772 Winston Churchill Boulevard, Oakville, Ontario

Phase Two Environmental Site Assessment

Client:
772 Winston Churchill Limited Partnership, by its general partner 772 Winston Churchill GP Inc

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Appendices

1. Executive Summary

EXP Services Inc. (EXP) was retained by 772 Winston Churchill Limited Partnership, by its general partner 772 Winston Churchill GP Inc. ("Client") to complete a Phase Two Environmental Site Assessment (ESA) of the property municipally addressed 772 Winston Churchill Boulevard, Oakville, Ontario (the "Site"). The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified in the Phase I ESA completed by EXP, dated April 22, 2020.

The Site is located on the west side of Winston Churchill Boulevard in Oakville, Ontario, as shown on Figure 1. The subject property measures approximately 15.7 hectares (38.8 acres) in area. The Site was first developed prior to 1939 for agricultural purposes. A farmstead residence was located in the northeast corner from the 1970s until the 2000s. Earthwork activities were undertaken at the Site in 2012, including the removal of surficial topsoil and weathered subgrade soil and construction of a storm water management pond (SWMP). Clearview Creek, which flowed centrally through the Site, was realigned to run along the west and south boundaries of the subject property. At the time of the Phase Two ESA, the Site was a vacant lot undergoing earthworks.

It is EXP's understanding that the Client intends to redevelop the Site for industrial warehousing and logistics use.

This Phase Two ESA was conducted in accordance with the Phase Two ESA standard defined by Ontario Regulation 153/04, as amended (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 scope of the Phase Two ESA was designed to assess soil and groundwater quality associated with the identified environmental concerns (EXP, 2020). The results and findings of the Phase Two ESA conducted at the Site are summarized as follows:

1. From March 16 to 18, 2021 eight (8) boreholes (BH1 to BH8) were advanced at the Site, along with two stockpile samples, and two sediment samples. None of the boreholes were completed as monitoring wells. The maximum depth of the boreholes advanced during the course of the investigation was approximately 4.3 metres below ground surface (m bgs). On October 19, 2021 three (3) hand auger pits and three sediment samples were obtained from the Site. The maximum depth of the hand auger pits was approximately 0.6 mbgs.
2. The general stratigraphy at the Site, as observed in the boreholes, consisted of topsoil overlying clayey silt to silty clay to a maximum depth of 0.86 mbgs, underlain by sand to sandy silt. Bedrock was encountered at approximately 3.8 mbgs across the Site.
3. The monitoring well network advanced as part of this Phase Two ESA consisted of four (4) pre-existing monitoring wells (MW110, MW101, MW102 and MW103), installed in 2016. Screen depths ranged from approximately 0.89 to 3.89 mbgs at MW110, 1.48 to 4.48 mbgs at MW101, 1.44 to 4.44 mbgs at MW102, and 0.99 to 3.99 mbgs at BH103. Groundwater levels were measured between 0.25 (MW102) to 1.22 (MW101) mbgs on March 18, 2020.
4. The local groundwater flow direction was calculated to the south to southeast, towards Clearview Creek which is present at the western and southern Site boundaries. Clearview Creek flows southeast towards Lake Ontario.
5. Soil samples were submitted for the analysis of petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene and xylenes (BTEX), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCs), metals, hydride forming metals, electrical conductivity (EC), pH, and/or sodium adsorption ratio (SAR).
6. Seven (7) soil samples PHCs, VOCs and PAHs. PHCs, VOCs, and PAHs were either not detected or detected below the applicable Table 8 SCS.
7. Seven (7) soil samples were analyzed for metals and inorganics. Metals and inorganics were either not detected or detected below the applicable Table 8 SCS with the exception of EC at BH3-SS1.

8. Ten (10) soil samples and one (1) duplicate were analyzed for OCs. OCs were either not detected or detected below the applicable Table 8 SCS with the exception of DDD and DDE at SP2-3-0.5-0.7m, obtained from a stockpile at the northern Site boundary and DDE at GS-1 and it's duplicate GS1-0, obtained from 0.4 metres.
9. Groundwater samples were submitted for the analysis of PHCs and VOCs.
10. Four (4) groundwater samples were analyzed for PHCs and VOCs. PHCs and VOC were either not detected or detected below the applicable Table 8 SCS.
11. One (1) groundwater sample and one (1) QA/QC duplicate were analyzed for metals and OCs. Metals and OCs were either not detected or detected below the applicable Table 8 SCS.
12. Sediment samples were submitted for analysis of PAHs, metals and inorganics, and OCs.
13. Two (2) sediment samples were analyzed for PAHs and OCs. PAHs and OCs were either not detected or detected below the applicable Table 8 SCS.
14. Five (5) sediment samples and one (1) QA/QC duplicate were analyzed for metals and/or inorganics. Metals and/or inorganics were either not detected or detected below the applicable Table 8 SCS with the exception of copper and nickel at SED1, SED2, SED101, and SED103 and arsenic, copper and lead at SED 102.
15. No evidence of free product (i.e. visible film or sheen), or odour was observed during soil sampling, groundwater purging, or groundwater sampling activities.

Based on the limited risk assessment conducted for the soil, groundwater, and sediment analytical results, no unacceptable risks are anticipated to human and ecological receptors that may be present on-Site as a result of the elevated levels of select metals in sediment and OCs in soil on-Site ~~are not anticipated to pose a concern to human and ecological receptors that may be present on-Site~~. No further environmental work is required, at this time.

2 Introduction

2.1 Introduction

EXP Services Inc. (EXP) was retained by 772 Winston Churchill Limited Partnership, by its general partner 772 Winston Churchill GP Inc. (the "Client") to conduct a Phase Two Environmental Site Assessment (ESA) for the property at 772 Winston Churchill Boulevard, Oakville, Ontario. For the purpose of this report, the terms "Site" and "subject property" refer to the property with the current municipal address of 72 Winston Churchill Boulevard, Oakville. The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified in the Phase I ESA completed by EXP, dated April 22, 2020

The Site is located on the west side of Winston Churchill Boulevard in Oakville, Ontario, as shown on Figure 1. The subject property measures approximately 15.7 hectares (38.8 acres) in area. The Site was first developed prior to 1939 for agricultural purposes. A farmstead residence was located in the northeast corner from the 1970s until the 2000s. Earthwork activities were undertaken at the Site in 2012, including the removal of surficial topsoil and weathered subgrade soil and construction of a storm water management pond (SWMP). Clearview Creek, which flowed centrally through the Site, was realigned to run along the west and south boundaries of the subject property. At the time of the Phase Two ESA, the Site was a vacant lot undergoing earthworks.

It is EXP's understanding that the Client intends to develop the Site for industrial warehousing and logistics use. It is further understood that no Record of Site Condition (RSC) is required for the site, given the change in land use from agricultural and other land use (more sensitive) to industrial/commercial/community land use (less sensitive). However, the Region of Halton has requested that the Phase Two investigation be conducted in accordance with Ontario Regulation 153/04, as amended (O.Reg.153/04).

This Phase Two ESA was conducted in accordance with the Phase Two ESA standard defined by Ontario Regulation 153/04, as amended (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.

