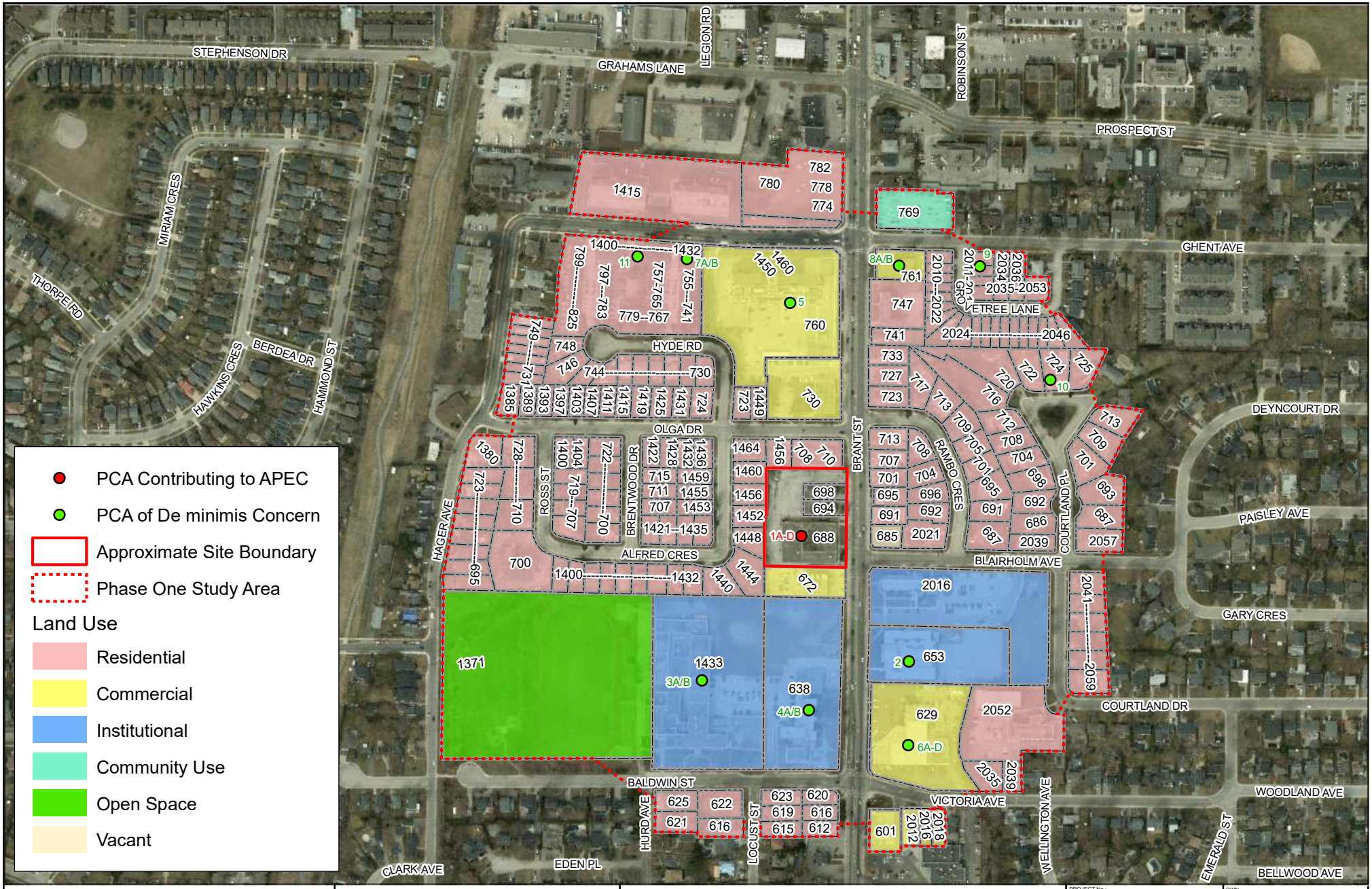
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TITLE AND LOCATION:

SITE LOCATION PLAN
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 1



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TITLE AND LOCATION:

PHASE ONE STUDY AREA, SURROUNDING LAND USE AND POTENTIALLY CONTAMINATING ACTIVITIES

Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 2



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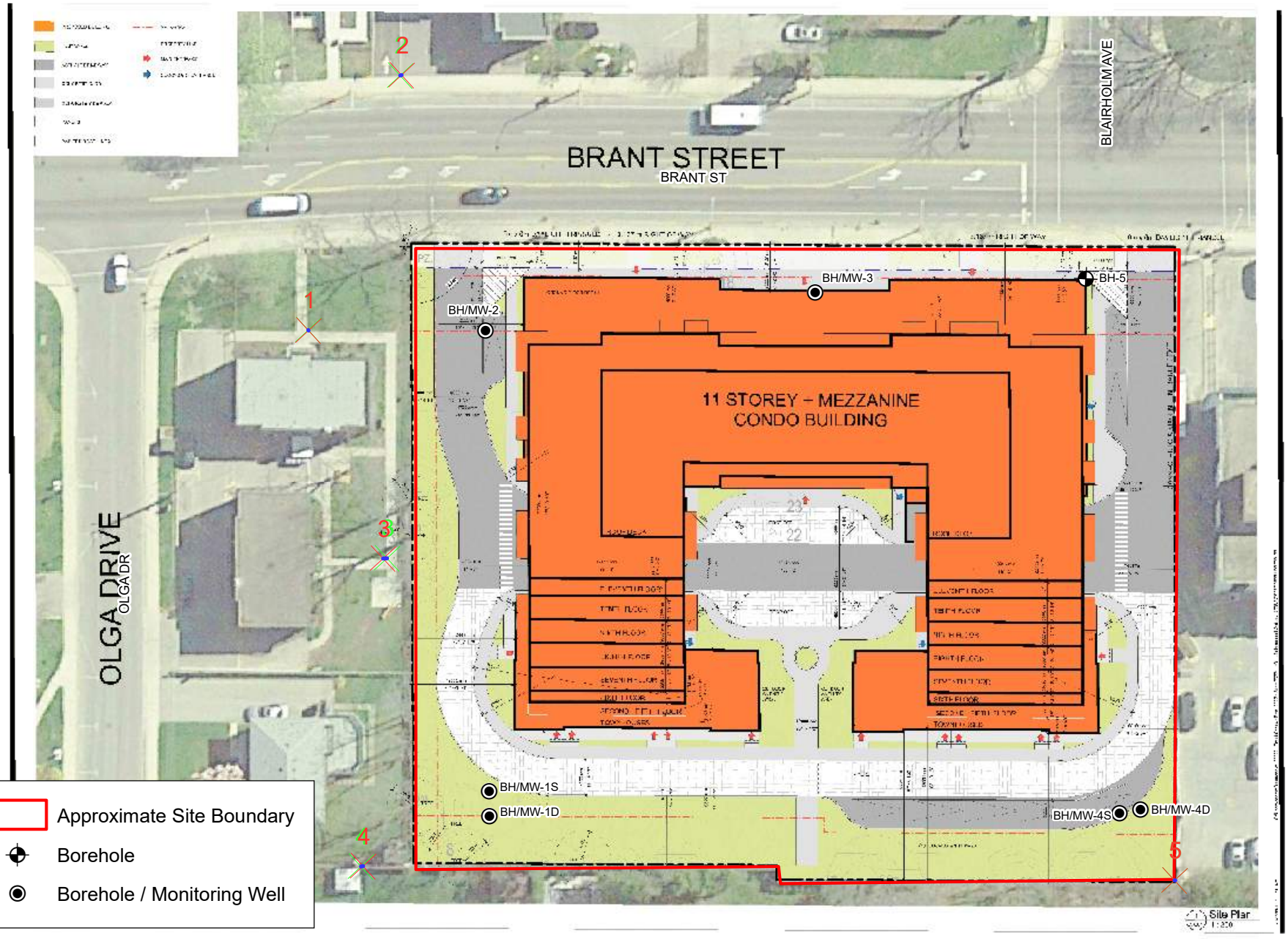
PROJECT TRUE N

0 10 20 30 40 50 m

TITLE AND LOCATION:

SITE PLAN
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 3



BRANT CONDOS

SITE PLAN

A.001

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TRUE
PROJECT
N

0 6 12 18 24 30 m

TITLE AND LOCATION:

PROPOSED DEVELOPMENT PLAN
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 3A



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PROJECT
TRUE
N

0 10 20 30 40 50 m

TITLE AND LOCATION:

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 4



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PROJECT N TRUE

0 10 20 30 40 50 m

TITLE AND LOCATION:

BOREHOLE/MONITORING WELL LOCATION PLAN
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 5A



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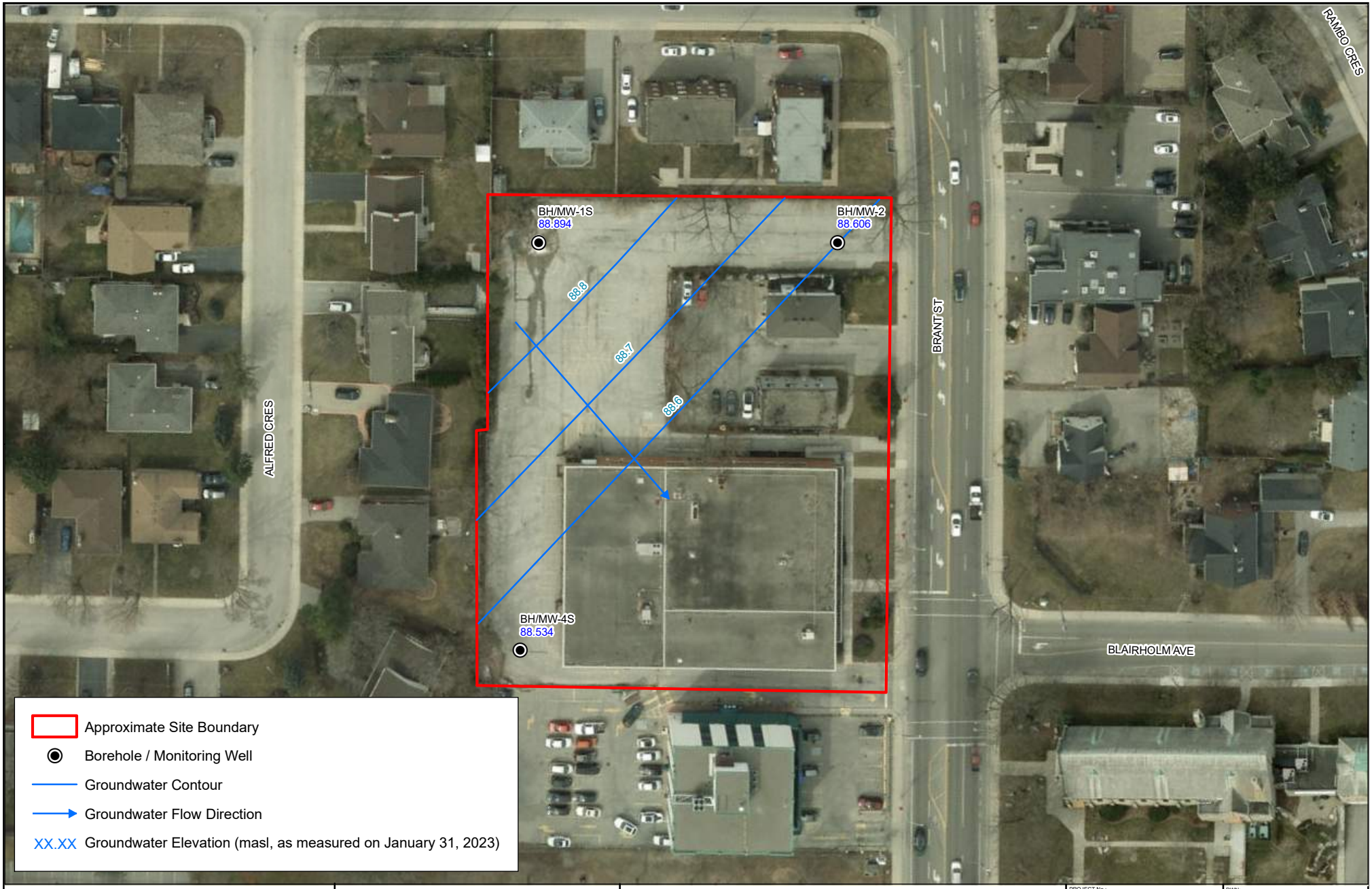
PROJECT TRUE N

0 10 20 30 40 50 m

TITLE AND LOCATION:

BOREHOLE/MONITORING WELL
LOCATION PLAN and APECs
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 5B



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PROJECT
TRUE
N

0 10 20 30 40 50 m

TITLE AND LOCATION:

GROUNDWATER CONTOUR PLAN
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 6



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PROJECT
TRUE
N

0 10 20 30 40 50 m

TITLE AND LOCATION:

SOIL ANALYTICAL RESULTS - PHCs and BTEX
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 7



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PROJECT
TRUE
N

0 10 20 30 40 50 m

TITLE AND LOCATION:
SOIL ANALYTICAL RESULTS - POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 8



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PROJECT
TRUE
N

0 10 20 30 40 50 m

TITLE AND LOCATION:
SOIL ANALYTICAL RESULTS - METALS (INCLUDING HYDRIDE-FORMING METALS)
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 9



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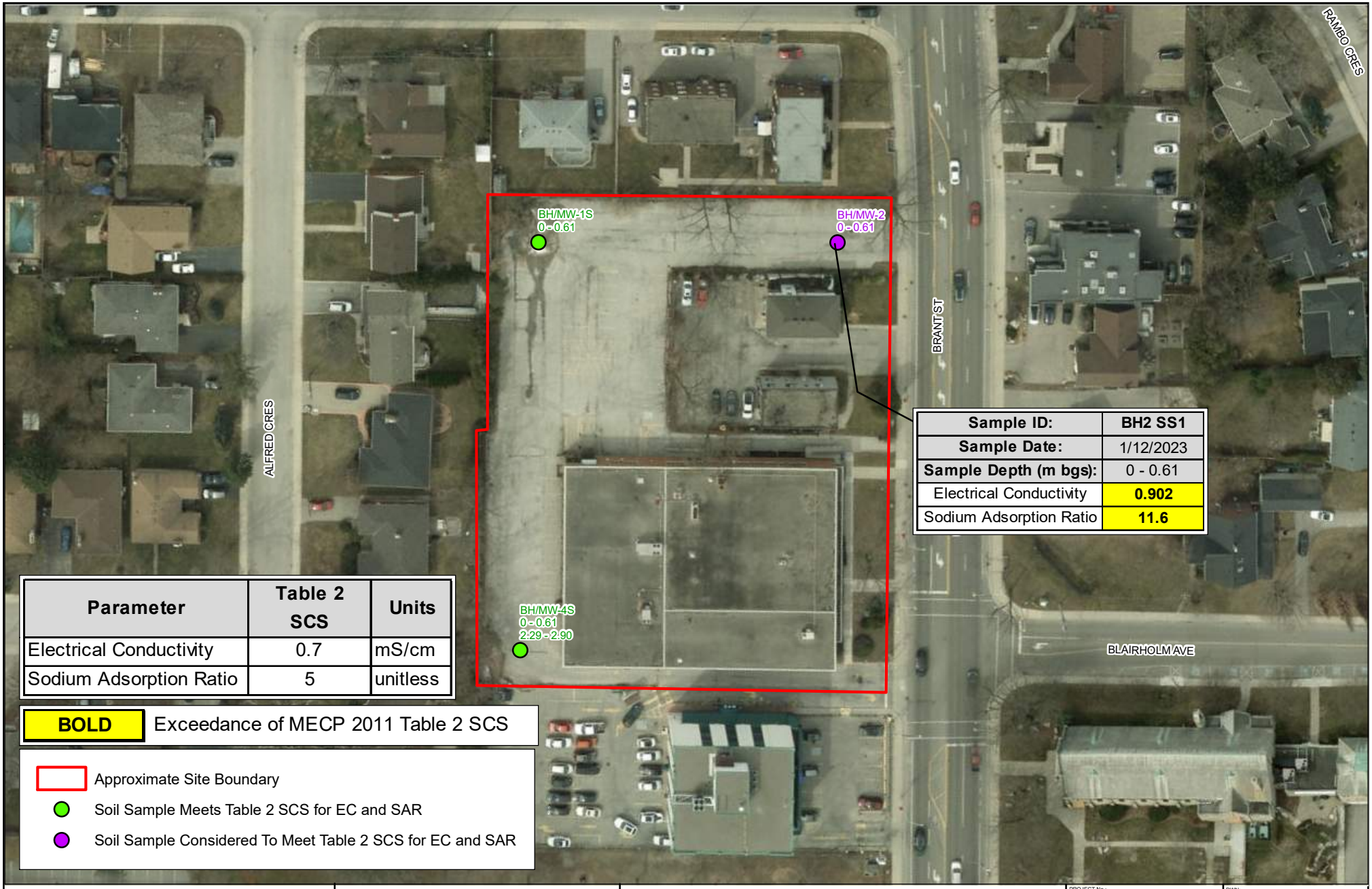
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• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

PROJECT
TRUE
N

0 10 20 30 40 50 m

TITLE AND LOCATION:
SOIL ANALYTICAL RESULTS - POLYCHLORINATED BIPHENYLS
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 10



Sample ID:	BH2 SS1
Sample Date:	1/12/2023
Sample Depth (m bgs):	0 - 0.61
Electrical Conductivity	**0.902**
Sodium Adsorption Ratio	**11.6**

Parameter	Table 2 SCS	Units
Electrical Conductivity	0.7	mS/cm
Sodium Adsorption Ratio	5	unitless

BOLD Exceedance of MECP 2011 Table 2 SCS

Approximate Site Boundary

Soil Sample Meets Table 2 SCS for EC and SAR

Soil Sample Considered To Meet Table 2 SCS for EC and SAR

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PROJECT N
TRUE N

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TITLE AND LOCATION:
SOIL ANALYTICAL RESULTS -
ELECTRICAL CONDUCTIVITY (EC)
AND SODIUM ADSORPTION RATIO (SAR)
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.:	DWN:
GTR-21018895-B0	HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 11



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PROJECT TRUE N

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TITLE AND LOCATION:

GROUNDWATER ANALYTICAL RESULTS - PHCs and BTEX
Phase Two Environmental Site Assessment
688 Brant Street
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PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 12



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PROJECT
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N

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TITLE AND LOCATION:
GROUNDWATER ANALYTICAL RESULTS - METALS (INCLUDING HYDRIDE-FORMING METALS)
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 13