2.2 First Developed Use Determination

The Site was first developed prior to 1934 for agricultural purposes. A farmstead residence was located in the northeast corner from the 1970s until the 2000s. Earthwork activities were undertaken at the Site in 2012, including the removal of surficial topsoil and weathered subgrade soil and construction of a storm water management pond (SWMP). Clearview Creek, which flowed centrally through the Site, was realigned to run along the west and south boundaries of the subject property. Historical records used to determine the first developed use include:

- Previous Environmental Reports (Section 5.1.5); and,
- Aerial Photographs and Satellite Images (Section 5.3.1).

2.3 Legal Description and Property Ownership

Details of the Site are outlined in the tables below.

Municipal Address	772 Winston Churchill Boulevard, Ontario
Current Land Use	Agricultural and other
Proposed Land Use	Industrial
Approximate Universal Transverse Mercator (UTM) coordinates	NAD83 17-4816188N 0609868E

Accuracy Estimate of UTM	10-15 metres (m)
Measurement Method	Google Earth Global Positioning System (GPS) measurements
Site Area	15.7 hectares (38.8 acres)
Property Owners, Owner Contact and Address	772 Winston Churchill Limited Partnership, 772 Winston Churchill GP Inc

2.4 Current and Proposed future Uses

At the time of the Phase Two ESA, the property was vacant and undergoing earthworks. Reportedly, the Site is intended to be developed for industrial land uses.

2.5 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, 2011a). 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 (2011a). 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).

Tables 1 to 9 of MECP (2011a) are summarized as follows:

- Table 1 – applicable to sites where background concentrations must be met (full depth), such as sensitive sites where site-specific criteria have not been derived;
- Table 2 – applicable to sites with potable groundwater and full depth restoration;
- Table 3 – applicable to sites with non-potable groundwater and full depth restoration;
- Table 4 – applicable to sites with potable groundwater and stratified restoration;
- Table 5 – applicable to sites with non-potable groundwater and stratified restoration;
- Table 6 – applicable to sites with potable groundwater and shallow soils;
- Table 7 – applicable to sites with non-potable groundwater and shallow soils;
- Table 8 – applicable to sites with potable groundwater and that are within 30 m of a water body; and,
- Table 9 – applicable to sites with non-potable groundwater and that are within 30 m of a water body.

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

For assessment purposes, EXP selected the MECP (2011) Table 8 Site Condition Standards (SCS) for Residential/Parkland/Institutional/Industrial/Commercial/ Community Property Use and medium and fine textured soil. The selection of this category was based on the following factors:

- More than 2/3 of the Site has an overburden thickness greater than 2 m.
- The Site has a surface water body passing through the southern portion.
- Surface soil samples were submitted for pH analysis and were measured within the acceptable range of 5 to 9. Subsurface soils were measured between the acceptable pH range of 5 and 11.
- 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.
- The Site and all properties within 250 m of the Site may be serviced by potable water wells.
- The predominant soil type on the Site is considered to be medium and fine textured (as per the soil description identified in the borehole logs in Appendix E.
- The most sensitive proposed land use is commercial/industrial. ~~However residential land use was also assumed in the risk evaluation (Section 6.9).~~
- There is no intention to carry out a stratified restoration at the Site.

3 Background Information

3.1 Physical Setting

3.1.1 Topography, Geology and Hydrology

The Site is located in a transition zone between the physiographic regions known as the Iroquois Plan and Shale Plains. The native surficial soils in this region are predominately composed of older glacial lake deposits, typically silty clay to silt till (Chapman and Putnam, 1984). The subject property is located in the Halton Till (Ontario-Erie lobe) quaternary region, which is an area with a silt to silty clay matrix, high in carbonate content and clast poor (Ontario Geological Survey, 2000).

According to the Geological Survey of Canada map of the area, the underlying geology comprises the Queenston Formation. Bedrock at the Site consists upper Ordovician shale, limestone, dolostone and siltstone (Ontario Geological Survey, 1991).

The topography in the vicinity of the Site is relatively flat with a gradual slope towards the south. Clearview Creek flows onto the subject property at the northwest corner of the Site. Clearview Creek was realigned to run south along the west boundary and east along the south boundary of the Site in 2012. A SWMP was also constructed at the southeast corner of the subject property, at this time.

Table 1 summarizes the environmental setting and Site characteristics. Using 1 x 10-6 cm/s for the hydraulic conductivity of silt (Freeze and Cherry, 1979), a hydraulic gradient of 0.006 m/m (estimated based on topography), and an effective porosity of 20% (McWhorter and Sunada, 1977), Darcy's Law calculations were made to determine the potential groundwater flow velocity at the Site, as shown in Table 2. The groundwater flow velocity was calculated to be approximately 9.46 x 10^{-3} metres per year (0.95 centimetres/year) in the native silt. The local groundwater flow direction was calculated to the south to southeast, towards Clearview Creek which is present at the western and southern Site boundaries. Clearview Creek flows southeast towards Lake Ontario.

3.1.2 Fill Materials

Fill material is typically brought to a property as a base for buildings and pavement areas. Fill can also be used to re-grade a property, and to backfill excavations.

Based on the Phase Two investigation, stockpiled fill was observed in two locations at the Site. Furthermore, previous investigations have identified fill across the majority of the Site.

3.1.3 Water Bodies and Areas of Natural Significance

Clearview Creek is present at the western and southern Site boundaries and flows southeast towards Lake Ontario. The on-Site portions of Clearview Creek were realigned circa 2012. A SWMP was also constructed at the southeast corner of the Site at this time.

Based on the Ministry of Natural Resources and Forestry's "Make a Map: Natural Heritage Areas" the Site is not located within 30 metres of any of the following:

- An area reserved or set apart as a provincial park or conservation reserve under the Provincial Parks and Conservation Reserves Act, 2006;
- An area of natural and scientific interest (life science or earth science) identified by the Ministry of Natural Resources and Forestry as having provincial significance;
- A wetland identified by the Ministry of Natural Resources and Forestry as having provincial significance;
- An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the Niagara Escarpment Planning and Development Act;
- An area identified by the Ministry of Natural Resources and Forestry as significant habitat of a threatened or endangered species;

- An area which is habitat of a species that is classified under section 7 of the Endangered Species Act, 2007 as a threatened or endangered species;
- Property within an area designated as a natural core area or natural linkage area within the area to which the Oak Ridges Moraine Conservation Plan under the Oak Ridges Moraine Conservation Act, 2001 applies; and,
- An area set apart as a wilderness area under the Wilderness Areas Act.

According to the Ministry of Natural Resources and Forestry's "Make a Map: Natural Heritage Areas", Clearview Creek, located on-Site, is identified as a "Natural Heritage System".

3.2 Previous Environmental Investigations

Various historic environmental investigations have been completed at the Site, as follows:

Date	Report Title	Prepared For	Prepared By	Findings and Areas of Potential Environmental Concern
August 8, 2012	Site Grading Operation, Interim Report No. 1, Winston Churchill Site, Mississauga, Ontario	IGRI Advisors Inc.	Forward Engineering and Associates Inc. (FEAI)	The letter report summarizes earthworks activities at the Site during the period of June 20 and August 7, 2012. Approximately 0.3 to 0.6 metres of topsoil was stripped from the subject property. The topsoil was subsequently hauled off-Site, with the exception of some material that was used to build a berm near the west property boundary. "Weathered soil" was encountered below the topsoil, ranging from 0.5 metres to 0.8 metres thick. The weather soil was also removed from the Site. Garbage materials found at the Site, including tires, construction debris, concrete pieces and bricks, were segregated into garbage disposal boxes and removed. The report indicates that a house was formerly located at the northeast portion of the Site and an abandoned well at this location would be decommissioned by a certified contractor. The earthworks activities reportedly included the construction of two SWMPs, and swales were created to facilitate drainage within the subject property. Cut and fill grading operations were completed at the Site.
March 21, 2016	Phase II Environmental Site Assessment, 772 Churchill Boulevard, Oakville, Ontario	SorOak Developments Inc.	FEAI	The Phase II ESA was conducted for due diligence purposes in support of redeveloping the Site for commercial/industrial use. Several potentially contaminating activities were identified off-Site, including multiple manufacturing and automotive businesses, historic and current fuel storage tank usage, and a registered waste disposal site located up-gradient or in the vicinity of the Site. The on-Site PCAs identified included suspected fill material of unknown quality and the presence of three soil stockpiles. Twelve boreholes were advanced across the Site to a maximum depth of 5.82 metres below ground surface (mbgs), as part of a combined Phase II ESA and Geotechnical Investigation conducted between February 1 and 26, 2016.

Date	Report Title	Prepared For	Prepared By	Findings and Areas of Potential Environmental Concern
				Soil stratigraphy at the Site generally comprised of clayey silt to sandy silt fill to a depth ranging from 0.9 to 1.5 mbgs, over clayey silt till to shale till to a depth ranging from 2.3 to 5.7 mbgs, underlain by weathered shale to a depth greater than 5.8 mbgs. Four of the boreholes were completed as groundwater monitoring wells. Groundwater at the Site was measured, ranging from 1.06 to 2.10 mbgs. Select soil and groundwater samples were submitted to the laboratory for analysis of volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and metals and inorganic parameters. Based on the review of the previous reports by FEAI, there were no exceedances of the O. Reg. 153/04 Table 3 Site Condition Standards for an industrial property use and coarse textured soils for any of the parameters analyzed. However, no soil or groundwater samples were reportedly submitted for laboratory analysis of petroleum hydrocarbon (PHC) fractions F1 to F4.
March 30, 2020	Geotechnical Investigation, Proposed Omega Project, 772 Winston Churchill Boulevard, Oakville, Ontario	7602928 Canada Inc. c/o H.H. Agnus and Associates Ltd.	FEIA	A geotechnical investigation was conducted to determine design and construction requirements for a proposed commercial/industrial redevelopment. Twelve boreholes were advanced across the Site to a maximum depth of 5.82 mbgs, as part of a combined Phase II ESA and Geotechnical Investigation conducted between February 1 and 26, 2016. Select soil samples were submitted to the laboratory to determine sulphate and sulphide concentrations, in order to evaluate the degree of sulphate and sulphide attack on concrete and metals reinforcement infrastructure. The concentrations were noted to be in an acceptable range and no issues were identified. No environmental concerns to soil and/or groundwater were identified, based on the review of the geotechnical report.

Date	Report Title	Prepared For	Prepared By	Findings and Areas of Potential Environmental Concern
April 22, 2020	Due Diligence Phase I Environmental Site Assessment, 772 Winston Churchill Boulevard, Oakville, Ontario	772 Winston Churchill Limited Partnership, by its general partner 772 Winston Churchill GP Inc	EXP Services Inc.	The Phase I ESA was conducted for due diligence purposes in support of a potential real estate transaction. Several potentially contaminating activities were identified on-Site, including soil material of unknown quality and former orchards. The off-site potentially contaminating activities identified included several industrial and commercial properties located to the north, northeast, and northwest of the Site. A Phase II ESA was conducted for the Site in 2016 (FEAI, 2016). Based on EXP's review, several data gaps were identified in the report, including: • Transportation businesses and storage tanks were identified at properties inferred upgradient (north) of the Site. Thus, PHC fractions F1 to F4 were identified as a potential contaminant of concern (pCOC). However, no soil or groundwater samples were collected for PHC fraction F1 to F4; • Orchards were identified at the Site, based on the review of the available 1965 aerial photograph, and organochlorine pesticides (OCPs) were identified as a pCOC. However, no soil sample were collected for OCPs; • A large soil stockpile identified at the southwest portion of the Site and a soil berm at the north boundary of the Site were considered to be soil material of unknown quality. No analytical testing was conducted at either of these locations; and, • No borehole was placed at the former building envelope to determine the fill material quality used to backfill the basement upon completion of the demolition. Furthermore, given that the previous due diligence Phase II ESA was conducted four years ago, the results and findings of the 2016 investigation were considered outdated.

Date	Report Title	Prepared For	Prepared By	Findings and Areas of Potential Environmental Concern
				Based on the above noted data gaps, a due diligence Phase II ESA was warranted to assess the current soil and groundwater quality at the Site.
April 22, 2020	Due Diligence Phase II Environmental Site Assessment, 772 Winston Churchill Boulevard, Oakville, Ontario	772 Winston Churchill Limited Partnership, by its general partner 772 Winston Churchill GP Inc	EXP Services Inc.	During the Phase II ESA, soil, groundwater and sediment quality was investigated to determine the environmental condition of the Site. The analytical results of the collected soil and groundwater samples were compared to O. Reg. 153/04 Table 8 SCS for use within 30 metres of a water body in a potable groundwater condition for a residential/parkland/institutional/ commercial/industrial/community property use and medium/fine textured soils. Soil samples were analyzed for PHC fraction F1 to F4, VOCs, PAHs, metals, inorganic parameters and/or OCPs. Groundwater samples were analyzed for PHC fractions F1 to F4 and VOCs. Sediment samples were analyzed for PAHs, metals, inorganic parameters and/or OCPs. All soil samples were within the O. Reg. 153/04 Table 8 SCS for all the parameters analyzed, with the following exceptions: • BH3-SS1, from grade to 0.61 metres below ground surface (mbgs) exceeded the Table 8 SCS for Electrical Conductivity (EC); and, • SP2-3, collected from a stockpile at a depth of 0.5 to 0.7 mbgs exceeded Table 8 for Dichlorodiphenyldichloroethane (DDD) and Dichlorodiphenyldichloroethylene (DDE). Given the proximity of BH3 to the adjacent roadway, elevated levels of EC in soil are deemed to be associated with the application of de-icing and salting substances along Winston Churchill Boulevard. As per Section 2 of Ontario Regulation 339 of the Revised Regulations of Ontario, 1990 (Classes of Contaminants – Exceptions) and section 48 (3) of Ontario Regulation 153/04, it is the QP's opinion that the applicable Table 8 Standard for EC at the Site was exceeded solely

Date	Report Title	Prepared For	Prepared By	Findings and Areas of Potential Environmental Concern
				because salt was used for the purpose of keeping adjacent roadways safe for traffic under conditions of snow or ice or both. Therefore, this parameter is not considered a contaminant of concern (COC) and is deemed to not be an exceedance of the Table 8 Standards. All groundwater samples were within the O. Reg. 153/04 Table 8 SCS Standards for all parameters analyzed. All sediment samples were within the O. Reg. 153/04 Table 8 SCS for all the parameters analyzed, with the following exceptions: • SED 1, exceeded the Table 8 SCS for copper and nickel; and, • SED 2, exceeded the Table 8 SCS for copper and nickel.