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PROJECT
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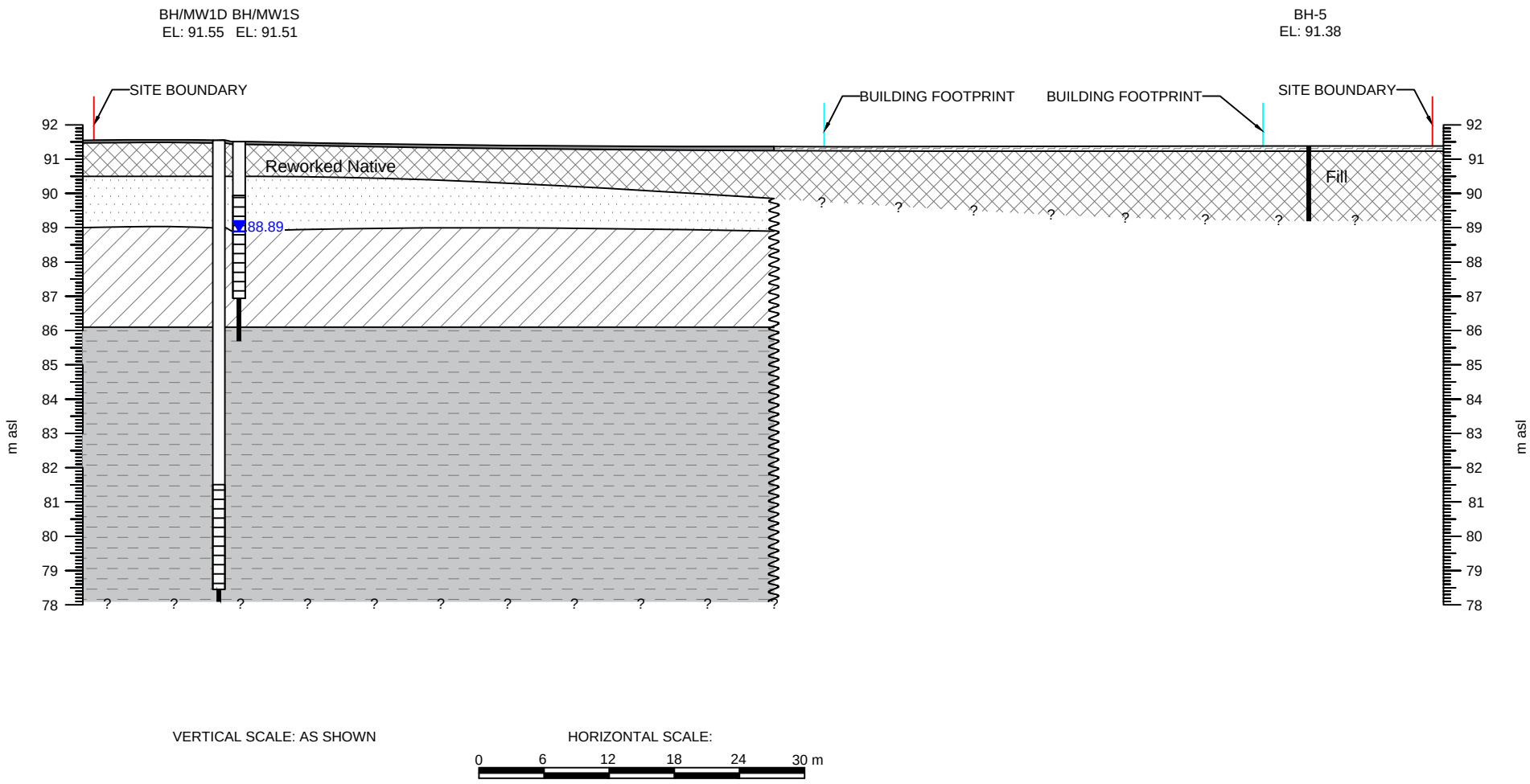
0 10 20 30 40 50 m

TITLE AND LOCATION:
GROUNDWATER ANALYTICAL RESULTS - POLYCHLORINATED BIPHENYLS
Phase Two Environmental Site Assessment
688 Brant Street
Burlington, Ontario

PROJECT No.: GTR-21018895-B0	DWN: HY
SCALE: AS NOTED	CHKD: JH
DATE: FEBRUARY 2023	FIG. No.: 14

A
NORTHWEST

A'
SOUTHEAST



VERTICAL SCALE: AS SHOWN

HORIZONTAL SCALE:

0 6 12 18 24 30 m

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LEGEND:

- ASPHALT
- TOPSOIL
- FILL
- CLAYEY SILT TILL
- SAND
- SHALE BEDROCK
- GROUNDWATER ELEVATION (masl) AS MEASURED ON JANUARY 31, 2023

TITLE AND LOCATION:

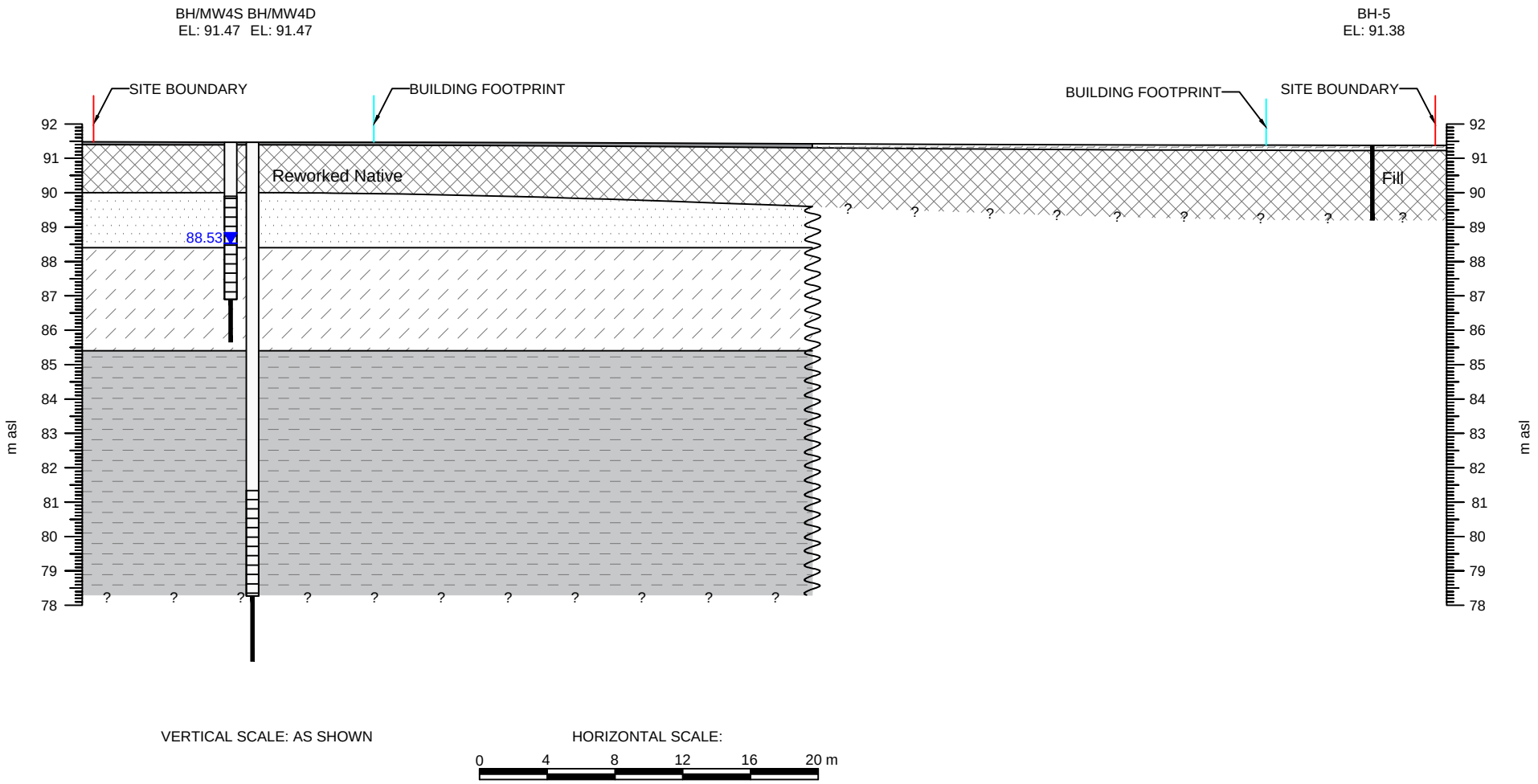
CROSS SECTION A-A'
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
688 BRANT STREET
BURLINGTON, ONTARIO

PROJECT NO.:	DWN.:
GTR-21018895-B0	HY
SCALE: AS NOTED	CK: JH
DATE: FEBRUARY 2023	FIG. NO.: 15

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B
SOUTHWEST

B'
SOUTHEAST



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LEGEND:

- ASPHALT
- TOPSOIL
- FILL
- SILT TILL
- SAND
- SHALE BEDROCK
- GROUNDWATER ELEVATION (masl) AS MEASURED ON JANUARY 31, 2023

TITLE AND LOCATION:

CROSS SECTION B-B'

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
688 BRANT STREET
BURLINGTON, ONTARIO

PROJECT NO.:	DWN.:
GTR-21018895-B0	HY
SCALE:	CK:
AS NOTED	JH
DATE:	FIG. NO.:
FEBRUARY 2023	16

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Tables

TABLE 1 - Areas of Potential Environmental Concern (APECs)

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Area of Potential Environmental Concern (APEC)[1]	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)[2]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1A	Southwest portion of the Site	PCA 'Other' – Waste generations	On-Site	Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), Metals, Hydride-forming Metals (As, Sb, Se), Polychlorinated biphenyls (PCBs)	Soil and groundwater
APEC 1B	Southeast portion of the Site	PCA 55– Transformer Manufacturing, Processing and Use	On-Site	PCBs, PHCs, BTEX	Soil
APEC 1C	Northeast portion of the Site.	PCA 'Other' – Application of De-icing Agents (or Products)	On-Site	Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR)	Soil
APEC 1D	North portion of Site	PCA #30 – Importation of Fill Material of Unknown Quality	On-Site	Polycyclic Aromatic Hydrocarbons (PAHs), Metals, As, Sb, Se, PHCs, BTEX	Soil

Notes:

1. Area of Potential Environmental Concern means the area on, in or under a phase one study area where one or more contaminants are potentially present,
as determined through the P One ESA, including through,
(a) identification of post or present uses on, in or under the phase one property, and
(b) identification of potentially contaminating activities.

2. Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area.

3. When completing this column, identify all contaminants of potential concern using the Method Groups as identified in the "Protocol for in the Assessment of Properties
under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011, as specified below:

ABNs	PCBs	PHCs	Cr (VI)	Electrical Conductivity	SAR
CPs	PAHs	Metals	Hg	CN-	Methyl Mercury
1,4- Dioxane	THMs	As, Sb, Se	Cl-	Ca, Mg	high pH
Dioxins/Furans, PCDDs/PCI	VOCs	BTEX	B-HWS	Na	low pH
OCPs					

4. When submitting a record of site condition for filing, a copy of this table must be attached

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TABLE 2 - Borehole Log Information

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID	Ground Elevation (m)	Depth of BH (m bgs)	Bottom Elevation (m bgs)	Date Drilled	Drilling Contractor
BH/MW1S	91.514	5.79	85.724	12-Jan-23	Altech
BH/MW2	91.144	5.9	85.244	12-Jan-23	Altech
BH/MW4S	91.474	6.10	85.374	16-Jan-23	Altech
BH5	91.375	2.13	89.245	17-Jan-23	Altech

Elevation surveyed surveyed in reference to a geodetic benchmark provided on the topographic survey plan. Topographic Survey Plan prepared by A.T. McLaren Limited and dated June 6, 2022.

TABLE 3 - Summary of Soil Samples Submitted for Chemical Analysis

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Soil Sample ID	Sample Depth Interval (m)	Rationale	Analysis
BH1 SS1	0 - 0.61	Assess soil quality associated with APEC 1C	PAH, Metals, ORPs
BH1 SS5	3.05 - 3.66	Assess soil quality associated with APEC 1C	PHCs, BTEX
BH2 SS1	0 - 0.61	Assess soil quality associated with APEC 1C and 1D	PAH, Metals, ORPs, pH
BH2 SS2	0.76 - 1.37	Assess soil quality associated with APEC 1C and 1D	PHCs, BTEX
BH2 SS5	3.05 - 3.66	Assess soil quality associated with APEC 1C and 1D	PHCs, BTEX
BH4 SS1	0 - 0.61	Assess soil quality associated with APEC 1A and 1C	PAH, Metals, PCBs, ORPs
BH4 SS2	0.76 - 1.37	Assess soil quality associated with APEC 1A and 1C	PHCs, BTEX
BH4 SS4	2.29 - 2.90	Assess soil quality associated with APEC 1A and 1C	PHCs, BTEX, pH
BH5 SS1	0 - 0.61	Assess soil quality associated with APEC 1B	PHCs, BTEX, PCBs
BH5 SS2	0.61 - 1.37	Assess soil quality associated with APEC 1B	Metals
QA/QC Samples:			
BH2 SS22	0.76 - 1.37	Dup of BH2 SS2	PHCs, BTEX

PHCs - Petroleum Hydrocarbons
BTEX - Benzene, Toluene, Ethylbenzene and Xylenes
PAHs - Polycyclic Aromatic Hydrocarbons
PCBs - Polychlorinated Biphenyls
ORPs - Other Regulated Parameters

TABLE 4 - Monitoring Well Installation Details

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID	Ground Elevation (masl)	Stickup / Stickdown (m)	Top of Pipe Elevation (masl)	Measured Depth of MW (m bgs)	Screen Length (m)	Top of Screen (Measured)	Bottom of Screen (Measured)	Geologic Units Intercepted by Well Screen	Well Condition
BH/MW-1S	91.514	-0.073	91.441	4.282	3.050	90.282	87.232	Sand/Silty Clay Till	Intact
BH/MW-2	91.226	-0.082	91.144	4.633	3.050	89.643	86.593	Sand/Silty Sand to Sandy Silt Till	Intact
BH/MW-4S	91.474	-0.085	91.389	4.248	3.050	90.276	87.226	Sand/Silt Till	Intact

Elevation surveyed surveyed in reference to a geodetic benchmark provided on the topographic survey plan. Topographic Survey Plan prepared by A.T. McLaren Limited and dated June 6, 2022.

TABLE 5 - Summary of Groundwater Samples Submitted for Chemical Analysis

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

GW Sample ID	Sampling Date	Rationale	Analysis
MW1	24-Jan-23	Assess groundwater quality associated with APEC 1C	PHCs, BTEX, Metals
MW2	24-Jan-23	Assess groundwater quality associated with APEC 1C and 1D	PHCs, BTEX, Metals
MW4	24-Jan-23	Assess groundwater quality associated with APEC 1A and 1C	PHCs, BTEX, Metals, PCBs
QA/QC Samples:			
Duplicate 1	24-Jan-23	Duplicate of MW4	PHC, BTEX and Metals
TRIP BLANK	24-Jan-23	QA/QC	PHC F1, BTEX

QA/QC - Quality Assurance / Quality Control

PHCs - Petroleum Hydrocarbons

BTEX - Benzene, Toluene, Ethylbenzene and Xylenes

PAHs - Polycyclic Aromatic Hydrocarbons

TABLE 6 - Water Level Depths and Elevations

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID	Ground Elevation (masl)	Stickup / Stickdown (m)	Top of Pipe Elevation (masl)	Water Level Depth (m bgs)	Water Level Depth (m asl)	Total Depth (m bgs)	Date
BH/MW-1S	91.514	-0.073	91.441	2.593	88.921	4.428	24-Jan-23
				2.620	88.894		31-Jan-23
BH/MW-2	91.226	-0.082	91.144	2.692	88.534	4.797	24-Jan-23
				2.620	88.606		31-Jan-23
BH/MW-4S	91.474	-0.085	91.389	2.925	88.549	4.415	24-Jan-23
				2.940	88.534		31-Jan-23

TABLE 7 - Summary of Horizontal Hydraulic Gradients (Overburden)

Phase Two Environmental Site Assessment
GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Well Pair	Separation Distance (m)	Groundwater Elevations (m)*	Elevation Difference (m)	Hydraulic Gradient* (m/m)
BH/MW-1S	58.16	88.894	0.29	0.005
BH/MW-2		88.606		
BH/MW-2	100.71	88.606	0.07	0.001
BH/MW-4S		88.534		

*The horizontal hydraulic gradient between monitoring well pair is calculated from i = Δh/Δs, where I is the horizontal hydraulic gradient, Δh (m) is the groundwater elevation difference and Δs (m) is the distance apart.
* January 31, 2023

Appendix A – Sampling and Analysis Plan

Phase Two Environmental Site Assessment

1. Introduction

This Appendix presents the Sampling and Analysis Plan (SAP) that was developed in support of the Phase Two Environmental Assessment Work (ESA) for the property municipally addressed as 688, 694 and 698 Brant Street in Burlington, Ontario.

The parcel of land is hereinafter referred to as the 'Site'. The Phase Two ESA will be conducted to provide further characterization of the Site subsurface conditions and address the Areas of Potential Environmental Concerns (APECs) outlined in EXP's February 2023 Phase One ESA. The SAP presents the procedures and measures that will be undertaken during field investigative activities to characterize the Site conditions and meet the data quality objectives of the Phase Two ESA.

The SAP presents the sampling program proposed for the Site, the recommended procedures and protocols for sampling and related field activities, the data quality objectives, and the quality assurance/ quality control measures that will be undertaken to provide for the collection of accurate, reproducible and representative data.

2. Field Sampling Program

The field sampling program was developed to provide for the collection of samples of the surficial and subsurface soil materials for chemical analysis of Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), Metals including hydride-forming metals, Polychlorinated biphenyls (PCBs) and Other Regulated Parameters (ORPs), in soil, and for the analysis of PHCs, BTEX and Metals and PCBs in groundwater. The soil sampling media is to consist of the surface soils and upper overburden materials (depths up to 6.9 m below grade). The soil sampling will be location-specific to assess for the potential presence of COCs based on the identification of the APECs. Vapour readings will also be collected in the field to determine if samples are to be submitted for BTEX and PHC F1-F2 analysis. The soil sample intervals will extend from the surface up to a maximum depth of approximately 6.9 meters (m) below grade surface (bgs) or sample refusal.

The groundwater sampling will be location-specific to assess for the potential presence of PHCs, BTEX, Metals and PCBs, based on the identification of APECs. The monitoring well network will comprise of chemical analysis from three (3) newly installed monitoring wells.

Vertical control of the boreholes and monitoring wells will be obtained through the completion of an elevation survey with reference to a local structure with a known geodetic elevation. Groundwater flow and direction in the water table aquifer will also be determined through groundwater level measurements and the elevations established from the Site elevation survey.

3. Field Methods

To meet the requirements of the field sampling program, the following field investigative methods will be undertaken:

- Borehole Drilling;
- Soil Sampling;

- Monitoring Well Installation;
- Monitoring Well Development;
- Groundwater Level Measurements;
- Elevation Survey; and,
- Groundwater Sampling.

The field investigative methods will be performed following the procedures and protocols set out in EXP's standard operating procedures and are outlined below:

3.1 Borehole Drilling

Boreholes will be advanced at the Site to facilitate the collection of soil samples for chemical analysis and geologic characterization; and, for the installation of groundwater monitoring wells. A total seven (7) boreholes are proposed to be advanced at the Site for the environmental investigation, up to a maximum depth of approximately between 2.13 and 13 m below grade, to provide for the collection of samples of the surficial and overburden materials beneath the Site. Four (7) if the boreholes will be used for environmental purposes. The borehole location will be selected to determine the presence or absence of impacts in the soils and the upper overburden groundwater and to address the APECs outlined in EXP's February 2023 Phase One ESA Report.

Prior to borehole drilling, utility clearances will be obtained from public and private locators, as required. If any uncertainty regarding the location of a buried utility at a borehole location is encountered, hand augering or digging will be performed beforehand to confirm the location of the utility.

Where there is overlying asphalt or concrete, the overlying material will be mechanically cored to provide access to the underlying soil materials. The borehole drilling program will be conducted by a licensed driller under the oversight of EXP field staff. Auger flights will be cleaned prior to the commencement of drilling at each borehole location.

3.2 Soil Sampling

Soil samples will be collected for chemical analysis and geologic property characterization. The soil samples will be collected using 5 cm diameter, 61 cm long, split spoons and solid stem augers or a 5 cm diameter, 1.2 m long, duel tube sampling system with interior dedicated vinyl sampling tubes. Upon retrieval from the boreholes, the split spoons or vinyl sampling tubes will be placed on a flat surface and disassembled by drilling personnel to provide access of the recovered cores. Geologic and sampling details of the recovered cores will be logged and the samples will be assessed for the potential presence of non-aqueous phase liquids. Soil stratigraphy encountered in the boreholes will be texturally, visually and olfactory classified in the field and in the laboratory. Soil samples will be logged for colour, grain size, moisture content, density, structures, texture, staining, and field vapour readings. A Photo-ionization Detector (PID) or GastechtorTM will be utilized to screen the soil samples for Total Organic Vapour (TOV). Representative worst-case soil samples from each borehole will be collected and submitted to a certified laboratory for analysis based on TOV readings, sample depth, visual and/or olfactory field observations.