Additional delineation sampling was required to assess contaminants identified in the Phase II ESA (EXP, 2020b). Furthermore, the work completed during the Phase II ESA (EXP, 2020b), requires an update to O.Reg. 153/04 Standards to meeting the requirements of the Region of Halton.

4 Scope of Investigation

4.1 Overview of Site Investigation

The objective of the Phase Two ESA was to assess the APECs identified in the Phase I ESA completed by EXP (2020a) and to obtain additional soil, sediment, and groundwater data since the Phase II ESA (EXP, 2020b), to further characterize the Site to support the site plan application.

4.1.1 Scope of Work

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 proposed borehole locations and to clear the individual borehole locations;
- Oversee a MECP-licensed drilling contractor to advance eights (8) boreholes, obtain five (5) sediment samples, two (2) stockpile samples and three (3) hand auger samples;
- Collect representative soil samples from the boreholes for laboratory analysis of petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs). Organochlorine pesticides (OCs), metals and inorganics, and/or polycyclic aromatic hydrocarbons (PAHs);
- Develop all newly installed groundwater monitoring wells;
- Collect groundwater samples from the newly installed monitoring wells for laboratory analysis of PHCs, VOCs, OCs, and/or metals and inorganics;
- 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, sediment and groundwater.

4.3 Phase One Conceptual Site Model

Following the review of historical records, interviews, and site reconnaissance conducted as part of the Phase One ESA, it is possible to formulate an initial CSM. The CSM is a simplification of reality, which aims to provide a description and assessment of any areas where a PCA on or potentially affecting the Phase One Property has occurred, and any contaminants of potential concern.

A CSM was developed based on the findings of the Phase One investigation, completed in accordance with O.Reg. 153/04.

At the time of site reconnaissance, the Site was vacant with ongoing earthworks activities.

Clearview Creek is present at the western and southern Site boundaries and flows southeast towards Lake Ontario. The on-Site portions of Clearview Creek were realigned circa 2012. A SWMP was also constructed at the southeast corner of the Site at this time.

Based on the findings of the Phase I ESA (EXP, 2020a), several potentially contaminating activities were identified on-Site, including soil material of unknown quality and former orchards. The off-site potentially contaminating activities identified included several industrial and commercial properties located to the north, northeast, and northwest of the Site. Transportation businesses and storage tanks were identified at properties inferred upgradient (north) of the Site. Orchards were identified at the Site.

Contaminants of concern (COCs) associated with these PCAs include PHCs, VOCS, PAHs, OCs, metals and inorganics in soil, and PHCs and VOCs in groundwater.

The Site is located in a transition zone between the physiographic regions known as the Iroquois Plan and Shale Plains. The native surficial soils in this region are predominately composed of older glacial lake deposits, typically silty clay to silt till (Chapman and Putnam, 1984). The subject property is located in the Halton Till (Ontario-Erie lobe) quaternary region, which is an area with a silt to silty clay matrix, high in carbonate content and clast poor (Ontario Geological Survey, 2000).

According to the Geological Survey of Canada map of the area, the underlying geology comprises the Queenston Formation. Bedrock at the Site consists upper Ordovician shale, limestone, dolostone and siltstone (Ontario Geological Survey, 1991).

The topography in the vicinity of the Site is relatively flat with a gradual slope towards the south. Clearview Creek flows onto the subject property at the northwest corner of the Site. Clearview Creek was realigned to run south along the west boundary and east along the south boundary of the Site in 2012. A SWMP was also constructed at the southeast corner of the subject property, at this time.

The investigation undertaken by EXP with respect to this report and any conclusions or recommendations made in this report reflect EXP's judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. 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 are not anticipated to materially affect the validity of the CSM or Phase One conclusions.

4.4 Deviations from Sampling and Analysis Plan

The field investigative and sampling program was carried out following the requirements of the Site Sampling and Analysis Plan (SAAP) presented in Appendix D. It should be noted that SAAP provided in Appendix D was developed in relation to the original scope of work, however all subsequent work was conducted in accordance with the protocols outlined therein.

- No significant deviations from the SAAP were reported, that could affect the sampling and data quality objectives for the Site.

4.5 Impediments

There were no significant impediments encountered at the time of the site 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 hydrogeologic characterization and the collection of groundwater samples for chemical analysis.

Boreholes were advanced in the overburden soils by a licensed drilling company under the full-time supervision of EXP staff. The equipment used to advance the boreholes is described below.

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

The approximate locations of the boreholes and monitoring wells, stockpile samples, sediment samples, and hand auger pits are shown on Figure 2.

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 (All Clear Locates) was retained to clear individual borehole locations on March 16, 2021.

5.3 Borehole Drilling

The fieldwork for the soil investigative portion of the Phase Two ESA was carried out was carried out in two stages, from March 16 to 18, 2020, and on October 19, 2021. All boreholes were advanced by Tri-Phase Group to a maximum depth of 4.3 m bgs, under the full-time supervision of EXP staff.

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 E. Representative soil samples were recovered from the boreholes continuously using acetate liners.

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 D, to ensure that soil quality in each of the APECs identified in the Phase I ESA (EXP, 2020a) was characterized in accordance with O.Reg.153/04.

Soil samples were collected for geologic characterization and chemical analysis on a discrete basis in the overburden materials using split spoon sampling cores. The soil cores were extruded from the samplers upon retrieval by drilling personnel. Geologic details of the recovered cores were logged by EXP field staff and samples were collected from selected cores for chemical analysis. Field observations are summarized on the borehole logs which were prepared from the field logs and provided in Appendix E.

The sediment and hand auger samples were obtained with a stainless steel hand auger. The stockpile samples were obtained with a trowel or shovel.

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. Samples intended for PHC fractions F1 and VOCs were collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes and sealed using Teflon lined lids.

Soil samples selected for laboratory analysis 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. Reusable sampling equipment (e.g. split spoons) was decontaminated between borehole locations 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.

Soil samples submitted for specific chemical analysis were selected on the basis of visual inspection of the recovered cores, total organic vapour (TOV) readings, sample location and/or depth interval. The rationale for soil sample submission is presented in Table 4.

Appropriate quality assurance/quality control (QA/QC) samples were collected during soil sampling, including field duplicate samples, as presented in Appendix F.

5.5 Soil: Field Screening Measurements

Where required for the characterization of volatile parameters, a portion of each soil core was placed in a sealed plastic bag and allowed to reach ambient temperature prior to field screening, using an RKI Eagle II (RKI) device equipped with a Photoionization Detection (PID) instrument, calibrated with isobutylene and hexane gases. 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 combustible vapours encountered in the subsurface during drilling and are used to aid in the assessment of the vertical and horizontal extent of volatile parameter contamination and the selection of soil samples for analysis.

The field screening measurements, in parts per million (ppm) isobutylene and hexane equivalents, are presented on the borehole logs in Appendix E. It should be noted that field measurements are for screening purposes only and the presence/absence of contamination is determined by laboratory analysis.

Each sample was additionally examined for visual, textural, and olfactory classification at the time of sampling.

5.6 Groundwater: Monitoring Well Installation

No groundwater monitors were installed as part of the Phase Two Investigation. However, pre-existing monitors MW101 to M103, and MW110, installed in 2016, were sampled.

When the monitoring wells are no longer required, they must be decommissioned in accordance with the procedure outlined in the Ontario Water Resources Act - R.R.O. 1990, Regulation 903 - amended to O. Reg. 128/03.

5.7 Groundwater: Monitoring Well Development

No groundwater monitors were installed as part of the Phase Two Investigation

5.8 Groundwater: Purging and Field Measurements of Water Quality Parameters

The depth to groundwater and presence/absence of light non-aqueous phase liquids (LNAPL) at each monitoring well was measured utilizing an electronic oil/water interface probe. The water level measurements and LNAPL readings, if any, were recorded on log sheets or in a bound field book. The interface probe was decontaminated between monitoring well locations.

Prior to collecting groundwater samples, field measurements of water quality parameters were recorded from the monitoring wells utilizing low flow purging and sampling methodologies. Groundwater was purged from each location using a peristaltic and/or bladder pump and dedicated LDPE tubing. Field measurements of dissolved oxygen concentration, electrical conductivity, oxidation-reduction potential, pH, temperature, turbidity and water levels were recorded during the purging activities using a pre-calibrated multi probe water quality meter, a turbidity meter and an interface probe. Groundwater was considered to be chemically stable when the pH measurements of three (3) successive readings agreed to within ± 0.1 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.

Equipment used during groundwater monitoring were thoroughly cleaned and decontaminated between wells. Well purging details were recorded on log sheets or in a bound field book.

5.9 Groundwater: Sampling

The groundwater sampling conducted during the completion of this Phase Two ESA was undertaken in accordance with the SAAP presented in Appendix D, to ensure that the APECs identified in the Phase I ESA (EXP, 2020a) were properly characterized, in accordance with O.Reg.153/04.

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/or PHC F1 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. Samples for Inductively Coupled Plasma Mass Spectrometry (ICPMS) metals were collected using disposable 0.45 micron field filters, supplied by Maxim Environmental and Safety Inc. (Maxim).

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 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.

Appropriate QA/QC samples were collected during groundwater sampling, including field duplicate samples, where required, as presented in Appendix F.

5.10 Sediment Sampling

Sediment samples were obtained using a hand auger from five (5) locations, three (3) on-Site, and two (2) off-site.

5.11 Analytical Testing

The contractual laboratory selected to perform the chemical analyses was Agat labs (AGAT), of Mississauga, ON. AGAT is an accredited laboratory under the Standards Council of Canada/Canadian Association of Environmental Analytical Laboratories in accordance with ISO/IEC 17025:2005 – “General Requirements for the Competence of Testing and Calibration Laboratories”.

5.12 Residue Management Procedures

The residue materials produced during the borehole drilling, soil sampling, monitoring well development, and monitoring well sampling programs comprised of soil cuttings, decontamination fluids from equipment cleaning, and waters from well development and purging. All soil cuttings and development and purged water was collected and stored on-Site in labeled, sealed containers for future disposal.

5.13 Elevation Survey

An elevation survey was not conducted for the purpose of the Phase Two ESA. However, elevations of monitors and boreholes were extrapolated using detailed topographic maps of the Site (Appendix B).

5.14 Quality Assurance and Quality Control Measures

Quality Control/Quality Assurance measures, as set out in the SAAP, were implemented during sample collection, storage and transport to provide accurate data representative of conditions in the surficial fill 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. 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/or split spoons 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.

A total of one (1) duplicate soil sample (GS1-0), one (1) groundwater duplicate sample (MW1030), and one (1) sediment duplicate sample (SED102-0) were collected during the Site investigation. A list of all field duplicates are presented in Appendix F.

6. Review and Evaluation

6.1 Geology

The soil investigation conducted at the Site for the environmental assessment consisted of the advancement of eight (8) boreholes into the overburden materials to a maximum depth of 4.3 m bgs. The borehole logs describing geologic details of the soil conditions observed at the Site during the sub-surface investigation are presented in Appendix E. 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.

Site stratigraphy was generally observed to consist of topsoil overlying clayey silt to silty clay to a maximum depth of 0.86 mbgs, underlain by sand to sandy silt. Bedrock was encountered at approximately 3.8 mbgs across the Site. A brief description of the soil stratigraphy at the Site, in order of depth, is summarized in the following sections. Refer to the borehole logs provided in Appendix E for details of soil stratigraphy.

6.1.1 Surface Material

Approximately 3 to 10 cm of brown/clayey silt topsoil with trace to some gravel and some sand, rootlets was observed across the Site.

6.1.2. Fill Material

No fill material, with the exception of the two stockpiles located, on-Site, was identified during the investigation.

6.1.3. Native Material

Native materials consisted of heterogeneous brown to grey clayey silt to sandy silt with some gravel and sand or clay to a maximum depth of 0.86 m bgs. It was underlain by brown to grey silty sand to sandy silt, with some clay and trace gravel. Grey shale cobbled were observed from 2.29 mbgs in some boreholes.

6.1.4 Bedrock

The upper boundary of the grey weather shale bedrock was observed from 2.70 to 3.80 m bgs across the Site.

6.2 Groundwater: Elevations and Flow Direction

The monitoring well network advanced as part of this Phase Two ESA consisted of four (4) pre-exiting monitoring wells, installed in 2016. Screen depths ranged from approximately 0.89 to 3.89 mbgs at MW110, 1.48 to 4.48 mbgs at MW101, 1.44 to 4.44 mbgs at MW102, and 0.99 to 3.99 mbgs at BH103. Groundwater levels were measured between 0.25 (MW102) to 1.22 (MW101) mbgs on March 18, 2020. The groundwater levels and corresponding elevations are summarized in Table 3, and presented in the borehole logs provided in Appendix E.

Based on the groundwater elevations measured across the Site, local groundwater flow direction was calculated in the shallow aquifer in the south to southeasterly direction.

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 gradient in the shallow aquifer across the site was calculated to be approximately 0.006 m/m.

A vertical hydraulic gradient was not measured as part of this investigation.

6.3 Soil Texture

Based on the observed native soil type at the Site (sandy silt), the soil texture at the Site was determined to be fine textured soils.

6.4 Soil: Field Screening

TOV readings from each sample interval were measured for soil sample selected for BTEX/PHC and VOC analysis from all test pits and boreholes within the APECs where BTEX/PHCs and VOCs were identified as COCs. 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 E.

Soil samples submitted for chemical analysis were selected on the basis of visual inspection of the recovered soils/cores, TOV readings, sample location and/or depth interval. The maximum hexane and isobutylene readings during the investigation were <25 ppm for hexane.

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 G. A summary of the analytical results for the soil samples, including the locations and depths of each sample, a comparison of concentrations against applicable SCS, and the identification of the potential contaminants of concern, are provided in Tables 5 to 9.

6.5.1 Metals & Inorganics

Seven (7) soil samples were analyzed for one or more of metals and/or inorganics. The results of the analysis together with the applicable Table 8 SCS are presented in Table 8.

As shown in Table 8, all metals and inorganics were either not detected or detected below the applicable Table 3 SCS with the exception of the following:

- BH3-SS1
    - EC at 0.994 mS/cm versus the SCS of 0.7 mS/cm.

The laboratory RDLs were below the Table 8 SCS.