Recommended volumes of soil samples selected for chemical analysis will be collected into pre-cleaned laboratory-supplied glass sample jars/vials identified for the specified analytical test group. Samples intended for PHC/BTEX and VOCs will be collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes and sealed using Teflon lined septa lids. The samples will be placed into clean insulated coolers chilled with ice for storage and transport. The samples will be assigned unique identification numbers, and the date, time, location, and requested analyses for each sample will be documented in a bound field note book. The samples will be submitted to the contractual laboratory within analytical test group holding times under Chain of Custody protocols. New disposable chemical resistant gloves will be used for each soil core to prevent sample cross-contamination.

3.3 Monitoring Well Installation

A proposed total of three (3) boreholes will be instrumented as groundwater monitoring wells installed with 1.5 to 3 m long screens intercepting the native overburden material, where the shallow water table aquifer is expected, extending to depths ranging from 3.96 to 7.77 m below grade. The monitoring wells will be constructed using 51 mm diameter, Schedule 40, PVC riser pipe and number 10 slot size (0.25 mm) well screens. The base of the well screen will be sealed with threaded flush PVC end caps. All well pipe connections will be factory machined threaded flush couplings. The annular space around the well screen will be backfilled with silica sand, to an average height of 0.6 m above the top of the screen. Granular bentonite will be placed in the borehole annulus from the top of the sand pack to approximately 0.3 m below grade. The monitoring well will be completed with flush-mounted protective steel casings cemented into place.

3.4 Monitoring Well Development

The newly installed monitoring wells will be developed to remove fine sediment particles potentially lodged in the sand pack and well screen to enhance hydraulic communication with the surrounding formation waters. The monitoring wells will be developed using a dedicated low-density polyethylene (LDPE) tubing, equipped with an inertial foot valve to disturb the water column. The wells will be developed until approximately 3 to 5 well volumes of water will be removed and/or until purged dry. Well development details will be documented on a well development log sheet or in a bound hard cover notebook. All development waters will be collected and stored in labeled, sealed containers.

3.5 Groundwater Level Measurements

Groundwater level measurements will be recorded for the newly installed monitoring wells to determine the depth of the water table aquifer beneath the Site. The water level will be measured with respect to the top of the PVC riser pipe by means of an electronic water level meter. The water levels will be recorded on water level log sheets or in a bound field notebook. The water level meter probe will be decontaminated between monitoring well locations.

3.6 Elevation Survey

An elevation survey was conducted during the Phase Two ESA investigative activities, with the purpose of obtaining relative vertical control of the monitoring well locations. The top of pipe and ground surface elevations of each monitoring well were surveyed utilizing a handheld Futtura LT-800 Grade Laser Package.

3.7 Field Measurements of Water Quality Parameters

Prior to collecting the groundwater sample, field measurements of water quality parameters will be recorded from the monitoring wells utilizing low-flow purging and sampling methodologies. Groundwater will be purged from the monitoring wells using a peristaltic pump and dedicated LDPE tubing. Field measurements of dissolved oxygen concentration, electrical conductivity, oxidation-reduction potential, pH, temperature, turbidity and water levels will be recorded in three (3) minute intervals during the purging activities using a pre-calibrated multi probe water quality meter, a turbidity meter and a water level meter. Generally well purging will continued until the purged water has chemically stabilized as indicated by field parameter measurements and the well head drawdown is maintained within 10 cm for 3 consecutive readings. In the event that the parameters do not stabilize or the well head drawdown is too significant, the groundwater is to recover to approximately 75% of static levels before sampling.

The multi-meter electrodes will be calibrated prior to receipt of the meter by the supplier using in-house pH and conductivity reference standards. All collected purged water will be stored on-Site in labeled, sealed containers. Equipment used during groundwater monitoring will be thoroughly cleaned and decontaminated between wells.

3.8 Groundwater Sampling

Upon completion the field measurements of water quality parameters, groundwater samples will be collected for chemical analysis using the peristaltic pump and dedicated LDPE tubing. Recommended groundwater sample volumes will be collected into pre-clean laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. The

samples will be placed in an insulated cooler chilled with ice for storage and transport. Samples for BTEX and VOC analysis will be collected in triplicate vials prepared with concentrated hydrochloric acid or an acceptable substitute as a preservative. Each vial will be inverted and inspected for gas bubbles prior to being placed in the cooler to ensure that no head-space is present.

The groundwater sample will be assigned a unique identification number, and the date, time, project number, company name, location and requested analyses will be documented in a bound hard cover notebook. The sample will be submitted to the contractual laboratory within analytical test group holding times under chain of custody protocols. New disposable chemical resistant gloves will be used for each sampling location to prevent sample cross-contamination.

4. Field Quality Assurance/Quality Control Program

The objective of the field quality assurance/quality control (QA/QC) program is to obtain soil and groundwater samples and other field measurements that provide data of acceptable quality that meets the objectives of the Phase Two ESA. The objectives of the QA/QC program will be achieved through the implementation of procedures for the collection of unbiased (i.e. non-contaminated) samples, sample documentation and the collection of appropriate QC samples to provide a measure of sample reproducibility and accuracy. The field QA/QC measures will comprise:

- Decontamination Protocols;
- Equipment Calibration;
- Sample Preservation;
- Sample Documentation; and,
- Field Quality Control Samples.

Details on the field QA/QC measures are provided below.

4.1 Decontamination Protocols

Decontamination protocols will be followed during field sampling where non-dedicated sampling equipment is used to prevent sample cross contamination. For the borehole drilling and soil sampling, soil sampling devices will be cleaned/decontaminated between sampling intervals and auger flights between borehole locations in according with SOP requirements. For the monitoring well installation, well components are not to come into contact with the ground surface prior to insertion into boreholes. Electronic water level meters will be decontaminated between monitoring well locations during well development, and purging activities. For hydraulic conductivity tests, the electronic water level meters will be decontaminated between sampling locations. All decontamination fluids will be collected and stored in sealed, labeled containers.

4.2 Equipment Calibration

All equipment requiring calibration will be calibrated in the field according to manufacturer's requirements using analytical grade reagents, or by the supplier prior to conducting field activities, and subsequently checked in the field. The calibration of all pre-calibrated instruments will be checked in the field using analytical grade reagents and re-calibrated as required. For multiple day sampling events, equipment calibration will be checked prior to the beginning of sampling activities. All calibration data will be documented in a bound hard cover notebook.

4.3 Sample Preservation

All samples will be preserved using appropriate analytical test group specific reagents, as required, and upon collection placed in pre-chilled insulated coolers packed with ice for storage and transport.

4.4 Sample Documentation

All samples will be assigned a unique identification number, which is to be recorded along with the date, time, project number, company name, location and requested analysis in a bound field notebook. All samples will be handled and transported following COC protocols.

4.5 Field Quality Control

Field quality control samples will be collected to evaluate the accuracy and reproducibility of the field sampling procedures. For groundwater sampling, one (1) field duplicate is to be collected for every ten (10) samples submitted for chemical analysis. For multiple day sampling events, at least one (1) field duplicate soil and groundwater sample will be submitted for chemical analysis. The field duplicate samples will be assessed by calculating the relative percent difference and comparing to the analytical test group specific acceptance criteria.

Appendix B – Survey Plan

TOPOGRAPHIC SURVEY
OF
LOT 65
AND PART OF
LOT 66
REGISTERED PLAN 99
IN THE
CITY OF BURLINGTON
REGIONAL MUNICIPALITY OF HALTON

SCALE 1:200 METRIC

4 2 0 4 8 12 metres

R.A. McLAREN, O.L.S. – 2022

BEARING NOTE:
BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY REAL TIME NETWORK OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010.0)

NOTE:
DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.99970618

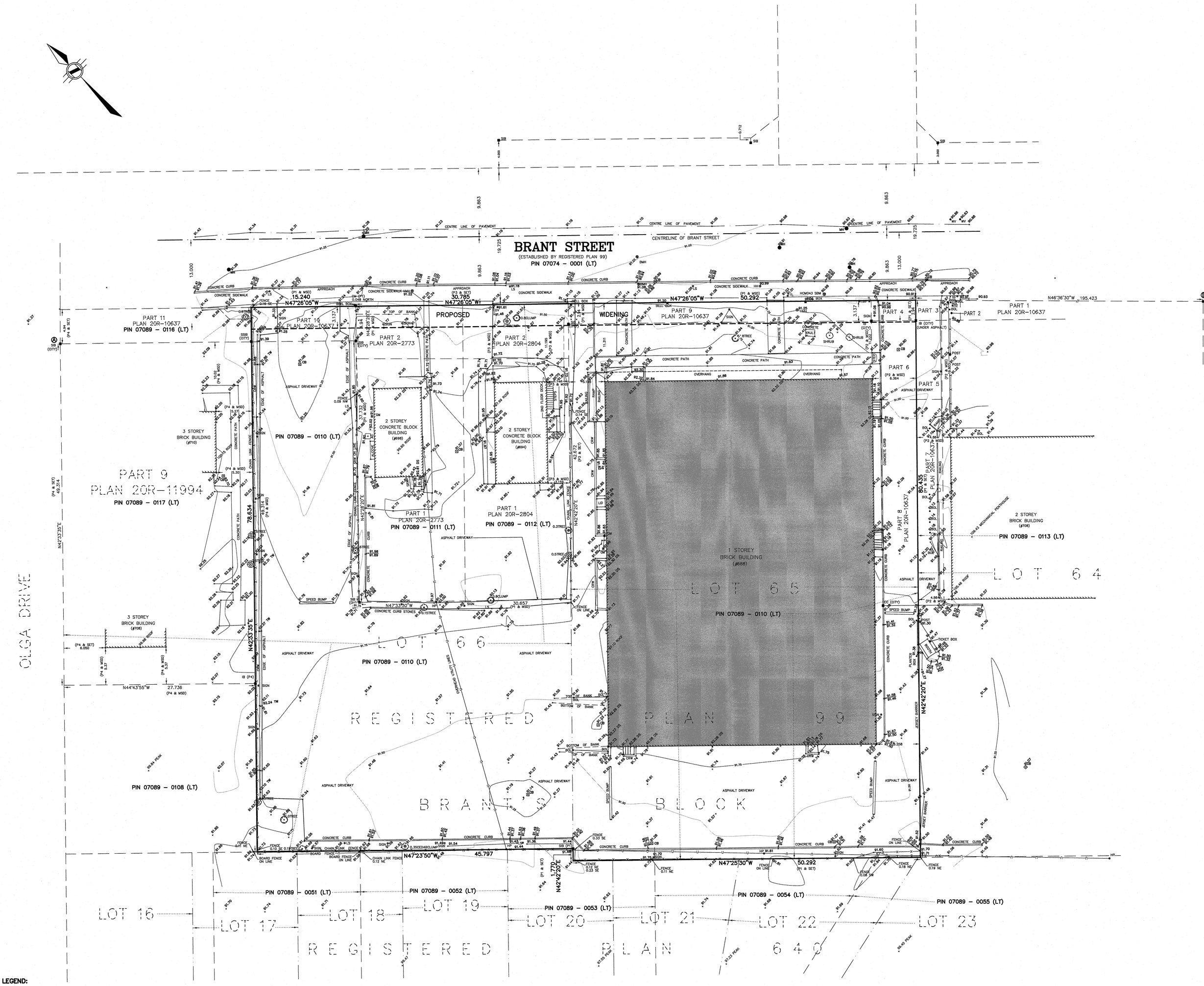
INTEGRATION DATA

OBSERVED REFERENCE POINTS (ORP's): UTM ZONE 17, NAD83 (CSRS) (2010.0). COORDINATES TO URBAN ACCURACY PER SEC. 14(2) OF O.REG. 216/10		
POINT ID	NORTHING	EASTING
ORP A	4798357.813	596710.470
ORP B	4798143.371	596947.089
COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.		

BENCHMARK NOTE:
STATION: CITY OF BURLINGTON BENCHMARK 368

BRASS PLAQUE ON THE NORTHEAST WING WALL OF THE CONCRETE HEAD WALL OF A CULVERT ON THE NORTH SIDE OF BLAIRHOLM AVENUE, 50M WEST OF COURTLAND AVENUE AND 150M EAST OF BRANT STREET.

ELEVATION : 89.578 metres CGVD–1928:1978



LEGEND:

□	DENOTES	MONUMENT SET
■		MONUMENT FOUND
IB		IRON BAR
PB		PLASTIC BAR
CC		CUTCROSS
CP		CONCRETE PIN
SIB		STANDARD IRON BAR
SSIB		SHORT STANDARD IRON BAR
824		A.T. McLAREN, O.L.S.
Msd		MEASURED
MH		MANHOLE
TL		TRAFFIC LIGHT
LS		LIGHT STANDARD
WV		WATER VALVE
BMH		BELL MANHOLE
CRW		CONCRETE RETAINING WALL
BOL		BOLLARD
SRW		STONE RETAINING WALL
FH		FIRE HYDRANT
VC		VALVE CHAMBER
P1		PLAN 20R–10639
P2		PLAN BY MACKAY, MACKAY PETER'S DATED SEPT. 11, 1978
P3		PLAN BY YATES & YATES DATED SEPT. 12, 1985
P4		PLAN 20R–11994

No.	DESCRIPTION	DATE	BY
1	ADDED PROPOSED ROAD WIDENING	JUNE 6/22	RBM

REVISIONS

METRIC NOTE:
DISTANCES AND COORDINATES 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, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM
2. THE SURVEY WAS COMPLETED ON THE 10th DAY OF DECEMBER, 2021

7JAN22
DATE

ROB A. McLAREN, O.L.S.

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A.T. McLaren Limited
LEGAL AND ENGINEERING SURVEYS
69 JOHN STREET SOUTH, SUITE 230
HAMILTON, ONTARIO, L8N 2B9
PHONE (905) 527–8559 FAX (905) 527–0032

Drawn	Checked	Crew Chief	Scale	Dwg.No.
KM	RBM	MWP	1:200	36830

Appendix C – Borehole Logs

Log of Borehole BH/MW-1S

Project No. GTR-21018895-B0 | Drawing No. 1

Project: Phase Two ESA | Sheet No. 1 of 1

Location: 688-698 Brant Street, Burlington, ON

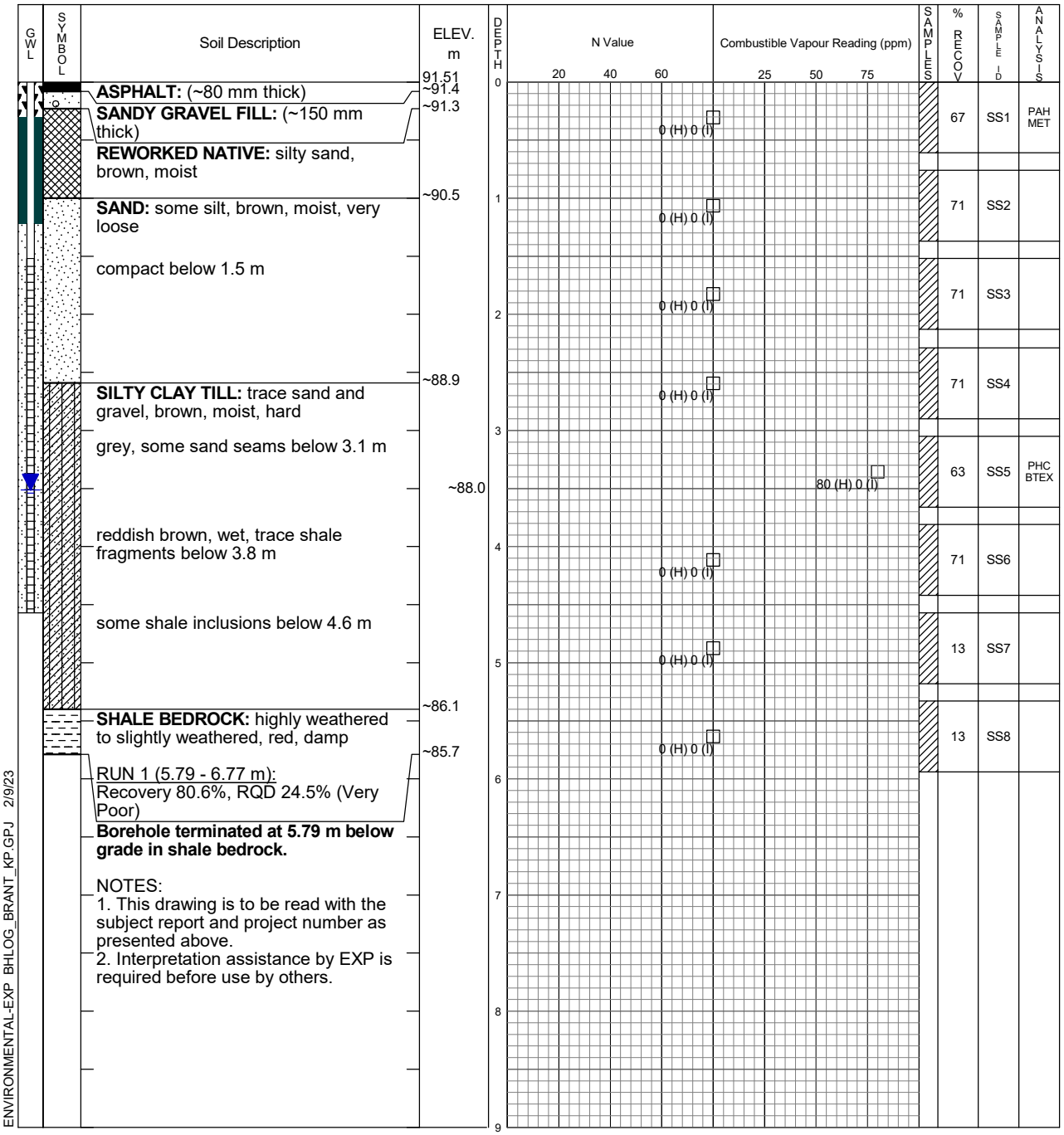
Date Drilled: January 12, 2023

Drill Type: D-120 Truck Mount, Solid Stem

Datum: Geodetic

Chemical Analysis

BTEX	Benzene, Toluene, Ethylbenzene and Xylenes	*	Duplicate Sample
ING	Metals and Inorganics	PCB	Polychlorinated Biphenyls
MET	Metals	PHC	Petroleum Hydrocarbons (F1-F4)
PAH	Polycyclic Aromatic Hydrocarbons	VOC	Volatile Organic Compounds
PEST	Organochlorine Pesticides		



ENVIRONMENTAL-EXP BHLOG_BRANT_KP.GPJ 2/9/23

Time	Water Level (m)	Depth to Cave (m)
Jan.24, 2023	2.593	
Jan.31, 2023	2.620	

EXP Services Inc.
Brampton, Ontario
Telephone: 905-793-9800
Facsimile: 905-793-0641