Given the proximity of BH3 to the adjacent roadway, elevated levels of EC in soil are deemed to be associated with the application of de-icing and salting substances along Winston Churchill Boulevard. As per Section 2 of Ontario Regulation 339 of the Revised Regulations of Ontario, 1990 (Classes of Contaminants – Exceptions) and section 48 (3) of Ontario Regulation

153/04, it is the QP's opinion that the applicable Table 8 Standard for EC at the Site was exceeded solely because salt was used for the purpose of keeping adjacent roadways safe for traffic under conditions of snow or ice or both. Therefore, this parameter is not considered a contaminant of concern (COC) and is deemed to not be an exceedance of the Table 8 Standards.

6.5.2 Polycyclic Aromatic Hydrocarbon

Seven (7) soil samples were analyzed for PAHs. The results of the analysis together with the applicable Table 8 SCS are presented in Table 7.

As shown in Table 7, PAHs were not detected or detected below the applicable Table 8 SCS.

The laboratory RDLs were below the Table 8 SCS.

6.5.3 Petroleum Hydrocarbons including BTEX

Seven (7) soil samples were analyzed for PHCs including BTEX. The results of the analysis together with the applicable Table 8 SCS are presented in Table 5.

As shown in Table 5, PHCs and BTEX were not detected or detected below the applicable Table 8 SCS.

The laboratory RDLs were below the Table 8 SCS.

6.5.4 Volatile Organic Compounds

Seven (7) soil samples were analyzed for VOCs. The results of the analysis together with the applicable Table 3 SCS are presented in Table 6.

As shown in Table 6, VOCs were either not detected or detected below the applicable Table 8 SCS. The laboratory RDLs were below the Table 8 SCS.

6.5.5 Organochlorine Pesticides

Ten (10) soil samples and (1) QA/QC field duplicate were analyzed for OCs. The results of the analysis together with the applicable Table 8 SCS are presented in Table 9.

As shown in Table 9, OCs were either not detected or detected below the applicable Table 8 SCS with the following exceptions:

- SP2-3-0.5-0.7m
  - DDD at 0.056 ug/g versus the SCS of 0.5 ug/g and DDE at 0.28 ug/g versus the SCS of 0.05 ug/g.
- GS1
  - DDE at 0.145 ug/g versus the SCS of 0.05 ug/g.
- GS1-0
  - DDE at 0.193 ug/g versus the SCS of 0.05 ug/g.

The laboratory RDLs were below the Table 8 SCS.

6.5.6 Soil pH

Seven (7) were analyzed for pH. The Table 3 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). The reported pH values ranged from 7.23 and 7.94.

All boreholes were within the Table 8 SCS range of 5 to 9 for pH. Refer to Table 8 for a summary of the soil samples analyzed for pH.

6.5.7 Chemical Transformation and Soil Contaminant Source

With the exception of OCs, there are no concentrations of the chemical constituents of soil present on the property that are above the applicable Table 8 SCS. The OC impacts localized within the stockpile at the northern portion of the Site are not expected to undergo chemical transformation and do not act as a contaminant source for the rest of the property.

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 at the time of the Phase Two ESA.

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 G.

6.6.1 Metals

One (1) groundwater sample and one (1) QA/QC field duplicate were analyzed for metals. The results of the analysis together with the applicable Table 8 SCS are presented in Table 12.

As shown in Table 12, metals and inorganics were either not detected or detected below the applicable Table 8 SCS. The laboratory RDLs were below the Table 8 SCS.

6.6.2 Volatile Organic Compounds

Four (4) groundwater samples were analyzed for VOCs. The results of the analysis together with the applicable Table 8 SCS are presented in Table 11.

As shown in Table 11, VOCs were either not detected or detected below the applicable Table 8 SCS. The laboratory RDLs were below the Table 8 SCS.

6.6.3 Petroleum Hydrocarbons Including BTEX

Four (4) groundwater samples were analyzed for PHCs and BTEX. The results of the analysis together with the applicable Table 8 SCS are presented in Table 10.

As shown in Table 10, PHCs including BTEX were either not detected or detected below the applicable Table 8 SCS. The laboratory RDLs were below the Table 3 SCS.

6.6.4 Organochlorine Pesticides

One (1) groundwater sample and one (1) duplicate sample were analyzed for OCs. The results of the analysis together with the applicable Table 8 SCS are presented in Table 13.

As shown in Table 13, OCs were either not detected or detected below the applicable Table 8 SCS. The laboratory RDLs were below the Table 8 SCS.

6.6.5 Chemical Transformation and Groundwater Contaminant Source

Given that no groundwater contaminants were identified during the Phase Two ESA, chemical and biological transformations is not expected in quantities of regulatory relevance.

6.6.6 Evidence of Non-Aqueous Phase Liquid (NAPL)

Inspection of the purged groundwater retrieved from the monitoring wells did not indicate the presence of NAPL, staining, sheen, or odour.

6.7 Sediment Quality

In accordance with the scope of work, chemical analyses were performed on sediment samples recovered from the creek running through the site. The selection of sediment samples was based on location and to assess potential off-site impacts.

Copies of the laboratory Certificates of Analysis for the analyzed groundwater samples are provided in Appendix G.

6.7.1 Polycyclic Aromatic Hydrocarbons

Two (2) sediment were analyzed for PAHs. The results of the analysis together with the applicable Table 8 SCS are presented in Table 14.

As shown in Table 14, PAHs were not detected or detected below the applicable Table 8 SCS.

The laboratory RDLs were below the Table 8 SCS.

6.7.2 Metals and Inorganics

Two (2) sediment were analyzed for Metals and Inorganics. The results of the analysis together with the applicable Table 8 SCS are presented in Table 15.

As shown in Table 15, Metals were not detected or detected below the applicable Table 8 SCS with the following exception:

- SED1
    - Copper at 29 ug/g versus the SCS of 16 ug/g and Nickel at 28 ug/g versus the SCS 16 ug/g;
- SED 2
    - Copper at 31 ug/g versus the SCS of 16 ug/g and Nickel at 30 ug/g versus the SCS 16 ug/g.
- SED101
    - Copper at 33.2 ug/g versus the SCS of 16 ug/g and Nickel at 28 ug/g versus the SCS 16 ug/g.
- SED102
    - Arsenic at Copper at 18 ug/g versus the SCS of 6 ug/g, Copper at 22.2 ug/g versus the SCS of 16 ug/g, and Lead at 79 ug/g versus the SCS 31 ug/g.
- SED102-0 (duplicate of SED102)

- Arsenic at Copper at 19 ug/g versus the SCS of 6 ug/g, Copper at 22.1 ug/g versus the SCS of 16 ug/g, and Lead at 72 ug/g versus the SCS 31 ug/g.

- SED103

  - Copper at 29.2 ug/g versus the SCS of 16 ug/g and Nickel at 26 ug/g versus the SCS 16 ug/g.

The laboratory RDLs were below the Table 8 SCS.

6.7.2 Organochlorine Pesticides

Two (2) sediment were analyzed for OCs. The results of the analysis together with the applicable Table 8 SCS are presented in Table 16.

As shown in Table 1, OCs ere not detected or detected below the applicable Table 8 SCS. The laboratory RDLs were below the Table 8 SCS.

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.