Log of Borehole BH/MW-2

Project No. GTR-21018895-B0 | Drawing No. 2

Project: Phase Two ESA | Sheet No. 1 of 1

Location: 688-698 Brant Street, Burlington, ON

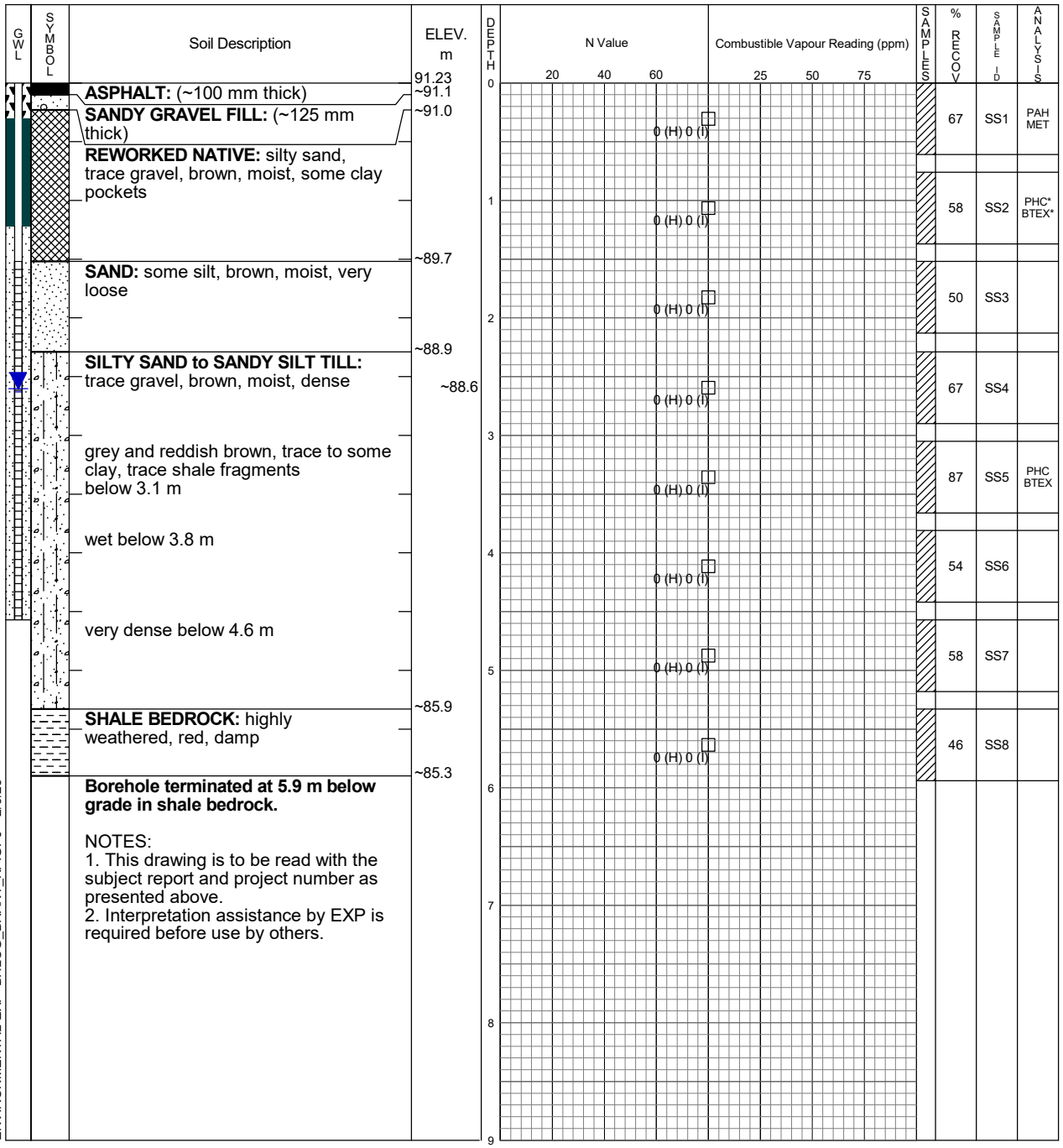
Date Drilled: January 12, 2023

Drill Type: D-120 Truck Mount, Solid Stem

Datum: Geodetic

Chemical Analysis

BTEX	Benzene, Toluene, Ethylbenzene and Xylenes	*	Duplicate Sample
ING	Metals and Inorganics	PCB	Polychlorinated Biphenyls
MET	Metals	PHC	Petroleum Hydrocarbons (F1-F4)
PAH	Polycyclic Aromatic Hydrocarbons	VOC	Volatile Organic Compounds
PEST	Organochlorine Pesticides		



NOTES:
1. This drawing is to be read with the subject report and project number as presented above.
2. Interpretation assistance by EXP is required before use by others.

ENVIRONMENTAL-EXP BHLOG_BRANT_KP.GPJ 2/9/23

Time	Water Level (m)	Depth to Cave (m)
Jan.24, 2023	2.692	
Jan.31, 2023	2.620	

EXP Services Inc.
Brampton, Ontario
Telephone: 905-793-9800
Facsimile: 905-793-0641

Log of Borehole BH/MW-4S

Project No. GTR-21018895-B0 | Drawing No. 3

Project: Phase Two ESA | Sheet No. 1 of 1

Location: 688-698 Brant Street, Burlington, ON

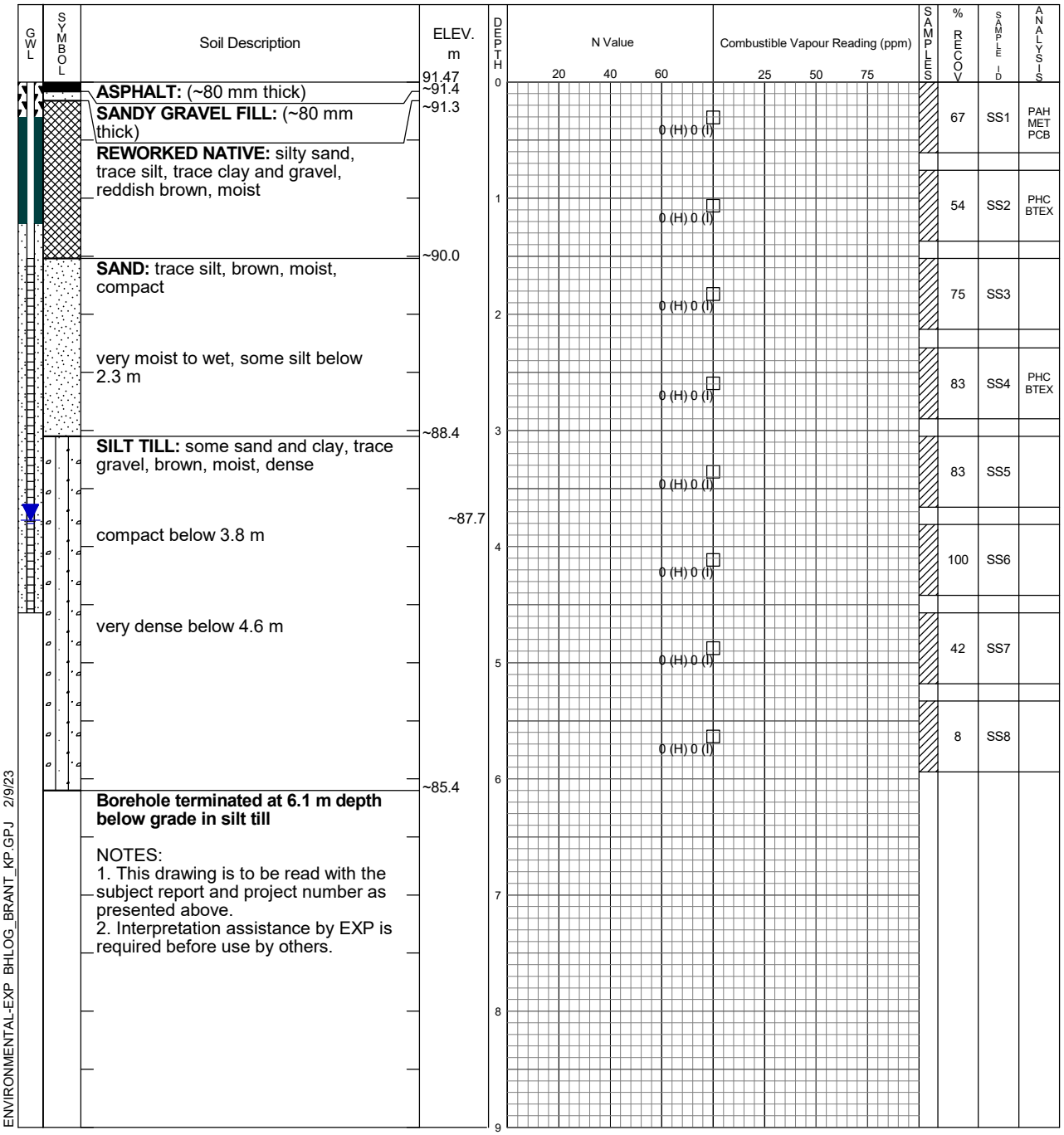
Date Drilled: January 16, 2023

Drill Type: D-120 Truck Mount, Solid Stem

Datum: Geodetic

Chemical Analysis

BTEX	Benzene, Toluene, Ethylbenzene and Xylenes	*	Duplicate Sample
ING	Metals and Inorganics	PCB	Polychlorinated Biphenyls
MET	Metals	PHC	Petroleum Hydrocarbons (F1-F4)
PAH	Polycyclic Aromatic Hydrocarbons	VOC	Volatile Organic Compounds
PEST	Organochlorine Pesticides		



Time	Water Level (m)	Depth to Cave (m)
Jan.24, 2023	2.925	
Jan.31, 2023	2.940	

EXP Services Inc.
Brampton, Ontario
Telephone: 905-793-9800
Facsimile: 905-793-0641

Log of Borehole BH-5

Project No. GTR-21018895-B0 | Drawing No. 4

Project: Phase Two ESA | Sheet No. 1 of 1

Location: 688-698 Brant Street, Burlington, ON

Date Drilled: January 17, 2023

Drill Type: Pionjar Drill

Datum: Geodetic

Chemical Analysis

BTEX	Benzene, Toluene, Ethylbenzene and Xylenes	*	Duplicate Sample
ING	Metals and Inorganics	PCB	Polychlorinated Biphenyls
MET	Metals	PHC	Petroleum Hydrocarbons (F1-F4)
PAH	Polycyclic Aromatic Hydrocarbons	VOC	Volatile Organic Compounds
PEST	Organochlorine Pesticides		

GWL	SYMBOL	Soil Description	ELEV. m	DEPTH	N Value	Combustible Vapour Reading (ppm)	SAMPLES	% RECOV	SAMPLE ID	ANALYSIS
		TOPSOIL: (~150 mm thick)	91.38	0	20 40 60	25 50 75				
		FILL: sand, some silt, trace gravel, brown, moist, trace brick fragments and rootlets	~91.2		0 (H) 0 (I)			83	SS1	PHC BTEX PCB
				1	0 (H) 0 (I)			80	SS2	MET
				2	0 (H) 0 (I)			100	SS3	
			~89.2							
		Borehole terminated at 2.1 m depth below grade.		3						
		NOTES: 1. This drawing is to be read with the subject report and project number as presented above. 2. Interpretation assistance by EXP is required before use by others.		4						
				5						
				6						
				7						
				8						
				9						

ENVIRONMENTAL-EXP BHLOG_BRANT_KP.GPJ 2/9/23

Time	Water Level (m)	Depth to Cave (m)

EXP Services Inc.
Brampton, Ontario
Telephone: 905-793-9800
Facsimile: 905-793-0641

Appendix D – Analytical Results

SOIL ANALYTICAL RESULTS:

Table D-1 - Petroleum Hydrocarbons including BTEX in Soil
Phase Two Environmental Site Assessment
GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID	MECP (2011) Table 2: Full Depth Background SCS in a Potable Groundwater Condition RPI Land Use (coarse textured soil)	RDL*	BH/MW-1S	BH/MW-2			BH/MW-4S		BH-5
Sample ID			BH1 SS5	BH2 SS2	BH2 SS22	BH2 SS5	BH4 SS2	BH4 SS4	BH5 SS1
Lab ID			4685001	4685012	4685013	4685014	4693218	4693219	4693221
Sampling Date			01/12/2023	01/12/2023	01/12/2023	01/12/2023	01/16/2023	01/16/2023	01/17/2023
Soil Sample Depth (m)			3.05 - 3.66	0.76 - 1.37	Field Duplicate of BH-2 SS2	3.05 - 3.66	0.76 - 1.37	2.29 - 2.90	0 - 0.61
Consultant			EXP	EXP	EXP	EXP	EXP	EXP	EXP
Laboratory			AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	AGAT
Benzene	0.21	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	2.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	1.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m-Xylene + p-Xylene	NV	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	NV	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	3.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PHC F1 (C6-C10)	55	5	<5	<5	<5	<5	<5	<5	<5
PHC F1 (C6-C10) - BTEX	55	5	<5	<5	<5	<5	<5	<5	<5
PHC F2 (C10-C16)	98	10	<10	<10	<10	<10	<10	<10	<10
PHC F3 (C16-C34)	300	50	<50	<50	<50	<50	<50	<50	<50
PHC F4 (C34-C50)	2800	50	<50	<50	<50	<50	<50	<50	<50

All soil concentrations reported in µg/g.
RDL = Reporting Detection Limit
* Maximum RDL below MECP (2011) SCS
'<' = Parameter below detection limit, as indicated
'NV'= No value
NA= Not applicable or not analyzed
Bold Concentration exceeds MECP (2011) Table 3 SCS.
Non-detect but detection limit exceeds the

SOIL ANALYTICAL RESULTS:

Table D-3 - Metals and Hydride-Forming Metals in Soil

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID **Sample ID** **Lab ID** **Sampling Date** **Soil Sample Depth (m)** **Consultant** **Laboratory**	MECP (2011) Table 2: Full Depth Background SCS in a Potable Groundwater Condition RPI Land Use (coarse textured soil)	RDL*	BH/MW-1S BH1 SS1 4684999 01/12/2023 0 - 0.61 EXP AGAT	BH/MW-2 BH2 SS1 4685011 01/12/2023 0 - 0.61 EXP AGAT	BH/MW-4S BH4 SS1 3590173 03/02/2022 0 - 0.61 EXP AGAT	BH-5 BH5 SS2 3590181 03/02/2022 0.61 - 1.37 EXP AGAT
Antimony	7.5	0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	18	1	3	4	3	8
Barium	390	2.0	20.1	35.4	21.3	34.5
Beryllium	4	0.4	<0.4	<0.4	<0.4	<0.4
Boron (Total)	120	5	<5	6	5	<5
Cadmium	1.2	0.5	<0.5	<0.5	<0.5	<0.5
Chromium (total)	160	5	9	12	9	11
Cobalt	22	0.5	3.9	5.9	4.6	4.7
Copper	140	1.0	12.3	16.8	15.4	22.4
Lead	120	1	6	11	6	47
Molybdenum	6.9	0.5	<0.5	0.6	<0.5	0.6
Nickel	100	1	7	11	9	10
Selenium	2.4	0.8	<0.8	<0.8	<0.8	<0.8
Silver	20	0.5	<0.5	<0.5	<0.5	<0.5
Thallium	1	0.5	<0.5	<0.5	<0.5	<0.5
Uranium	23	0.50	<0.50	<0.50	<0.50	0.53
Vanadium	86	0.4	19.5	20.8	19	20.8
Zinc	340	5	19	45	22	37

All soil concentrations reported in µg/g.

RDL = Reporting Detection Limit

* Maximum RDL below MECP (2011) SCS

'<' = Parameter below detection limit, as indicated

'NV'= No value

NA= Not applicable or not analyzed

Bold Concentration exceeds MECP (2011) Table 3 SCS.

Non-detect but detection limit exceeds the MECP (2011) SCS

SOIL ANALYTICAL RESULTS:

Table D-2 - Polycyclic Aromatic Hydrocarbons in Soil

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID	MECP (2011) Table 2: Full Depth Background SCS in a Potable Groundwater Condition RPI Land Use (coarse textured soil)	RDL*	BH/MW-1S	BH/MW-2	BH/MW-4S
Sample ID			BH1 SS1	BH2 SS1	BH4 SS1
Lab ID			4684999	4685011	4693211
Sampling Date			01/12/2023	01/12/2023	01/16/2023
Soil Sample Depth (m)			0 - 0.61	0 - 0.61	0 - 0.61
Consultant			EXP	EXP	EXP
Laboratory			AGAT	AGAT	AGAT
Acenaphthene	7.9	0.05	<0.05	<0.05	<0.05
Acenaphthylene	0.15	0.05	<0.05	<0.05	<0.05
Anthracene	0.67	0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.5	0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.3	0.05	<0.05	<0.05	<0.05
Benzo(b/j)fluoranthene	0.78	0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	6.6	0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	0.78	0.05	<0.05	<0.05	<0.05
Chrysene	7	0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	0.1	0.05	<0.05	<0.05	<0.05
Fluoranthene	0.69	0.05	<0.05	<0.05	<0.05
Fluorene	62	0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	0.38	0.05	<0.05	<0.05	<0.05
1-Methylnaphthalene	0.99	0.05	<0.05	<0.05	<0.05
2-Methylnaphthalene	0.99	0.05	<0.05	<0.05	<0.05
Naphthalene	0.6	0.05	<0.05	<0.05	<0.05
Phenanthrene	6.2	0.05	<0.05	<0.05	<0.05
Pyrene	78	0.05	<0.05	<0.05	<0.05
1&2-Methylnaphthalene	0.99	0.05	<0.05	<0.05	<0.05

All soil concentrations reported in µg/g.

RDL = Reporting Detection Limit

* Maximum RDL below MECP (2011) SCS

'<' = Parameter below detection limit, as indicated

'NV'= No value

NA= Not applicable or not analyzed

Bold Concentration exceeds MECP (2011) Table 3 SCS.

Non-detect but detection limit exceeds the MECP (2011) SCS

SOIL ANALYTICAL RESULTS:

Table D-4 - Other Regulated Parameters in Soil

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID	MECP (2011) Table 2: Full Depth Background SCS in a Potable Groundwater Condition RPI Land Use (coarse textured soil)	RDL*	BH/MW-1S	BH/MW-2	BH/MW-4S	
Sample ID			BH1 SS1	BH2 SS1	BH4 SS1	BH4 SS4
Lab ID			4684999	4685011	4693211	4693219
Sampling Date			01/12/2023	01/12/2023	01/16/2023	01/16/2023
Soil Sample Depth (m)			0 - 0.61	0 - 0.61	0 - 0.61	2.29 - 2.90
Consultant			EXP	EXP	EXP	EXP
Laboratory			AGAT	AGAT	AGAT	AGAT
Electrical Conductivity (mS/cm)	0.7	0.005	0.284	**0.902**	0.165	-
Sodium Adsorption Ratio (unitless)	5	-	4.54	**11.6**	2.05	-
pH (pH Units)	5-9 (surface soil); 5-11 (subsurface soil)	0.1	-	8.06		7.74

All soil concentrations reported as indicated

RDL = Reporting Detection Limit

* Maximum RDL below MECP (2011) SCS

'<' = Parameter below detection limit, as indicated

'NV'= No value

NA= Not applicable or not analyzed

Bold Concentration exceeds MECP (2011) Table 3 SCS.

Non-detect but detection limit exceeds the MECP (2011) SCS

SOIL ANALYTICAL RESULTS:

Table D-5 - Polychlorinated Biphenyls in Soil

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID	MECP (2011) Table 2: Full Depth Background SCS in a Potable Groundwater Condition RPI Land Use (coarse textured soil)	RDL*	BH/MW-4S	BH-5
Sample ID			BH4 SS1	BH5 SS1
Lab ID			4693211	4693221
Sampling Date			01/16/2023	01/17/2023
Soil Sample Depth (m)			0 - 0.61	0 - 0.61
Consultant			EXP	EXP
Laboratory			AGAT	AGAT
Total Polychlorinated Biphenyls	0.35	0.1	<0.1	<0.1

All soil concentrations reported as indicated

RDL = Reporting Detection Limit

* Maximum RDL below MECP (2011) SCS

'<' = Parameter below detection limit, as indicated

'NV'= No value

NA= Not applicable or not analyzed

Bold Concentration exceeds MECP (2011) Table 3 SCS.