Field QA/QC samples were collected during soil and groundwater sampling. A total of one (1) OCs soil duplicate samples, as well as one (1) metal and one (1) OCs groundwater duplicate samples were collected to evaluate sampling precision. Refer to Table F-1A for a summary of the QA/QC samples collected and submitted for chemical analysis.

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 contractual laboratory selected to perform the chemical analyses was Agat Laboratories (AGAT) of Mississauga, ON. AGAT is an accredited laboratory under the Standards Council of Canada/Canadian Association of Laboratory Accreditation 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 G. 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.

6.9 Limited Risk Evaluation

As a result of the identification of several exceedances of the Table 8 SCS in soil and sediment, a limited risk evaluation was completed to determine potential human health and ecological risks associated with leaving these impacts on-Site. Screening of the maximum concentrations of the COCs against the applicable MECP component values was completed. By way of background and context, as part of the derivation of the generic MECP SGWS Standards, the MECP has developed risk-based values deemed protective of the various human and ecological Site receptor/exposure pathway scenarios, which are referred to as component values. The various human receptors included in these scenarios include residential or commercial human receptors (*e.g.,* property resident, indoor workers, construction workers etc.). The various ecological receptors include plants, soil invertebrates, representative mammals and birds and various aquatic species. Some of the exposure pathways included in the scenarios comprise the dermal contact, ingestion, vapour inhalation, and the groundwater migration to surface water. Each of these scenarios is evaluated separately by the MECP for each contaminant regulated under O. Reg. 153/04.

Given the intended future ~~residential~~ mixed commercial/industrial land use, the relevant human receptors include indoor workers, outdoor maintenance workers~~Site residents~~ and property visitors. Construction workers are also anticipated to be on-Site during redevelopment. Ecological receptors include various terrestrial vegetation, soil invertebrates, small mammals and birds. In addition, given the presence of Clearview Creek on-Site, aquatic receptors (various species of fish, invertebrates, amphibians, aquatic plant species and aquatic and semi aquatic mammals and birds) may also be present.

Further discussion on the relevant exposure pathways applicable to the above-noted receptors and a limited risk evaluation are provided for each media in the sections below.

6.9.1 Soil

The soil COCs identified for the Site are DDD and DDE. Based on the identified soil impacts, the relevant exposure pathways (i.e., component values) applicable to these receptors based on the use of the site include:

- ~~S1 – human health soil dermal contact and incidental ingestion at a high frequency and high intensity in a residential/parkland/institutional setting.~~
- S2 – human health soil dermal contact and incidental ingestion at a lower frequency and intensity in a commercial/industrial setting, applicable to outdoor maintenance workers.
- S3 – human health soil dermal contact, incidental ingestion and soil particulate inhalation protective of workers undertaking excavation works.
- S-GW1 – human health exposure pathway due to movement of a substance from the soil to groundwater then to a human receptor via drinking water.
- Plants & Soil Organisms – ecological exposure pathway due to direct contact of terrestrial plants and soil invertebrates.
- Mammals & Birds – ecological exposure pathway due to direct contact of terrestrial mammals and birds.
- S-GW3 – ecological exposure pathway due to movement of a substance from soil to groundwater then to aquatic receptors in a surface water body.
- Sediment Quality – Sediment quality guidelines for protection of sediment dwelling organisms, considered applicable to assess soil erosion/run-off pathway.

Screening of the maximum concentrations against the applicable component values noted above is summarized in the Table, below:

Parameter	Maximum Concentration (µg/g)	Component Values[1] (µg/g)						
		~~S1~~S2	S3	S-GW1	Plants and Soil Organisms	Mammals and Birds	S-GW3	Sediment Quality
OCPs								
DDD	0.056	~~3.3~~4.6	110	1,800	~~8.5~~17	NV	38,000,000	**0.008**
DDE	0.28	3.2~~2.3~~	110	1,800	0.~~33~~65	NV	350,000,000	**0.005**

[1] Component values obtained from MECP Table 8 component values (MECP, 2016), where available. Table 8 component values defer to Table 2 component values in some cases. Table 2 component values for commercial/industrial ~~residential~~ land use, with medium to fine textured soils in a potable groundwater condition were applied, where applicable. ~~The S3 component value was obtained from the Table 2 component values for an industrial/commercial/community use.~~

Bold = concentration is exceeded by maximum on-Site concentration.
NV = No Value.

The maximum concentrations of DDD and DDE are within all applicable human health and ecological component values with the exception of sediment quality. However, based on the sediment samples collected, sediment concentrations of DDD and DDE are below sediment SCS, therefore soil erosion/run-off is not considered to be significant.

No MECP component values are available for mammal and bird exposure to DDD and DDE. However, given that only two (2) of ten (10) sampling locations exceeded the Table 8 SCS for either DDD or DDE, and exceedances were limited to a portion of one of the stockpiles present on-S~~s~~ite, it is considered unlikely that these elevated concentrations of DDD and DDE will pose a significant concern to the overall populations of mammals and birds that may frequent the Site.

While DDE is considered volatile based on MECP's definition of volatility (Henry's Law constant greater than 1x10-5 atm-m^3/mol and/or the vapour pressure is greater than 1.0 Torr at the average groundwater temperature of 15 ^oC), no MECP component value is available for inhalation pathways. Vapour inhalation of DDE is likely to be insignificant given the following:

- DDE may be volatile in moist soils based on the Henry's Law constant (1.14E-05 atm-m^3/mol), but it is not expected to volatilize from dry soils based on its low vapor pressure (6.00E-06 Tor) (US EPA, 2008a);
- DDE volatilization is expected to be attenuated by adsorption to carbon sources. Due to a high adsorption coefficient, DDE is expected to strongly sorb onto soil particles (US EPA, 2008a); and,
- The estimated half-life of DDE is only 17 hours to 2-days as it reacts with photochemically-produced hydroxy radicals (US EPA, 2008b).

Overall, based on the above evaluation, no unacceptable risks are anticipated as a result of DDD and DDE in soil ~~are not anticipated to pose a concern to human and ecological receptors that may be present~~ on-Site.

6.9.2 Groundwater

Given that the minimum depth to groundwater was reported to be 0.25 mbgs, the depth to groundwater on the Site is not consistent with the assumptions applied by the MECP in the evaluation of the indoor air vapour intrusion pathway under the Table 8 SCS. The depth to groundwater reflects the distance and opportunity for potential contaminant biodegradation and natural attenuation to occur, which are considered in the modelling of the groundwater to indoor air exposure pathway. As such, as part of the risk evaluation volatile groundwater parameters were also compared to the Table 6 SCS for all types of property use (herein referred to as the Table 6 SCS). The Table 6 SCS is representative of a shallow groundwater scenario as it was derived as a conservative scenario where biodegradation cannot be assured and where soil may not be present to provide attenuation. In keeping with the MECP, a groundwater parameter was considered sufficiently volatile if the parameter has a Henry's Law constant greater than $1x10^{-5}$ atm-m^3/mol and/or the vapour pressure is greater than 1.0 Torr at the average

groundwater temperature of 15 °C. Based on the comparison of chemical concentrations in groundwater to the Table 6 SCS, no exceedances were identified. As such, groundwater is not considered further in the risk evaluation.

6.9.3 Sediment

Exceedances of the MECP Table 1 SCS for sediment was identified for arsenic, copper, lead and nickel.