Non-detect but detection limit exceeds the MECP (2011) SCS

GROUNDWATER ANALYTICAL RESULTS:

Table D-6 - Petroleum Hydrocarbons including BTEX in Groundwater
Phase Two Environmental Site Assessment
GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID	MECP (2011) Table 2: Full Depth Background SCS in a Potable Groundwater Condition All Types of Land Use (coarse textured soil)	RDL*	BH/MW-1S	BH/MW-2	BH/MW-4S		
Sample ID			MW1	MW2	MW4	Duplicate 1	Trip Blank
Lab ID			4718691	4718692	4718693	4718712	4718713
Sampling Date			1/24/2023	1/24/2023	1/24/2023	1/24/2023	1/24/2023
Screen length			1.52 - 4.57	1.52 - 4.57	1.52 - 4.57	Field duplicate of MW-4S	N/A
Consultant			EXP	EXP	EXP	EXP	EXP
Laboratory			AGAT	AGAT	AGAT	AGAT	AGAT
Benzene	5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	24	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	2.4	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m-Xylene + p-Xylene	NV	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	NV	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylenes (Total)	300	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
PHC F1 (C6-C10)	750	25	<25	<25	<25	<25	<25
PHC F1 (C6-C10) - BTEX	750	25	<25	<25	<25	<25	<25
PHC F2 (C10-C16)	150	100	<100	<100	<100	<100	<100
PHC F3 (C16-C34)	500	100	<100	<100	<100	<100	<100
PHC F4 (C34-C50)	500	100	<100	<100	<100	<100	<100
Reached baseline at C50?	-	-	-	-	-	-	-

All groundwater concentrations reported in µg/L.

RDL = Reporting Detection Limit

* Maximum RDL below MECP (2011) SCS

'<' = Parameter below detection limit, as indicated

'NV'= No value

NA= Not applicable or not analyzed

Bold Concentration exceeds MECP (2011) Table 3 SCS.

Non-detect but detection limit exceeds the MECP (2011) SCS

GROUNDWATER ANALYTICAL RESULTS:

Table D-7 - Metals and Hydride-Forming Metals in Groundwater
Phase Two Environmental Site Assessment
GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID			BH/MW-2	BH/MW-4S	
Sample ID	MECP (2011) Table 2: Full Depth Background SCS in a Potable Groundwater Condition All Types of Land Use (coarse textured soil)	RDL*	MW2	MW4	Duplicate 1
Lab ID			4718692	4718693	4718712
Sampling Date			01/24/23	01/24/23	01/24/23
Screen Depth Interval (m)			1.52 - 4.57	1.52 - 4.57	Field duplicate of BH/MW-4S
Consultant			EXP	EXP	EXP
Laboratory			AGAT	AGAT	AGAT
Antimony	6	1.0	<1.0	<1.0	<1.0
Arsenic	25	1.0	1.3	<1.0	<1.0
Barium	1000	2.0	384	66	65.2
Beryllium	4	0.50	<0.50	<0.50	<0.50
Boron (Total)	5000	10.0	201	43.8	45.9
Cadmium	2.7	0.20	<0.20	<0.20	<0.20
Chromium (total)	50	2.0	<2.0	<2.0	<2.0
Cobalt	3.8	0.50	0.61	<0.50	<0.50
Copper	87	1.0	1.2	<1.0	<1.0
Lead	10	0.50	2.43	0.83	0.78
Molybdenum	70	0.50	13.1	0.65	<0.50
Nickel	100	1.0	1.2	<1.0	1
Selenium	10	1.0	<1.0	<1.0	2.3
Silver	1.5	0.20	<0.20	<0.20	<0.20
Thallium	2	0.30	<0.30	<0.30	<0.30
Uranium	20	0.50	5.68	1.05	0.97
Vanadium	6.2	0.40	0.75	0.85	1.1
Zinc	1100	5.0	<5.0	<5.0	<5.0

All groundwater concentrations reported in µg/L.
RDL = Reporting Detection Limit
* Maximum RDL below MECP (2011) SCS
'<' = Parameter below detection limit, as indicated
'NV'= No value
NA= Not applicable or not analyzed
Bold Concentration exceeds MECP (2011) Table 3 SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS

GROUNDWATER ANALYTICAL RESULTS:

Table D-8 - Polychlorinated Biphenyls in Groundwater

Phase Two Environmental Site Assessment

GTR-20108895-B0, 688-698 Brant Street Burlington, Ontario

Location ID	MOE (2011) Table 2: Full Depth Background SCS in a Potable Groundwater Condition All Types of Land Use (coarse textured soil)	RDL*	BH/MW-4S
Sample ID			MW4
Lab ID			4718693
Sampling Date			1/24/2023
Screen Depth Interval (m)			1.52 - 4.57
Consultant			EXP
Laboratory			AGAT
Polychlorinated Biphenyls	15	<0.1	<0.1

All groundwater concentrations reported in µg/L.

RDL = Reporting Detection Limit

* Maximum RDL below MECP (2011) SCS

'<' = Parameter below detection limit, as indicated

'NV'= No value

NA= Not applicable or not analyzed

Bold Concentration exceeds MECP (2011) Table 3 SCS.

Non-detect but detection limit exceeds the MECP (2011) SCS

Appendix E – Laboratory Certificates of Analysis

AGAT Laboratories

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

CLIENT NAME: EXP SERVICES INC
1266 SOUTH SERVICE ROAD, SUITE C1-1
STONEY CREEK , ON L8E 5R9
(905) 573-4000
ATTENTION TO: Jennifer Hayman
PROJECT: PHASE TWO ESA
AGAT WORK ORDER: 23H987985
SOIL ANALYSIS REVIEWED BY: Chuandi Zhang, Lab Team Lead
TRACE ORGANICS REVIEWED BY: Pinkal Patel, Report Reviewer
DATE REPORTED: Jan 19, 2023
PAGES (INCLUDING COVER): 14
VERSION*: 1

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

Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
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AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-689 Brant St.

SAMPLED BY:KP

O. Reg. 153(511) - Metals (Including Hydrides) (Soil)

DATE RECEIVED: 2023-01-13 **DATE REPORTED: 2023-01-19**

		SAMPLE DESCRIPTION:		BH1 SS1	BH2 SS1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2023-01-12 12:00	2023-01-12
Parameter	Unit	G / S	RDL	4684999	4685011
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	3	4
Barium	µg/g	390	2.0	20.1	35.4
Beryllium	µg/g	4	0.4	<0.4	<0.4
Boron	µg/g	120	5	<5	6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	5	9	12
Cobalt	µg/g	22	0.5	3.9	5.9
Copper	µg/g	140	1.0	12.3	16.8
Lead	µg/g	120	1	6	11
Molybdenum	µg/g	6.9	0.5	<0.5	0.6
Nickel	µg/g	100	1	7	11
Selenium	µg/g	2.4	0.8	<0.8	<0.8
Silver	µg/g	20	0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5
Uranium	µg/g	23	0.50	<0.50	<0.50
Vanadium	µg/g	86	0.4	19.5	20.8
Zinc	µg/g	340	5	19	45

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-689 Brant St.

SAMPLED BY:KP

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

DATE RECEIVED: 2023-01-13 **DATE REPORTED: 2023-01-19**

				SAMPLE DESCRIPTION:	BH1 SS1	BH2 SS1
				SAMPLE TYPE:	Soil	Soil
				DATE SAMPLED:	2023-01-12 12:00	2023-01-12
Parameter	**Unit**	**G / S**	**RDL**		**4684999**	**4685011**
Electrical Conductivity (2:1)	mS/cm	0.7	0.005		0.284	**0.902**
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	N/A		4.54	**11.6**
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA			8.06

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4684999 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil). SAR is a calculated parameter.
FOC - Samples were analysed and are reported in triplicate.

4685011 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil). SAR is a calculated parameter.
FOC - Samples were analysed and are reported in triplicate. FOC was calculated from the Total Organic Matter, which was determined using the Loss on Ignition procedure.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-689 Brant St.

SAMPLED BY:KP

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

DATE RECEIVED: 2023-01-13

DATE REPORTED: 2023-01-19

		SAMPLE DESCRIPTION:		BH1 SS1	BH2 SS1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2023-01-12 12:00	2023-01-12
Parameter	**Unit**	**G / S**	**RDL**	**4684999**	**4685011**
Naphthalene	µg/g	0.6	0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	0.99	0.05	<0.05	<0.05
Moisture Content	%		0.1	9.8	12.6
Surrogate	**Unit**	**Acceptable Limits**			
Naphthalene-d8	%	50-140		110	85
Acridine-d9	%	50-140		75	85
Terphenyl-d14	%	50-140		75	80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4684999-4685011 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.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-689 Brant St.

SAMPLED BY:KP

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

DATE RECEIVED: 2023-01-13

DATE REPORTED: 2023-01-19

		SAMPLE DESCRIPTION:		BH1 SS5	BH2 SS2	BH2 SS22	BH2 SS5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2023-01-12 12:00	2023-01-12	2023-01-12	2023-01-12
Parameter	**Unit**	**G / S**	**RDL**	**4685001**	**4685012**	**4685013**	**4685014**
Benzene	µg/g	0.21	0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	2	0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05	<0.05	<0.05	<0.05
F1 (C6 - C10)	µg/g	55	5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA	NA	NA
Moisture Content	%		0.1	18.0	12.0	14.7	15.3
Surrogate	**Unit**	**Acceptable Limits**					
Toluene-d8	% Recovery	60-140		124	109	111	108
Terphenyl	%	60-140		84	83	89	83

Certified By:

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-689 Brant St.

SAMPLED BY:KP

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

DATE RECEIVED: 2023-01-13 **DATE REPORTED: 2023-01-19**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4685001-4685014 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
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 contribution.
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 with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Exceedance Summary

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
4685011	BH2 SS1	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	0.902
4685011	BH2 SS1	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	11.6

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-689 Brant St.

SAMPLED BY:KP

Soil Analysis

RPT Date: Jan 19, 2023			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) - Metals (Including Hydrides) (Soil)															
Antimony	4684999	4684999	<0.8	<0.8	NA	< 0.8	99%	70%	130%	89%	80%	120%	87%	70%	130%
Arsenic	4684999	4684999	3	3	NA	< 1	118%	70%	130%	102%	80%	120%	98%	70%	130%
Barium	4684999	4684999	20.1	20.1	0.0%	< 2.0	105%	70%	130%	100%	80%	120%	102%	70%	130%
Beryllium	4684999	4684999	<0.4	<0.4	NA	< 0.4	95%	70%	130%	95%	80%	120%	101%	70%	130%
Boron	4684999	4684999	<5	<5	NA	< 5	77%	70%	130%	93%	80%	120%	86%	70%	130%
Cadmium	4684999	4684999	<0.5	<0.5	NA	< 0.5	87%	70%	130%	107%	80%	120%	107%	70%	130%
Chromium	4684999	4684999	9	8	NA	< 5	104%	70%	130%	106%	80%	120%	104%	70%	130%
Cobalt	4684999	4684999	3.9	3.9	0.0%	< 0.5	110%	70%	130%	108%	80%	120%	108%	70%	130%
Copper	4684999	4684999	12.3	12.3	0.0%	< 1.0	96%	70%	130%	105%	80%	120%	102%	70%	130%
Lead	4684999	4684999	6	6	0.0%	< 1	108%	70%	130%	106%	80%	120%	102%	70%	130%
Molybdenum	4684999	4684999	<0.5	<0.5	NA	< 0.5	108%	70%	130%	111%	80%	120%	110%	70%	130%
Nickel	4684999	4684999	7	6	15.4%	< 1	99%	70%	130%	99%	80%	120%	95%	70%	130%
Selenium	4684999	4684999	<0.8	<0.8	NA	< 0.8	134%	70%	130%	103%	80%	120%	104%	70%	130%
Silver	4684999	4684999	<0.5	<0.5	NA	< 0.5	102%	70%	130%	111%	80%	120%	103%	70%	130%
Thallium	4684999	4684999	<0.5	<0.5	NA	< 0.5	117%	70%	130%	107%	80%	120%	105%	70%	130%
Uranium	4684999	4684999	<0.50	<0.50	NA	< 0.50	115%	70%	130%	106%	80%	120%	103%	70%	130%
Vanadium	4684999	4684999	19.5	18.7	4.2%	< 0.4	118%	70%	130%	108%	80%	120%	106%	70%	130%
Zinc	4684999	4684999	19	18	NA	< 5	107%	70%	130%	104%	80%	120%	103%	70%	130%

Comments: NA Signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.

QA Qualifier for metals - Selenium: For a multi-element scan for lab control standards and matrix spikes, up to 10% of analytes may exceed the quoted limits by up to 10% absolute and it is considered acceptable.

O. Reg. 153(511) - ORPs (Soil)								
Electrical Conductivity (2:1)	4679936	8.34	9.60	14.0%	< 0.005	96%	80%	120%
Sodium Adsorption Ratio (2:1) (Calc.)	4685182	1.60	1.57	1.9%	NA	NA		

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

O. Reg. 153(511) - ORPs (Soil)								
pH, 2:1 CaCl2 Extraction	4681358	7.34	7.56	2.9%		98%	80%	120%

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Duplicate NA: results are under 5X the RDL and will not be calculated.

Certified By:

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Results relate only to the items tested. Results apply to samples as received.

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Quality Assurance

CLIENT NAME: EXP SERVICES INC
AGAT WORK ORDER: 23H987985
PROJECT: PHASE TWO ESA
ATTENTION TO: Jennifer Hayman
SAMPLING SITE:688-689 Brant St.
SAMPLED BY:KP

Trace Organics Analysis

RPT Date: Jan 19, 2023			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	4685171		<0.05	<0.05	NA	< 0.05	96%	50%	140%	90%	50%	140%	98%	50%	140%
Acenaphthylene	4685171		<0.05	<0.05	NA	< 0.05	76%	50%	140%	80%	50%	140%	90%	50%	140%
Acenaphthene	4685171		<0.05	<0.05	NA	< 0.05	92%	50%	140%	108%	50%	140%	113%	50%	140%
Fluorene	4685171		<0.05	<0.05	NA	< 0.05	70%	50%	140%	83%	50%	140%	90%	50%	140%
Phenanthrene	4685171		<0.05	<0.05	NA	< 0.05	64%	50%	140%	95%	50%	140%	90%	50%	140%
Anthracene	4685171		<0.05	<0.05	NA	< 0.05	68%	50%	140%	98%	50%	140%	90%	50%	140%
Fluoranthene	4685171		<0.05	<0.05	NA	< 0.05	105%	50%	140%	78%	50%	140%	93%	50%	140%
Pyrene	4685171		<0.05	<0.05	NA	< 0.05	74%	50%	140%	73%	50%	140%	73%	50%	140%
Benz(a)anthracene	4685171		<0.05	<0.05	NA	< 0.05	63%	50%	140%	75%	50%	140%	85%	50%	140%
Chrysene	4685171		<0.05	<0.05	NA	< 0.05	73%	50%	140%	88%	50%	140%	105%	50%	140%
Benzo(b)fluoranthene	4685171		<0.05	<0.05	NA	< 0.05	97%	50%	140%	105%	50%	140%	115%	50%	140%
Benzo(k)fluoranthene	4685171		<0.05	<0.05	NA	< 0.05	93%	50%	140%	98%	50%	140%	115%	50%	140%
Benzo(a)pyrene	4685171		<0.05	<0.05	NA	< 0.05	74%	50%	140%	108%	50%	140%	83%	50%	140%
Indeno(1,2,3-cd)pyrene	4685171		<0.05	<0.05	NA	< 0.05	63%	50%	140%	88%	50%	140%	88%	50%	140%
Dibenz(a,h)anthracene	4685171		<0.05	<0.05	NA	< 0.05	80%	50%	140%	90%	50%	140%	78%	50%	140%
Benzo(g,h,i)perylene	4685171		<0.05	<0.05	NA	< 0.05	86%	50%	140%	93%	50%	140%	78%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	4685014	4685014	<0.02	<0.02	NA	< 0.02	99%	60%	140%	96%	60%	140%	113%	60%	140%
Toluene	4685014	4685014	<0.05	<0.05	NA	< 0.05	92%	60%	140%	112%	60%	140%	93%	60%	140%
Ethylbenzene	4685014	4685014	<0.05	<0.05	NA	< 0.05	86%	60%	140%	106%	60%	140%	91%	60%	140%
m & p-Xylene	4685014	4685014	<0.05	<0.05	NA	< 0.05	102%	60%	140%	96%	60%	140%	101%	60%	140%
o-Xylene	4685014	4685014	<0.05	<0.05	NA	< 0.05	100%	60%	140%	106%	60%	140%	104%	60%	140%
F1 (C6 - C10)	4685014	4685014	<5	<5	NA	< 5	89%	60%	140%	86%	60%	140%	93%	60%	140%
F2 (C10 to C16)	4681352		12	14	NA	< 10	95%	60%	140%	102%	60%	140%	91%	60%	140%
F3 (C16 to C34)	4681352		98	73	NA	< 50	110%	60%	140%	120%	60%	140%	83%	60%	140%
F4 (C34 to C50)	4681352		<50	<50	NA	< 50	107%	60%	140%	125%	60%	140%	87%	60%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:



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Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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http://www.agatlabs.com

QC Exceedance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

ATTENTION TO: Jennifer Hayman

RPT Date: Jan 19, 2023

PARAMETER	Sample Id	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
			Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Soil)										
Selenium	4684999	134%	70%	130%	103%	80%	120%	104%	70%	130%

Comments: NA Signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.

QA Qualifier for metals - Selenium: For a multi-element scan for lab control standards and matrix spikes, up to 10% of analytes may exceed the quoted limits by up to 10% absolute and it is considered acceptable.

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-689 Brant St.

SAMPLED BY:KP

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-689 Brant St.

SAMPLED BY:KP

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
1 and 2 Methlynaphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Benzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Toluene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Ethylbenzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
m & p-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
o-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Xylenes (Total)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
F1 (C6 - C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23H987985

PROJECT: PHASE TWO ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-689 Brant St.

SAMPLED BY:KP

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories
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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: EXP Services Inc.
Contact: Jennifer Hayman
Address: 1266 South Service Rd unit C1-1
Stoney Creek, ON
Phone: 905-573-4000 Fax:
Reports to be sent to:
1. Email: Jennifer.Hayman@exp.com
2. Email: Kelsey.Proks@exp.com

Project Information:

Project: 688-698 Brant St.
Site Location: PHASE TWO ESA
Sampled By: KP
AGAT Quote #: 734298 PO: GTR-21018895-B0
Please note: If quotation number is not provided, client will be billed full price for analysis. PHASE 2

Invoice Information:

Bill To Same: Yes ☑ No ☐
Company: Exp Services Inc
Contact:
Address:
Email: AP@exp.com

Regulatory Requirements:

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Excess Soils R406
Table ____ (Indicate One)
☐ Regulation 558
☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
____ (Region)
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
____ (Indicate One)

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

Report Guideline on Certificate of Analysis ☐ Yes ☒ No

Sample Matrix Legend

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

Laboratory Use Only

Work Order #: 23H987985
Cooler Quantity: MD COOLER
Arrival Temperatures: 1.9 | 2.0 | 2.1
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: LOOSE ICE

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply): ____
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics (0.2 µm filtered)	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: pH	O. Reg 153: EC / SAR	O. Reg 153: Aroclors	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: Include Moisture ☐ Sulphide ☐	Potentially Hazardous or High Concentration (Y/N)
BH1 SS1	Jan. 12/23	PM	1	S			X			X			X						
BH1 SS5		PM	2	S					X										
BH1 SS6		PM	2	S	HOLD				X										
BH2 SS1		AM	1	S			X			X		X	X						
BH2 SS2		AM	2	S					X										
BH2 SS3		AM	2	S					X										
BH2 SS5		AM	2	S					X										

Samples Relinquished By (Print Name and Sign): Nicole McQuaid	Date 01/13/23	Time 1:15 pm	Samples Received By (Print Name and Sign): DMC	Date Jan 13/23	Time 1:30 pm
Samples Relinquished By (Print Name and Sign): DMC	Date Jan 13/23	Time 3Pm	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page ____ of ____
N°: T - 136737

AGAT Laboratories

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CLIENT NAME: EXP SERVICES INC
1266 SOUTH SERVICE ROAD, SUITE C1-1
STONEY CREEK , ON L8E 5R9
(905) 573-4000
ATTENTION TO: Jennifer Hayman
PROJECT: Phase Two ESA
AGAT WORK ORDER: 23H988817
SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
DATE REPORTED: Jan 24, 2023
PAGES (INCLUDING COVER): 14
VERSION*: 1

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

Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. Measurement Uncertainty is not taken into consideration when stating conformity with a specified requirement.

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Certificate of Analysis

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2023-01-17 **DATE REPORTED: 2023-01-24**

		SAMPLE DESCRIPTION:		BH4 SS4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2023-01-16
Parameter	Unit	G / S	RDL	4693219
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	7.74

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4693219 pH was determined on the 0.01M CaCl2 extract obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil).

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Including Hydrides) (Soil)

DATE RECEIVED: 2023-01-17

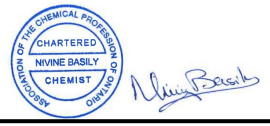
DATE REPORTED: 2023-01-24

		SAMPLE DESCRIPTION:		BH4 SS1	BH5 SS2
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2023-01-16	2023-01-17
Parameter	Unit	G / S	RDL	4693211	4693294
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	3	8
Barium	µg/g	390	2.0	21.3	34.5
Beryllium	µg/g	4	0.4	<0.4	<0.4
Boron	µg/g	120	5	5	<5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	5	9	11
Cobalt	µg/g	22	0.5	4.6	4.7
Copper	µg/g	140	1.0	15.4	22.4
Lead	µg/g	120	1	6	47
Molybdenum	µg/g	6.9	0.5	<0.5	0.6
Nickel	µg/g	100	1	9	10
Selenium	µg/g	2.4	0.8	<0.8	<0.8
Silver	µg/g	20	0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5
Uranium	µg/g	23	0.50	<0.50	0.53
Vanadium	µg/g	86	0.4	19.0	20.8
Zinc	µg/g	340	5	22	37

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
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Analysis performed at AGAT Toronto (unless marked by *)

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Certificate of Analysis

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2023-01-17

DATE REPORTED: 2023-01-24

		SAMPLE DESCRIPTION:		BH4 SS1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2023-01-16
Parameter	Unit	G / S	RDL	4693211
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.165
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	N/A	2.05

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4693211 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2023-01-17

DATE REPORTED: 2023-01-24

		SAMPLE DESCRIPTION:		BH4 SS1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2023-01-16
Parameter	**Unit**	**G / S**	**RDL**	**4693211**
Naphthalene	µg/g	0.6	0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	0.99	0.05	<0.05
Moisture Content	%		0.1	9.6
Surrogate	**Unit**	**Acceptable Limits**		
Naphthalene-d8	%	50-140		78
Acridine-d9	%	50-140		88
Terphenyl-d14	%	50-140		98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4693211 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.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2023-01-17 **DATE REPORTED: 2023-01-24**

		SAMPLE DESCRIPTION:		BH4 SS1	BH5 SS1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2023-01-16	2023-01-17
Parameter	**Unit**	**G / S**	**RDL**	**4693211**	**4693221**
Polychlorinated Biphenyls	µg/g	0.35	0.1	<0.1	<0.1
Moisture Content	%		0.1	9.6	10.6
Surrogate	**Unit**	**Acceptable Limits**			
Decachlorobiphenyl	%	50-140		76	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4693211-4693221 Results are based on the dry weight of soil extracted.
PCB total is a calculated parameter. The calculated value is the sum of Aroclor 1242, Aroclor 1248, Aroclor 1254 and Aroclor 1260.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2023-01-17

DATE REPORTED: 2023-01-24

		SAMPLE DESCRIPTION:		BH4 SS2	BH4 SS4	BH5 SS1
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2023-01-16	2023-01-16	2023-01-17
Parameter	**Unit**	**G / S**	**RDL**	**4693218**	**4693219**	**4693221**
Benzene	µg/g	0.21	0.02	<0.02	<0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	2	0.05	<0.05	<0.05	<0.05
m & p-Xylene	µg/g		0.05	<0.05	<0.05	<0.05
o-Xylene	µg/g		0.05	<0.05	<0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05	<0.05	<0.05
F1 (C6 - C10)	µg/g	55	5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA	NA
Moisture Content	%		0.1	10.2	18.1	10.6
Surrogate	**Unit**	**Acceptable Limits**				
Toluene-d8	% Recovery	60-140		101	94	94
Terphenyl	%	60-140		67	73	76

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2023-01-17 **DATE REPORTED: 2023-01-24**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4693218-4693221 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
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 contribution.
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 with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested. Results apply to samples as received.

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Jan 24, 2023			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) - Metals (Including Hydrides) (Soil)															
Antimony	4692244		<0.8	<0.8	NA	< 0.8	112%	70%	130%	86%	80%	120%	80%	70%	130%
Arsenic	4692244		<1	<1	NA	< 1	121%	70%	130%	102%	80%	120%	101%	70%	130%
Barium	4692244		10.4	10.6	1.9%	< 2.0	107%	70%	130%	104%	80%	120%	101%	70%	130%
Beryllium	4692244		<0.4	<0.4	NA	< 0.4	101%	70%	130%	96%	80%	120%	112%	70%	130%
Boron	4692244		<5	<5	NA	< 5	86%	70%	130%	102%	80%	120%	116%	70%	130%
Cadmium	4692244		<0.5	<0.5	NA	< 0.5	114%	70%	130%	106%	80%	120%	105%	70%	130%
Chromium	4692244		<5	<5	NA	< 5	108%	70%	130%	112%	80%	120%	102%	70%	130%
Cobalt	4692244		1.4	1.4	NA	< 0.5	109%	70%	130%	108%	80%	120%	101%	70%	130%
Copper	4692244		2.4	2.4	NA	< 1.0	104%	70%	130%	113%	80%	120%	99%	70%	130%
Lead	4692244		2	2	NA	< 1	112%	70%	130%	110%	80%	120%	103%	70%	130%
Molybdenum	4692244		<0.5	<0.5	NA	< 0.5	113%	70%	130%	114%	80%	120%	116%	70%	130%
Nickel	4692244		3	3	NA	< 1	114%	70%	130%	108%	80%	120%	102%	70%	130%
Selenium	4692244		<0.8	<0.8	NA	< 0.8	130%	70%	130%	106%	80%	120%	104%	70%	130%
Silver	4692244		<0.5	<0.5	NA	< 0.5	111%	70%	130%	103%	80%	120%	92%	70%	130%
Thallium	4692244		<0.5	<0.5	NA	< 0.5	110%	70%	130%	106%	80%	120%	99%	70%	130%
Uranium	4692244		<0.50	<0.50	NA	< 0.50	118%	70%	130%	102%	80%	120%	110%	70%	130%
Vanadium	4692244		8.3	8.1	2.4%	< 0.4	115%	70%	130%	106%	80%	120%	102%	70%	130%
Zinc	4692244		9	8	NA	< 5	114%	70%	130%	115%	80%	120%	111%	70%	130%

Comments: NA Signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.

O. Reg. 153(511) - ORPs (Soil)									
Electrical Conductivity (2:1)	4698249	0.962	0.988	2.7%	< 0.005	97%	80%	120%	
Sodium Adsorption Ratio (2:1) (Calc.)	4698249	2.62	2.62	0.0%	NA				

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

O. Reg. 153(511) - ORPs (Soil)									
pH, 2:1 CaCl2 Extraction	4693395	7.25	7.34	1.1%	NA	100%	80%	120%	

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Certified By:



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Results relate only to the items tested. Results apply to samples as received.

AGAT Laboratories

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

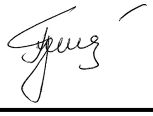
SAMPLED BY:

Trace Organics Analysis

RPT Date: Jan 24, 2023			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	4695364		<0.05	<0.05	NA	< 0.05	90%	50%	140%	85%	50%	140%	83%	50%	140%
Acenaphthylene	4695364		<0.05	<0.05	NA	< 0.05	98%	50%	140%	90%	50%	140%	83%	50%	140%
Acenaphthene	4695364		<0.05	<0.05	NA	< 0.05	96%	50%	140%	83%	50%	140%	73%	50%	140%
Fluorene	4695364		<0.05	<0.05	NA	< 0.05	97%	50%	140%	78%	50%	140%	110%	50%	140%
Phenanthrene	4695364		<0.05	<0.05	NA	< 0.05	89%	50%	140%	83%	50%	140%	105%	50%	140%
Anthracene	4695364		<0.05	<0.05	NA	< 0.05	114%	50%	140%	108%	50%	140%	93%	50%	140%
Fluoranthene	4695364		<0.05	<0.05	NA	< 0.05	103%	50%	140%	78%	50%	140%	78%	50%	140%
Pyrene	4695364		<0.05	<0.05	NA	< 0.05	107%	50%	140%	95%	50%	140%	85%	50%	140%
Benz(a)anthracene	4695364		<0.05	<0.05	NA	< 0.05	69%	50%	140%	118%	50%	140%	110%	50%	140%
Chrysene	4695364		<0.05	<0.05	NA	< 0.05	63%	50%	140%	115%	50%	140%	113%	50%	140%
Benzo(b)fluoranthene	4695364		<0.05	<0.05	NA	< 0.05	110%	50%	140%	83%	50%	140%	88%	50%	140%
Benzo(k)fluoranthene	4695364		<0.05	<0.05	NA	< 0.05	118%	50%	140%	78%	50%	140%	93%	50%	140%
Benzo(a)pyrene	4695364		<0.05	<0.05	NA	< 0.05	114%	50%	140%	90%	50%	140%	80%	50%	140%
Indeno(1,2,3-cd)pyrene	4695364		<0.05	<0.05	NA	< 0.05	74%	50%	140%	88%	50%	140%	85%	50%	140%
Dibenz(a,h)anthracene	4695364		<0.05	<0.05	NA	< 0.05	104%	50%	140%	88%	50%	140%	118%	50%	140%
Benzo(g,h,i)perylene	4695364		<0.05	<0.05	NA	< 0.05	96%	50%	140%	80%	50%	140%	118%	50%	140%
O. Reg. 153(511) - PCBs (Soil)															
Polychlorinated Biphenyls	4695354		< 0.1	< 0.1	NA	< 0.1	105%	50%	140%	93%	50%	140%	96%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	4693399		<0.02	<0.02	NA	< 0.02	98%	60%	140%	102%	60%	140%	104%	60%	140%
Toluene	4693399		<0.05	<0.05	NA	< 0.05	103%	60%	140%	102%	60%	140%	105%	60%	140%
Ethylbenzene	4693399		<0.05	<0.05	NA	< 0.05	99%	60%	140%	104%	60%	140%	105%	60%	140%
m & p-Xylene	4693399		<0.05	<0.05	NA	< 0.05	103%	60%	140%	99%	60%	140%	104%	60%	140%
o-Xylene	4693399		<0.05	<0.05	NA	< 0.05	104%	60%	140%	95%	60%	140%	107%	60%	140%
F1 (C6 - C10)	4693399		<5	<5	NA	< 5	95%	60%	140%	98%	60%	140%	101%	60%	140%
F2 (C10 to C16)	4699279		<10	<10	NA	< 10	109%	60%	140%	129%	60%	140%	124%	60%	140%
F3 (C16 to C34)	4699279		<50	<50	NA	< 50	125%	60%	140%	132%	60%	140%	136%	60%	140%
F4 (C34 to C50)	4699279		<50	<50	NA	< 50	106%	60%	140%	133%	60%	140%	123%	60%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:



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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES

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Method Summary

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AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
1 and 2 Methlynaphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Polychlorinated Biphenyls	ORG-91-5113	modified from EPA SW-846 3570 & 8082A	GC/ECD
Decachlorobiphenyl	ORG-91-5113	modified from EPA SW-846 3541 & 8082A	GC/ECD
Benzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Toluene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Ethylbenzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
m & p-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
o-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Xylenes (Total)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
F1 (C6 - C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23H988817

PROJECT: Phase Two ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

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AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 23H888817

Cooler Quantity: MP COOLER

Arrival Temperatures: 2.8 | 3.0 | 3.3
3.7 | 3.1 | 3.3

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: LOOSE ICE

Report Information:

Company: EXP Services Inc.
Contact: Jennifer Hayman
Address: 1266 South Service Rd. Unit C1-1
Stoney Creek, ON
Phone: 905-573-4000 Fax:
Reports to be sent to:
1. Email: Jennifer.Hayman@exp.com
2. Email: Kelsey.Proks@exp.com

Regulatory Requirements:

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Excess Soils R406
Table ____ (Indicate One)

☐ Regulation 558

☐ CCME

☐ Sewer Use ☐ Sanitary ☐ Storm
____ (Region)

☐ Prov. Water Quality Objectives (PWQO)

☐ Other
____ (Indicate One)

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

Report Guideline on *Certificate of Analysis* ☐ Yes ☑ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

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

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: Phase Two ESA
Site Location: 688-698 Brant St.
Sampled By: KP
AGAT Quote #: 734298 PO: GTR-2101895-B0
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☐ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: ~~VOC~~ EC/SAR	O. Reg 153: ~~Acids~~ pH	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: Include Moisture ☐ Sulphide ☐	Potentially Hazardous or High Concentration (Y/N)
BH4 SS1	Jan. 16/23	PM AM PM	1	S			X		X	X	X							
BH4 SS2	↓	PM AM PM	2	S					X									
BH4 SS4		PM AM PM	2	S					X				X					
BH4 SS6	↓	PM AM PM	2	S	ON HOLD				X									
BH5 SS1	Jan17/23	AM AM PM	3	S			X		X		X							
BH5 SS2	Jan17/23	AM AM PM	3	S	ON HOLD PHCs/BTEX/ PCBs. Analyze metals		X		X		X							
		AM PM																
		AM PM																
		AM PM																
		AM PM																
		AM PM																

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Melina Tnogessen	Jan 17/23	2:20 pm		Jan 17/23	2:30 PM
	Jan 17/23	3PM		1/17/23	4:55 PM

Page 1 of 1

N°: T-136734

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CLIENT NAME: EXP SERVICES INC
1266 SOUTH SERVICE ROAD, SUITE C1-1
STONEY CREEK , ON L8E 5R9
(905) 573-4000
ATTENTION TO: Jennifer Hayman
PROJECT: PHASE TWO ESA
AGAT WORK ORDER: 23T991517
TRACE ORGANICS REVIEWED BY: Radhika Chakraberty, Trace Organics Lab Manager
WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Lab Manager
DATE REPORTED: Feb 01, 2023
PAGES (INCLUDING COVER): 10
VERSION*: 1

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

Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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Certificate of Analysis

AGAT WORK ORDER: 23T991517

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-698 Brant St.

SAMPLED BY:KP

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

DATE RECEIVED: 2023-01-25 **DATE REPORTED: 2023-02-01**

		SAMPLE DESCRIPTION:		**MW4**
		SAMPLE TYPE:		**Water**
		DATE SAMPLED:		**2023-01-24 12:50**
Parameter	**Unit**	**G / S**	**RDL**	**4718693**
Polychlorinated Biphenyls	µg/L	7.8	0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**		
Decachlorobiphenyl	%	60-140		80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4718693 PCB total is a calculated parameter. The calculated value is the sum of Aroclor 1242, Aroclor 1248, Aroclor 1254 and Aroclor 1260.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: R. Chakraberty

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Certificate of Analysis

AGAT WORK ORDER: 23T991517

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-698 Brant St.

SAMPLED BY:KP

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

DATE RECEIVED: 2023-01-25 **DATE REPORTED: 2023-02-01**

				SAMPLE DESCRIPTION:	MW1	MW2	MW4	Duplicate 1	Trip Blank
				SAMPLE TYPE:	Water	Water	Water	Water	Water
				DATE SAMPLED:	2023-01-24 12:05	2023-01-24 11:20	2023-01-24 12:50	2023-01-24 12:50	2023-01-24
Parameter	**Unit**	**G / S**	**RDL**		**4718691**	**4718692**	**4718693**	**4718712**	**4718713**
Benzene	µg/L	44	0.20		<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	18000	0.20		<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	2300	0.10		<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20		<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L		0.10		<0.10	<0.10	<0.10	<0.10	<0.10
Xylenes (Total)	µg/L	4200	0.20		<0.20	<0.20	<0.20	<0.20	<0.20
F1 (C6 - C10)	µg/L	750	25		<25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25		<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100		<100	<100	<100	<100	<100
F3 (C16 to C34)	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		NA	NA	NA	NA	NA
Sediment					1	1	1	1	1
Surrogate	**Unit**	**Acceptable Limits**							
Toluene-d8	% Recovery	60-140			82	81	82	78	79
Terphenyl	% Recovery	60-140			84	90	93	86	88

Certified By: R. Chakraberty

Results relate only to the items tested. Results apply to samples as received.

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: 23T991517

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-698 Brant St.

SAMPLED BY:KP

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

DATE RECEIVED: 2023-01-25 **DATE REPORTED: 2023-02-01**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4718691-4718713 The C6-C10 fraction is calculated using Toluene response factor.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
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 contribution.
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 with the contribution of PAHs. Under Ontario Regulation 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: R. Chakraberty

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Certificate of Analysis

AGAT WORK ORDER: 23T991517

PROJECT: PHASE TWO ESA

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-698 Brant St.

SAMPLED BY:KP

O. Reg. 153(511) - Metals (Including Hydrides) (Water)

DATE RECEIVED: 2023-01-25

DATE REPORTED: 2023-02-01

		SAMPLE DESCRIPTION:		MW2	MW4	Duplicate 1
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2023-01-24 11:20	2023-01-24 12:50	2023-01-24 12:50
Parameter	Unit	G / S	RDL	4718692	4718693	4718712
Dissolved Antimony	µg/L	20000	1.0	<1.0	<1.0	<1.0
Dissolved Arsenic	µg/L	1900	1.0	1.3	<1.0	<1.0
Dissolved Barium	µg/L	29000	2.0	384	66.0	65.2
Dissolved Beryllium	µg/L	67	0.50	<0.50	<0.50	<0.50
Dissolved Boron	µg/L	45000	10.0	201	43.8	45.9
Dissolved Cadmium	µg/L	2.7	0.20	<0.20	<0.20	<0.20
Dissolved Chromium	µg/L	810	2.0	<2.0	<2.0	<2.0
Dissolved Cobalt	µg/L	66	0.50	0.61	<0.50	<0.50
Dissolved Copper	µg/L	87	1.0	1.2	<1.0	<1.0
Dissolved Lead	µg/L	25	0.50	2.43	0.83	0.78
Dissolved Molybdenum	µg/L	9200	0.50	13.1	0.65	<0.50
Dissolved Nickel	µg/L	490	1.0	1.2	<1.0	1.0
Dissolved Selenium	µg/L	63	1.0	<1.0	<1.0	2.3
Dissolved Silver	µg/L	1.5	0.20	<0.20	<0.20	<0.20
Dissolved Thallium	µg/L	510	0.30	<0.30	<0.30	<0.30
Dissolved Uranium	µg/L	420	0.50	5.68	1.05	0.97
Dissolved Vanadium	µg/L	250	0.40	0.75	0.85	1.10
Dissolved Zinc	µg/L	1100	5.0	<5.0	<5.0	<5.0

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

4718692-4718712 Metals analysis completed on a filtered sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Quality Assurance

CLIENT NAME: EXP SERVICES INC

PROJECT: PHASE TWO ESA

SAMPLING SITE:688-698 Brant St.

AGAT WORK ORDER: 23T991517

ATTENTION TO: Jennifer Hayman

SAMPLED BY:KP

Trace Organics Analysis

RPT Date: Feb 01, 2023			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) - PHCs F1 - F4 (Water)															
F2 (C10 to C16)	4719247		<100	<100	NA	< 100	97%	60%	140%	61%	60%	140%	63%	60%	140%
F3 (C16 to C34)	4719247		<100	<100	NA	< 100	103%	60%	140%	68%	60%	140%	68%	60%	140%
F4 (C34 to C50)	4719247		<100	<100	NA	< 100	88%	60%	140%	71%	60%	140%	77%	60%	140%
O. Reg. 153(511) - PCBs (Water)															
Polychlorinated Biphenyls	4722042		< 0.1	< 0.1	NA	< 0.1	103%	50%	140%	108%	50%	140%	82%	50%	140%

Comments: Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: R. Chakraberty

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. RPDs calculated using raw data. The RPD may not be reflective of duplicate values shown, due to rounding of final results.

Results relate only to the items tested. Results apply to samples as received.

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23T991517

PROJECT: PHASE TWO ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-698 Brant St.

SAMPLED BY:KP

Water Analysis

RPT Date: Feb 01, 2023			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) - Metals (Including Hydrides) (Water)															
Dissolved Antimony	4718692	4718692	<1.0	<1.0	NA	< 1.0	106%	70%	130%	100%	80%	120%	97%	70%	130%
Dissolved Arsenic	4718692	4718692	1.3	1.1	NA	< 1.0	106%	70%	130%	92%	80%	120%	108%	70%	130%
Dissolved Barium	4718692	4718692	384	367	4.5%	< 2.0	101%	70%	130%	101%	80%	120%	106%	70%	130%
Dissolved Beryllium	4718692	4718692	<0.50	<0.50	NA	< 0.50	102%	70%	130%	99%	80%	120%	118%	70%	130%
Dissolved Boron	4718692	4718692	201	190	5.6%	< 10.0	101%	70%	130%	99%	80%	120%	112%	70%	130%
Dissolved Cadmium	4718692	4718692	<0.20	<0.20	NA	< 0.20	99%	70%	130%	96%	80%	120%	96%	70%	130%
Dissolved Chromium	4718692	4718692	<2.0	<2.0	NA	< 2.0	104%	70%	130%	99%	80%	120%	102%	70%	130%
Dissolved Cobalt	4718692	4718692	0.61	<0.50	NA	< 0.50	104%	70%	130%	98%	80%	120%	99%	70%	130%
Dissolved Copper	4718692	4718692	1.2	1.3	NA	< 1.0	103%	70%	130%	97%	80%	120%	93%	70%	130%
Dissolved Lead	4718692	4718692	2.43	1.82	NA	< 0.50	103%	70%	130%	95%	80%	120%	89%	70%	130%
Dissolved Molybdenum	4718692	4718692	13.1	13.0	0.8%	< 0.50	107%	70%	130%	104%	80%	120%	103%	70%	130%
Dissolved Nickel	4718692	4718692	1.2	1.4	NA	< 1.0	105%	70%	130%	97%	80%	120%	95%	70%	130%
Dissolved Selenium	4718692	4718692	<1.0	2.1	NA	< 1.0	106%	70%	130%	95%	80%	120%	112%	70%	130%
Dissolved Silver	4718692	4718692	<0.20	<0.20	NA	< 0.20	105%	70%	130%	97%	80%	120%	90%	70%	130%
Dissolved Thallium	4718692	4718692	<0.30	<0.30	NA	< 0.30	102%	70%	130%	99%	80%	120%	95%	70%	130%
Dissolved Uranium	4718692	4718692	5.68	5.47	3.8%	< 0.50	101%	70%	130%	101%	80%	120%	100%	70%	130%
Dissolved Vanadium	4718692	4718692	0.75	0.73	NA	< 0.40	104%	70%	130%	100%	80%	120%	105%	70%	130%
Dissolved Zinc	4718692	4718692	<5.0	<5.0	NA	< 5.0	105%	70%	130%	93%	80%	120%	100%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.

Certified By:



AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. RPDs calculated using raw data. The RPD may not be reflective of duplicate values shown, due to rounding of final results.

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http://www.agatlabs.com

Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23T991517

PROJECT: PHASE TWO ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-698 Brant St.

SAMPLED BY:KP

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Polychlorinated Biphenyls	ORG-91-5112	modified from EPA SW-846 3510 & 8082A	GC/ECD
Decachlorobiphenyl	ORG-91-5112	modified from EPA SW-846 3510 & 8082A	GC/ECD
Benzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Toluene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Ethylbenzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
m & p-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
o-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Xylenes (Total)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F1 (C6 - C10)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Sediment			N/A

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23T991517

PROJECT: PHASE TWO ESA

ATTENTION TO: Jennifer Hayman

SAMPLING SITE:688-698 Brant St.

SAMPLED BY:KP

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Dissolved Antimony	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Arsenic	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Barium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Beryllium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Boron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cadmium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Chromium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cobalt	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Copper	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Lead	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Molybdenum	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Nickel	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Selenium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Silver	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Thallium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Uranium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Vanadium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Zinc	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS

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Mississauga, Ontario L4Z 1Y2
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webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 23991517

Cooler Quantity: 1 BLK

Arrival Temperatures: 2.0 | 1.7 | 1.5

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: (00)e VC

Report Information:

Company: EXP Services Inc.
Contact: Jennifer Hayman
Address: 1266 South Service Rd Unit C1-1
Storey Creek, ON
Phone: 905-573-4000 Fax:
Reports to be sent to:
1. Email: Jennifer.Hayman@exp.com
2. Email: Kelsey.Proks@exp.com

Regulatory Requirements:

(Please check all applicable boxes)

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

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

☐ Excess Soils R406
Table _____ *Indicate One*

☐ Regulation 558

☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
_____ *Region*

☐ Prov. Water Quality Objectives (PWQO)

☐ Other
_____ *Indicate One*

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

Report Guideline on *Certificate of Analysis* ☐ Yes ☑ No

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

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

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: PHASE TWO ESA
Site Location: 688-698 Brant St.
Sampled By: KP
AGAT Quote #: 73429B PO: GTR-20188895-B0
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☐ No ☐

Company: Exp Services Inc.
Contact:
Address:
Email: APC exp.com

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: VOC	O. Reg 153: Aroclors	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: Include Moisture ☐ Sulphide ☐	Potentially Hazardous or High Concentration (Y/N)
MW1	Jan. 24/23	12:05 PM	5	GW					X									
MW2	↓	11:20 AM/PM	9	↓		Y	X		X									
MW4		12:50 AM/PM	11			Y	X		X		X							
Duplicate 1		12:50 AM/PM	9			Y	X		X									
Trip Blank		AM/PM							X									
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Kelsey Proks	Jan. 25/23	10:30am		Jan. 25/23	3:03pm

Page 1 of 1

N°: T-142980

Appendix F – Phase Two Conceptual Site Model

Phase Two Conceptual Site Model – 688-698 Brant Street, Burlington, ON

This section presents a Phase Two Conceptual Site Model (P2CSM), as it relates to the Site designated as the property municipally addressed as 688, 694 and 698 Brant Street in Burlington, Ontario, providing a narrative, graphical and tabulated description integrating information related to the Site geologic and hydrogeologic conditions, areas of potential environmental concern/potential contaminating activities, the presence and distribution of potential contaminants of concern, contaminant fate and transport, and potential exposure pathways. These components are discussed in the following sections. The Phase Two CSM was completed in accordance with Ontario Regulation (O. Reg.) 153/04 as defined by the Ministry of the Environment, Conservation, and Parks (MECP).

1 Introduction

For ease of reference, a project north has been used throughout this report, in which Brant Street is situated in a north-south orientation.

The Site has an area of approximately 0.76 hectares (1.89 acres) and is occupied by a commercial building with a partial basement on the south portion (688 Brant Street), a two (2) storey apartment building with full basement on the central portion (694 Brant Street), and a two (2) storey residential building with full basement on the north portion (698 Brant Street). The exterior areas of the Site consist of asphalt paved parking areas to the north and west, and manicured lawns east of the Site buildings.

The Phase Two Property is bound by Brant Street to the east, followed by residential properties to the north and west, and commercial/institutional properties to the south.

Refer to Table 1 for the Site identification information.

Table 1: Site Identification Information

Municipal Address	688, 694 and 698, Brant Street, Burlington, Ontario
Current Land Use	Commercial/Residential
Proposed Land Use	Residential
Legal Description	LT 65, RCP PL99; PT LT 66, RCP PL99, AS IN 290227; Burlington LT 66, RCP PL99, PART 1" & 2, "20R2804; Burlington LT 66, RCP PL99, PART 1" & 2, 20R2773; Burlington
Property Identification Number (PIN)	07089-0110 (LT) (688 Brant Street) 07089-0112 (LT) (694 Brant Street) 07089-0111 (LT) (698 Brant Street)
Approximate Universal Transverse Mercator (UTM) coordinates	NAD83 17T 596745 m E 4798283 m N
Accuracy Estimate of UTM	10-15 m
Measurement Method	Global Positioning System (GPS)

Site Area	0.76 hectares (1.89 acres)
Property Owner	Elite 688 Brant Holdings Inc.
Any Other Person Who Engaged the QPESA	Ibti Safi Elite 688 Brant Holdings Inc. 3410 South Service Road Suite 102 Burlington, Ontario L7N 3T2

1.1 Previous Investigations

The following reports were available for review at the time of this Phase Two ESA:

1. A report entitled "*Preliminary Geotechnical Investigation Report (Draft) 688 Brant Street Burlington, Ontario*", prepared by EXP Services Inc. for Elite Developments on November 25, 2021.

   - This report presents the results of the preliminary geotechnical investigation carried out at the site of the proposed residential development at 688 Brant Street in Burlington, Ontario.
   - It was understood that the proposed development will consist of an 11-storey residential structure including a commercial/retail area and a 3-storey above-grade parking garage, . including one level of underground parking covering the majority of the Site.
   - The purpose of this preliminary investigation was to determine the subsoil and groundwater conditions at the Site by advancing five (5) boreholes and based on an assessment of the factual subsurface data, provide an engineering report containing general geotechnical recommendations pertinent to the proposed construction.
   - The Site is situated at 688 Brant Street and is currently occupied by a single-storey commercial building with an associated asphalt parking lot. Low to mid-rise residential/commercial properties bound the Site to the south and west, and a mid-rise commercial property bounds the site to the east.
   - EXP advanced a total of five (5) boreholes at the Site; numbered BH-1 to BH-5 (BH #– 2021). The boreholes were advanced using solid stem augers and terminated in shale bedrock at depths ranging from approximately 4.8 to 6.2 m below existing grade.
   - The fieldwork for this investigation was carried out on October 12 and 13, 2021. Drilling and sampling operations were completed by a combination of auger and split-spoon techniques using truck mounted drilling equipment owned and operated by a specialist drilling subcontractor.
   - The soil stratigraphy was asphalt (overlying granular fill) or surficial topsoil surface at all boreholes, underlain by reworked native material and/or native sand. The reworked native material extended to depths of approximately 0.7 to 1.5 m below existing grade. The underlying native soil consisted of sand overlying till deposits. Red shale bedrock of the Queenston Formation was encountered underlying the till at depths ranging from approximately 4.5 to 5.6 m below grade.
   - Groundwater conditions were monitored in the open boreholes during and upon completion of the investigation. Boreholes BH-1 and BH-2 (2021) encountered groundwater at a depth of approximately 4.0 m below grade upon completion, and the remaining boreholes were dry upon completion, however; groundwater levels were not anticipated to have stabilized during the short term of the investigation.
   - No environmental sampling was completed during the geotechnical investigation.

2. A report entitled "*Phase One Environmental Site Assessment – 688, 694 and 698 Brant Street, Burlington, Ontario*" dated February 2023, was prepared for by Elite 688 Brant Holdings Inc., by EXP Services Inc. (EXP). Pertinent information from the report is as follows:

   - Based on the Assessment of Past Uses findings, the following information is provided in the following Table in support of the Qualified Person's (QP's) conclusion:

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)1	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1A: Former waste storage (PCA identifier 1A)	Southwest portion of the Site	PCA 'Other' – Waste generations	On-Site	Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), Metals, Hydride-forming Metals (HFM), Polychlorinated biphenyls (PCBs)	Soil and groundwater
APEC 1B: Transformer (in-use)	Southeast portion of the Site	PCA 55– Transformer Manufacturing, Processing and Use	On-Site	PCBs, PHCs, BTEX	Soil
APEC 1C: Salt application (PCA identifier 1B)	Parking areas on Site	PCA 'Other' – Application of De-icing Agents (or Products)	On-Site	Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR)	Soil
APEC 1D: Former buildings on the northeast corner of the Site (PCA identifier 1C)	Northeast portion of the Site	PCA #30 – Importation of Fill Material of Unknown Quality	On-Site	Polycyclic Aromatic Hydrocarbons (PAHs), Metals, HFM, PHCs, BTEX	Soil

(1) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D (O.Reg.153/04, as amended) that is occurring or has occurred in a Phase One Study Area.

1.2 Potentially Contaminating Activities

A Phase One ESA, in accordance with O.Reg.153/04, has been conducted by EXP in February 2023 for the Phase One Property. Several potentially contaminating activities (PCAs) were identified on-Site and within 250 m from the Phase One Property Site boundaries. All PCAs that were identified within 250 m property are shown on Figure 2. Each PCA was further evaluated to determine if the activity may be contributing to an area of potential environmental concern (APEC) at the Phase One Property.

The QP determined that select PCAs may contribute to an APEC for the property, while several PCAs were determined to not contribute to an APEC at the Phase One Property/Site due to various factors including, but not limited to, relative distance to the Phase One Property/Site, orientation to the Phase One Property/Site; degree and nature of PCA operations, potentially impacted media, etc. Refer to Table 1 (attached) for the evaluation of the PCAs in the Phase One Study Area.

- PCA#10 – Commercial Autobody Shops
- PCA#28 – Gasoline and associated products storage in fixed tanks
- PCA#28 – Gasoline and associated products storage in fixed tanks
- PCA #30 – Importation of Fill Material of Unknown Quality.
- PCA#31 – Ink Manufacturing, Processing and Bulk Storage.
- PCA #34 - Metal Fabrication
- PCA#40 Pesticides (including Herbicides, Fungicides and Anti Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications
- PCA#52 – Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems
- PCA 55– Transformer Manufacturing, Processing and Use
- PCA 'Other' – Waste generation.
- PCA 'Other' – Spill of petroleum or associated products.
- PCA 'Other' – PCBs waste generation.
- PCA 'Other' – Spill of waste oil.
- PCA 'Other' – Application of De-icing Agents (or Products)
- PCA 'Other' – Spill of PCB containing transformer oil

1.3 Areas of Potential Environmental Concern

Based on the evaluation of the PCAs located within the Phase One Study Area, areas of potential environmental concern (APECs) were identified, as presented in Figure 4, and listed below. Boreholes/monitoring wells advanced on the Site to investigate the identified APEC are shown on Figures 5B.

Table 2: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)1	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1A: Former waste storage (PCA identifier 1A)	Southwest portion of the Site (688 Brant Street)	PCA 'Other' – Waste generations	On-Site	Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), Metals, Hydride-forming Metals (HFM), Polychlorinated biphenyls (PCBs)	Soil and groundwater
APEC 1B: Transformer (in-use)	Southeast portion of the Site (688 Brant Street)	PCA 55– Transformer Manufacturing, Processing and Use	On-Site	PCBs, PHCs, BTEX	Soil

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)1	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1C: Salt application (PCA identifier 1B)	Parking areas on Site	PCA 'Other' – Application of De-icing Agents (or Products)	On-Site	Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR)	Soil
APEC 1D: Former buildings on the northeast corner of the Site (PCA identifier 1C)	Northeast portion of the Site (698 Brant Street)	PCA #30 – Importation of Fill Material of Unknown Quality	On-Site	Polycyclic Aromatic Hydrocarbons (PAHs), Metals, HFM, PHCs, BTEX	Soil

1.4 Subsurface Structures and Utilities

The Site utilities and services were identified at the Site based on information provided in environmental records, relevant utility infrastructure observed during the Site reconnaissance. The Site utilities are summarized in the table below and noted on Figure 3, where available. It is noted that the precise underground location of the utilities cannot be determined without professional locate services.

Utility	Source	Location	Site Entry
Natural Gas	Enbridge Gas	Underground	Associated natural gas meters were observed on the northern portion of the Site buildings.
Sanitary Sewer	City of Burlington	Underground	Unknown
Storm Sewer	City of Burlington	Underground	Various storm sewers observed on roadway east adjacent to the Site building(s) and in the parking lots of the Site.
Water	City of Burlington	Underground	Anticipated to be situated on east side of the Site buildings.
Electricity	Burlington Hydro Inc.	Overhead/Underground	Enters on the east side of the building(s) from Brant Street. A pad-mount transformer was present on the southeast exterior portion of 688 Brant Street.
Telecommunications	Bell	Underground	Enters on the east side of the building(s) from Brant Street.

2 Physical Site Description

2.1 Stratigraphy from Ground Surface to Deepest Aquifer

The Site is expected to consist of Glaciolacustrine deposits, predominantly sand, gravelly sand and gravel, nearshore and beach deposits from the Pleistocene era. The bedrock in the general area of the Site is part of a group belonging to the Queenston Formation consisting of shale, limestone, dolostone, and siltstone.

According to the topographic map from Natural Resources of Canada (Toporama), the elevation of the Site is approximately 92 m above sea level and is generally flat.

A review of the topographic map indicated that Rambo Creek is located approximately 160 m east of the Site, which flows in a southerly direction towards Lake Ontario which is located approximately 1.26 km south of the Site. Based on local topography, the anticipated groundwater flow direction is to the southeast.

Based on the review of available resources from the Ontario Ministry of Natural Resources and Forestry website on November 22, 2022, no areas of natural significance were identified at the Site or within 30 m of the Site.

2.1.1 Surface Material

Asphalt pavement was encountered at BH/MW-1S, BH/MW-2 and BH/MW-4S, measuring approximately 80 to 100 mm and overlying approximately 80 to 150 mm of sandy gravel fill. BH-5 was advanced through topsoil approximately 150 mm thick.

2.1.2 Fill Material

Reworked native material was encountered in each of the boreholes below the sandy gravel fill and topsoil. The reworked native material extended to depths ranging between approximately 1.0 to 2.13 m bgs. The reworked native material consisted of either silty sand (BH/MW-1S, BH/MW-2 and BH/MW-4S); with trace clay/gravel.

Fill materials were encountered at BH-5 and consisted of sand, and some silt, with trace gravel, brick and rootlets. BH-5 was terminated within the fill material based on the scope of the investigation at that location.

2.1.3 Native Material

Native sand overlying till deposits was encountered in BH/MW-1S, BH/MW-2 and BH/MW-4S. The sand extended to depths ranging from approximately 2.29 to 3.05 m bgs. Silty clay till with trace sand and gravel, sand seams, and trace shale fragments/inclusions was encountered in BH/MW-1S and extended to 5.40 m bgs. Silty sand to sandy silt till with trace gravel and shale fragments was encountered in BH/MW-2 and extended 5.33 m bgs. Silt till with some sand/clay and trace gravel was encountered in BH/MW-4S and extended to 6.10 m bgs. Three (3) boreholes (BH/MW-1S, BH/MW-2 and BH/MW-4S) extended to the shale bedrock.

2.2 Approximate Depth to Bedrock

Red shale bedrock of the Queenston Formation was encountered underlying the till deposits at each of the boreholes with the exception of BH-5 at depths between 5.33 to 6.10 m bgs.

2.3 Approximate Depth to Water Table

A minimum of three (3) monitoring wells, screened within the sample geological formation, are required to estimate groundwater flow direction. Groundwater water levels were measured at the Site on January 24 and January 31, 2023. Based on the groundwater contour map delineated for the Site, on-Site groundwater appears to be to the southeast. Refer to Table 3 for the Site hydrogeology characteristics based on groundwater monitoring observations.

Table 3: Site Hydrogeology Characteristics

Location	Observation
Depth to Groundwater	2.593 to 2.940 m bgs
Groundwater Elevation	88.534 to 88.921 m asl
Horizontal Hydraulic Gradient	0.005 m/m (between BH/MW-1S and BH/MW-2) 0.001 m/m (between BH/MW-2 and BH/MW-4S)

2.4 Considerations with Respect to Section 35, 41 or 43.1 of Regulation

The Site Sensitivity classification with respect to the conditions set out under Section 35, Section 41 and 43.1 of O.Reg.153/04 were evaluated to determine if the Site is sensitive, as presented below in Table 4.

Table 4: Site Sensitivity

Sensitivity	Classification	Does Sensitivity Apply to Site?
Section 35 applies if	(i) The full depth generic site condition standards in a non-potable groundwater condition	No
	(ii) The stratified site condition standards in a non-potable groundwater condition	No
	(iii) The property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the property, are supplied by a municipal drinking water system	No
	(iv) The record of site condition does not specify agricultural or other use as the type of property use	No
	(v) The property is located in an area designated in the municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of groundwater	No
	(vi) The property or one of the properties in the Phase One Study Area has a well, used or intended for use as a source of water for human consumption or agriculture.	No
	(vii) A person authorized by the owner of a property has given the clerk of the municipality a written notice of intention to apply the standards in preparing a record of site condition for the property; A. the single tier municipality has given written notice that it does object to the application of the standards	Yes
Section 41 applies if	(i) property is within an area of natural significance	No
	(ii) property includes or is adjacent to an area of natural significance or part of such an area	No
	(iii) property includes land that is within 30 m of an area of natural significance or part of such an area	No
	(iv) soil at property has a pH value for surface soil less than 5 or greater than 9	No
	(v) soil at property has a pH value for sub-surface soil less than 5 or greater than 11	No
	(vi) a qualified person is of the opinion that, given the characteristics of the property and the certifications the qualified person would be required to make in a record of site condition in relation to the property as specified in Schedule A, it is appropriate to apply this section to the property	No

Sensitivity	Classification	Does Sensitivity Apply to Site?
Section 43.1 applies if	(i) property is a shallow soil property	No
	(ii) property includes all or part of a water body or is adjacent to a water body or includes land that is within 30 m of a water body	No

2.5 Areas on, in or under the Phase Two Property where Excess Soil is Finally Placed

No fill material were imported to the Site during the Phase Two ESA.

2.6 Land Use

It is understood that the Site is intended to be re-developed for residential land use. The proposed development plan is provided as Figure 3A.

3 Appropriate Standards Selection for Identification of Areas of Contamination

For assessment purposes, EXP selected the O.Reg. 153/04 Table 2: Full Depth Background SCS in a Potable Groundwater Condition for Residential/Parkland/Institutional Land Use with coarse textured soil. The criteria were considered applicable for determining contaminants of concern (COCs), based on the rationale presented below in Table 5.

Table 5: Site specific Condition

Description	Site Specific Condition
Section 35 Site Sensitivity	Not Applicable
Section 41 Site Sensitivity	Not Applicable • The soil at the Site has pH values between 5 and 9 for surficial soil; and, between 5 and 11 for subsurface soil. • The Site is not located within a Significant Area, and/or located adjacent to an area of natural significance/an environmentally sensitive area.
Section 43.1 Site Sensitivity	Not Applicable • The Site is not considered a shallow soil property, based on the recovered soil cores, which indicated that more than two-thirds of the Site has an overburden thickness in excess of 2 m.
Ground Water	Potable • The Site and surrounding properties within 250 m of the Site are supplied by the municipal drinking water system however, the upper tier municipality (Region of Halton) has indicated the Site is located within a highly vulnerable aquifer.
Land Use	Residential • The proposed future use of the Site is for residential use.

Description	Site Specific Condition
Soil Texture	Coarse textured • The predominant texture of soils at the Site is considered to be coarse textured, based on soil characteristics identified in the borehole logs and 75-micron sieve.

3.1 Areas Where a Contaminant is Present

A chemical constituent was selected as a COC if it was detected in soil or groundwater samples obtained from the Site at a concentration in excess of the applicable Table 2 SCS. Soil conditions at the Site were evaluated through reliable data from previous investigations in addition to the Phase Two ESA completed by EXP.

Soil samples were submitted for the analysis of Petroleum Hydrocarbons (PHCs), Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), Metals including hydride-forming metals, Polychlorinated Biphenyls (PCBs) and selected Other Regulated Parameters (ORPs) (namely, electrical conductivity [EC] and sodium absorption ratio [SAR]).

All soil parameters analyzed met Table 2 SCS and/or were non-detected at the laboratory Reporting Detection Limits (RDLs) with the exception of BH2 SS1 which exceeded Table 2 SCS for EC and SAR. The laboratory RDLs were below the Table 2 SCS.

It is the QP's opinion that the elevated concentrations of EC and SAR are associated with de-icing activities in the winter months for the safety of the public and vehicular traffic. As such, they are not considered to be in excess of the Table 2 SCS for the purposes of filing a RSC based on the exemption outlined in Section 49.1 of O.Reg. 153/04, and, EC and SAR are not considered as COCs for the Site.

Groundwater samples were submitted for the analysis of PHCs including BTEX and Metals and PCBs.

All groundwater parameters analyzed met Table 2 SCS and/or were non-detected at the laboratory RDLs. The laboratory RDLs were below the Table 2 SCS.

Analytical results of soil and groundwater samples collected on the Site are presented for soil in plan view on Figures 7 to 11 and for groundwater in plan view on Figures 12 and 14. Stratigraphical cross sections are presented of Figures 15 and 16.

3.2 Contaminants Associated with Area of Impact

As all soil and groundwater parameters analyzed met the Table 2 SCS and/or were non-detected at the RDLs, this item is not applicable.

3.3 Medium Associated with Area of Impact

As all soil and groundwater parameters analyzed met the Table 2 SCS and/or were non-detected at the RDLs, this item is not applicable. No sediment was present at the Site.

3.4 Description of What is Known about Area of Impacts

As all soil and groundwater parameters analyzed met the Table 2 SCS and/or were non-detected at the laboratory RDLs, this item is not applicable.

3.5 Distribution of Contaminant Impacts

As all soil and groundwater parameters analyzed met the Table 2 SCS and/or were non-detected at the laboratory RDLs, this item is not applicable.

3.6 Reasons for Discharge of Contaminant Impacts

As all soil and groundwater parameters analyzed met the Table 2 SCS and/or were non-detected at the laboratory RDLs, this item is not applicable.

3.7 Migration of Contaminants from APECs, Identification of Preferential Pathways, if Any

As all soil and groundwater parameters analyzed met the Table 2 SCS and/or were non-detected at the laboratory RDLs, this item is not applicable.

3.8 Influence of Climatic or Meteorological Conditions

As all soil and groundwater parameters analyzed met the Table 2 SCS and/or were non-detected at the laboratory RDLs, this item is not applicable.

3.9 Soil Vapour Migration

As all soil and groundwater parameters analyzed met the Table 2 SCS and/or were non-detected at the RDLs, this item is not applicable.

4 Exposure Pathways

4.1 Human Health Receptors and Exposure Pathways

The Site is proposed for future residential use. Therefore, the potential on-Site human receptors consist of property residents (all ages), construction workers, long-term (indoor) workers, short-term (outdoor) workers, and property visitors/trespassers. Given the commercial / residential nature of the adjacent properties in the Study region, the off-Site human receptors are identified to be the same as those identified to occur on-Site.

Given that no COCs were identified on the Site for the purposes of filing a RSC in either soil or groundwater, there are no potential exposure pathways for construction workers, long-term (indoor) workers, short-term (outdoor) workers, property residents, and property visitors for both on-Site and Off-Site human receptors.

4.2 Ecological Receptors and Exposure Pathways

The Site is proposed to be developed for residential land use, capable of supporting typical terrestrial ecological receptors. Relevant terrestrial receptors include, terrestrial vegetation, such as trees, grasses and weeds; soil invertebrates, such as earthworms, millipedes and beetles; terrestrial birds, such as pigeons, sparrows and robins; and, terrestrial mammals, such as moles, voles and mice.

Furthermore, it is noted that the MECP evaluates exposure to aquatic receptors at properties within 5 km of a surface water body. Given that the Don River is located approximately 710 m northeast of the Site, aquatic receptors are also considered to be present off-Site.

It is noted that there are no soil or groundwater COCs identified at the Site. Given that no soil impacts or groundwater impacts are present at the Site no exposure source media remains and thus the potential on-Site exposure pathways are all considered incomplete. All on-Site ecological receptors have no complete exposure pathways and are thus considered not to be at risk

from exposure to on-Site media. In addition, off-Site aquatic receptors do not have complete exposure pathways to on-Site media and are thus considered not to be at risk from exposure to on-Site media.

5 Uncertainty in the Phase Two Investigation

Quality Control/Quality Assurance measures were implemented during sample collection, storage and transport to provide accurate data representative of conditions in the surficial fill and upper overburden soils. The QA/QC measures included decontamination procedures to minimize the potential for sample cross contamination, the execution of standard operating procedures to collect representative and unbiased samples, the collection of quality control samples to evaluate sample precision and accuracy, and the implementation of measures to preserve sample integrity.

Soil samples were collected into pre-cleaned laboratory-supplied jars provided with analytical test group specific preservatives, as required. Recommended analytical test group specific sample volumes were collected as specified by the contractual laboratory.

Measures were followed to preserve sample integrity between collection and receipt by the laboratory. Immediately upon collection, all samples were placed in insulated coolers pre-chilled with ice for storage and transport to the contractual laboratory. Samples were received by the contractual laboratory within specific analytical test group holding time requirements.

Documentation procedures were followed to confirm sample identification and tracked sample movement. Each sample was assigned a unique identification ID number, which was recorded along with the date, time of sampling and requested analyses on labels affixed to the sampling containers, and in a field notebook. Chain of Custody protocols were followed to track sample handling and movement until receipt by the contractual laboratory.

Field QA/QC samples were collected during soil sampling. Duplicate samples were collected to evaluate sampling precision.

Details of the field duplicates samples collected during and following remedial activities and the laboratory quality assurance program are provided in Section 6.8 of the Phase Two ESA Report.

The contractual laboratory selected to perform the chemical analyses was AGAT Laboratories, of Mississauga, ON. AGAT is an accredited laboratory under the Standards Council of Canada/Canadian Association of Laboratory Accreditation (Accredited Laboratory No. 97 and No. A3200, respectively) in accordance with ISO/IEC 17025:2005 – "General Requirements for the Competence of Testing and Calibration Laboratories". Certificates of Analysis were received from AGAT reporting the results of all the chemical analyses performed on the submitted soil and groundwater samples. Copies of the Certificates of Analysis are provided in Appendix E. Review of the Certificates of Analysis, prepared by AGAT, indicates that they were in compliance with the requirements set out under subsection 47(3) of O. Reg. 153/04.

The investigation undertaken by EXP, and any conclusions or recommendations resulting from the work, reflect EXP's judgment based on the conditions observed at the time of EXP's inspections and on information available at the time of preparation of the work. EXP has confirmed neither the completeness nor the accuracy of the records that were provided by others; as such, the historical records review is identified as a potential source of uncertainty during the investigation. The CSM is developed using multiple lines of evidence, searches and source information to make every reasonable attempt to ensure that findings of environmental significance are captured.

Any uncertainty or absence of information in the records review, interviews, and site reconnaissance components of the Phase One investigation, or any uncertainty or absence of information within the Phase Two or subsequent investigations, are not anticipated to materially affect the validity of the Phase Two CSM.

TABLE 1 - Potentially Contaminating Activities
GTR-21021311-A0 - Phase Two Environmental Site Assessment
849-855 Brant Street, Burlington, Ontario

PCA Identifier	Address	Location of PCA (on-Site or off-Site)	Potentially Contaminating Activity (PCA)[2]	Approximate Timeline that PCA Occurred	Contibutes to an APEC (Yes or No)
Phase One Property					
1A	688 Brant Street	On-Site	PCA 'Other' – Waste generation	Based on a review of ERIS report, Canada Post Corp. (maintenance department, 688 Brant Street) was listed as a waste generator of various wastes including alkaline wastes (heavy metals), inorganic laboratory chemicals, and petroleum distillates from 1988 to 1998 and PCBs in 2005. It is noted that the records associated with alkaline wastes (heavy metals), inorganic laboratory chemicals, and petroleum distillates from 1988 to 1998 were noted to be related to the maintenance department and as such; the small quantities generated would not be considered to have posed a potential concern to the Site. Based on a review of historical aerial photographs, the decommissioned light ballasts containing PCBs (and small quantities of liquid wastes noted above) are anticipated to be stored on the southwest exterior portion of 688 Brant Street in the vicinity of the waste disposal storage area, prior to removal from the Site.	Yes, based on the PCA occuring on-Site.
1B	688 Brant Street	On-Site	PCA 55– Transformer Manufacturing, Processing and Use	Based on observations during the Site visit, a pad-mounted transformer was present on the southeast portion of the Site, east of 688 Brant Street.	
1C	688-698 Brant Street	On-Site	PCA 'Other' – Application of De-icing Agents (or Products)	Based on observations during the Site visit, a salt bin was observed at 698 Brant Street. The parking areas of the Site are likely to have been salted in the winter months.	
1D	695 Brant Street	On-Site	PCA #30 – Importation of Fill Material of Unknown Quality.	Based on a review of the 1932 FIP and historical aerial photographs; two (2) former residential dwellings were historically present on the Site. It is noted that the footprint of the former structure located on the east central portion of the Site was replaced with the current commercial structure at 688 Brant Street and includes a basement level. As such, fill material of unknown quality utilized during the redevelopment of this portion of the Site would have been excavated during the redevelopment of 688 Brant Street. It is unknown if the former structure observed on the northeast portion Site included a basement level, however; there is potential for fill material to be present on this portion of the Site, due to backfilling and re-grading activities of the former buildings on the northeast portion of the Site.	
Surrounding Properties					
2	653 Brant Street	60 m southeast	PCA 'Other' – PCBs waste generation.	Based on a review of the ERIS report Halton Roman Catholic School Board (PCB) was listed as a waste generator in 1994; however, no wastes were defined.	No, based on the down-gradient location with respect to the inferred groundwater flow direction and the records anticipated to be associated with light ballasts
3A	1433 Baldwin Street	80 m southeast	PCA 'Other' – Waste generation	Based on a review of the ERIS report Halton District School Board/Halton Board of Education (Burlington Central High School) was listed as waste generator of various wastes including petroleum distillates, oil skimmings & sludges and waste oils & lubricants from 1986 to 2022.	No, based on the down-gradient location with respect to the inferred groundwater flow direction and the records anticipated to be associated with light ballasts
3B			PCA 'Other' – Spill of waste oil.	Based on a review of the ERIS report a spill of 1 L of waste oil to the catch basin was reported in 1992.	No, based on small amount of spill and the down-gradient location with respect to the inferred groundwater flow direction and the records anticipated to be associated with light ballasts

TABLE 1 - Potentially Contaminating Activities
GTR-21021311-A0 - Phase Two Environmental Site Assessment
849-855 Brant Street, Burlington, Ontario

PCA Identifier	Address	Location of PCA (on-Site or off-Site)	Potentially Contaminating Activity (PCA)[2]	Approximate Timeline that PCA Occurred	Contibutes to an APEC (Yes or No)
4A	638 Brant Street	100 m south	PCA 'Other' – Spill of PCB containing transformer oil	Based on a review of the ERIS report Burlington Hydro-Electric Commission reported a spill of an unknown amount of transformer oil (chlorinal under 50 ppm) to the ground in 2002. It is noted that there is possibility of soil contamination.	No, based on the down-gradient location with respect to the inferred groundwater flow direction.
4B			PCA 'Other' – Waste generation.	Based on a review of the ERIS report Halton District School Board was listed as a waste generator of oil skimmings & sludges from 2018 to 2022.	
5	760 Brant Street	110 m north	PCA 'Other' – Waste generation.	Based on a review of the ERIS report 1086891 Ontario Inc. was listed as a waste generator of oil skimmings & sludges in 2009.	No, based on the trans-gradient location with respect to the inferred groundwater flow direction.
6A	629 Brant Street	115 m southeast	PCA#10 – Commercial Autobody Shops	Based on a review of the 1971 FIP; an automotive repair and body shop operation with one (1) underground storage tank (UST) and one (1) paint spray booth, was present at the property.	No, based on the down-gradient location with respect to the inferred groundwater flow direction.
6B			PCA#28 – Gasoline and associated products storage in fixed tanks	Based on the review of the Municipal Directories and reconnaissance of adjacent and surrounding properties during the Site visit; 629 Brant Street was occupied by an automotive dealership from 1959 to present, including a collision centre.	
6C			PCA#52 – Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems		
6D			PCA 'Other' – Waste generation.	Based on a review of the ERIS report Trius Auto was listed as a waste generator of oil skimmings & sludges from 2021 to 2022.	
7A	2038 Ghent Avenue	195 m northeast	PCA#28 – Gasoline and associated products storage in fixed tanks	Based on a review of the 1971 FIP several Greenhouses with one (1) UST, was present at the property.	No, based on the trans-gradient location with respect to the inferred groundwater flow direction.
7B			PCA#40 Pesticides (including Herbicides, Fungicides and Anti Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	Based on a review of the Municipal Directories, Holland Florist was listed as the tenant of this property in 1959.	
8A	761 Brant Street	195 m northeast	PCA 'Other' – Spill of petroleum or associated products.	Based on a review of the ERIS report Philip Environmental Inc. reported a spill of 225 L of hydraulic oil leak from front end loader line in 1992. It was noted that there was possibility of soil contamination.	No, based on the trans-gradient location with respect to the inferred groundwater flow direction.
8B			PCA 'Other' – Waste generation.	Murray Laboratories Div. of London Biochemistry was listed as a waste generator of aliphatic oils from 1986 to 1998; and pathological wastes from 1990 to 1998. Dynacare Laboratories was listed as a waste generator of pathological wastes from 1998 to 2006; and inorganic & organic laboratory chemicals from 2003 to 2006.	
9	2026 Ghent Avenue	230 m northeast	PCA#31 – Ink Manufacturing, Processing and Bulk Storage.	Based on a review of the ERIS report Wilson Blanchard Management Inc. was listed as a waste generator of light fuels in 2019.	No, based on the trans-gradient location with respect to the inferred groundwater flow direction.
10	2052-2504 Courtland Avenue	165 m southeast	PCA 'Other' – Waste generation.	Based on a review of the ERIS report Wilson Blanchard Management Inc. was listed as a waste generator of light fuels in 2019.	No, based on the down-gradient location with respect to the inferred groundwater flow direction.
11	1418 Ghent Avenue	250 m northwest	PCA #34 - Metal Fabrication	Based on a review of the Municipal Records, Bannon Frank Machinery was listed as the occupant of this address in 1978.	No, based on the trans-gradient location with respect to the inferred groundwater flow direction.

Notes:
(1) Distances are approximate. Precise distances are not possible due to the age of some listings and the aggregation and/or loss of addresses.
(2) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area

Appendix G – Grain Size Analysis

(to be included in final report)