Where a sediment SCS was not available, the data were compared to the MECP Table 1 background Standards for soil. The Table 1 soil Standards are considered applicable as sediment concentrations would be influenced by erosion of adjacent soil by wind/run-off and are based on Ontario background concentrations. All parameters without sediment SCS were within the Table 1 soil SCS. Therefore, no further consideration was given to these parameters.

As per Health Canada (2017), in the absence of applicable human health-based sediment guidelines, sediment concentrations may be screened against available human health-based ~~residential/parkland~~ soil quality guidelines (or criteria) for scenarios where only direct contact of contaminants from sediment is expected. Based on the above, and also taking into consideration ecological receptors, the relevant exposure pathways (i.e., component values) applicable to human and ecological receptors based on the intended ~~residential~~ commercial/industrial use of the site include:

- S2 – human health soil dermal contact and incidental ingestion at a lower frequency and intensity in a commercial/industrial setting, applicable to outdoor maintenance workers.
- ~~S1 – human health soil dermal contact and incidental ingestion at a high frequency and high intensity in a residential/parkland/institutional setting.~~
- S3 – human health soil dermal contact, incidental ingestion and soil particulate inhalation protective of workers undertaking excavation works.
- Sediment Quality – Sediment quality guidelines for protection of sediment dwelling organisms, considered applicable to assess soil erosion/run-off pathway.

Consideration was also given to background sediment concentrations and sediment Severe Effect Levels (SELs) as provided by MECP (2008). The SEL indicates a level of contamination that is expected to be detrimental to the majority of sediment dwelling organisms. It is noted that the MECP Lowest Effect Level (LEL), that is, the level of contamination that can be tolerated by the majority of sediment-dwelling organisms are equivalent to the Sediment Quality values provided by MECP (2016).

Screening of the maximum concentrations against the applicable generic component values noted above is summarized in the Table, below:

Parameter	Maximum Concentration (µg/g)	Component Values[1] (µg/g)			MECP (2008) Background Sediment Concentrations (µg/g)	MECP (2008) Severe Effect Level (SEL) (µg/g)
		~~S1~~S2	S3	Sediment Quality		
Metals						
Arsenic	19	**0.~~15~~2**	**7.4**	**6**	**4**	33
Copper	33.2	~~200~~1,900	1,900	**16**	**25**	110
Lead	79	~~120~~1,000	1,000	**31**	**23**	250
Nickel	30	~~46~~310	310	**16**	31	75

[1] Component values obtained from MECP Table 8 component values (MECP, 2016). Table 8 component values defer to Table 2 component values with the exception of sediment quality component values. Table 2 component values for commercial/industrial~~residential~~ land use, with medium to fine textured soils in a potable groundwater condition were applied, where applicable. ~~The S3 component value was obtained from the Table 2 component values for an industrial/commercial/community use.~~

Bold = concentration is exceeded by maximum on-Site concentration.
NV = No Value.

The maximum concentration of arsenic exceeds the relevant generic component values applicable to human and ecological health. However, ~~T~~the elevated levels of arsenic were identified at only one (1) location in sediment (SED 102). The concentration of arsenic identified in sediment is almost equivalent to the background concentration in soil (18 µg/g). It is noted that the field duplicate sample collected from the location of the maximum concentration returned a concentration of 18 µg/g. As such, concentrations of arsenic in sediment are attributed to background levels in soil and is considered unlikely to pose a concern to users of the Site. From an ecological perspective, it is further noted that the maximum concentration is within the SEL, which would indicate heavy contamination.

The maximum concentrations of copper, lead and nickel in sediment are within the relevant human health component criteria (i.e. S1 and S2) and therefore are not anticipated to pose a concern to human health. However, these parameters~~, however~~ exceed the sediment quality component value, considered protective of aquatic life. Further evaluation of aquatic life exposure to copper, lead and nickel is provided below.

It is noted that the maximum concentration of nickel is below typical Ontario background sediment concentrations, as such unacceptable risk to sediment-dwelling organisms as a result of the nickel identified on-~~s~~Site is considered low. It is further noted that similar concentrations of nickel were identified in the upgradient sediment sample (SED 101), indicating the sources other than on-Site are responsible for the elevated concentrations or are typical of background concentrations for the area.

While concentrations of copper and lead exceed typical background sediment concentrations, the maximum concentrations are well below the SELs. Furthermore, the concentrations identified in sediment are well below soil background concentrations of 92 µg/g and 120 µg/g for copper and lead, respectively. For copper, it is additionally noted that similar concentrations were identified in upgradient sediment sample (SED 101). Therefore, concentrations are attributed to background levels in soil and is unlikely to significantly affect aquatic life.

Overall, based on the above evaluation, no unacceptable risks are anticipated as a result of the elevated levels of select metals in sediment on-Site ~~are not anticipated to pose a concern to human and ecological receptors that may be present on-Site~~.

6.10 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 H.

7. Conclusions

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

1. From March 16 to 18, 2021 eight (8) boreholes (BH1 to BH8), two stockpile samples, and two sediment samples were advanced at the Site. None of the boreholes were completed as monitoring wells. The maximum depth of the boreholes advanced during the course of the investigation was approximately 4.3 mbgs. On October 19, 2021 three (3) hand auger pits and three sediment samples were obtained from the Site. The maximum depth of this portion of the investigation was approximately 0.6 mbgs.
2. The general stratigraphy at the Site, as observed in the boreholes, consisted of topsoil overlying clayey silt to silty clay to a maximum depth of 0.86 mbgs, underlain by sand to sandy silt. Bedrock was encountered at approximately 3.8 mbgs across the Site.
3. The monitoring well network advanced as part of this Phase Two ESA consisted of four (4) pre-existing monitoring wells (MW110, MW101, MW102 and MW103), installed in 2016. Screen depths ranged from approximately 0.89 to 3.89 mbgs at MW110, 1.48 to 4.48 mbgs at MW101, 1.44 to 4.44 mbgs at MW102, and 0.99 to 3.99 mbgs at BH103. Groundwater levels were measured between 0.25 (MW102) to 1.22 (MW101) mbgs on March 18, 2020.
4. The local groundwater flow direction was calculated to the south to southeast, towards Clearview Creek which is present at the western and southern Site boundaries. Clearview Creek flows southeast towards Lake Ontario.
5. Soil samples were submitted for the analysis of PHCs, BTEX, VOCs, PAHs, OCs, metals, hydride forming metals, EC, pH, and/or SAR.
6. Seven (7) soil samples PHCs, VOCs and PAHs. PHCs, VOCs, and PAHs were either not detected or detected below the applicable Table 8 SCS.
7. Seven (7) soil samples were analyzed for metals and inorganics. Metals and inorganics were either not detected or detected below the applicable Table 8 SCS with the exception of EC at BH3-SS1.
8. Ten (10) soil samples and one (1) duplicate were analyzed for OCs. OCs were either not detected or detected below the applicable Table 8 SCS with the exception of DDD and DDE at SP2-3-0.5-0.7m, obtained from a stockpile at the northern Site boundary and DDE at GS-1 and it's duplicate GS1-0, obtained from 0.4 metres.
9. Groundwater samples were submitted for the analysis of PHCs and VOCs.
10. Four (4) groundwater samples were analyzed for PHCs and VOCs. PHCs and VOC were either not detected or detected below the applicable Table 8 SCS.
11. One (1) groundwater sample and one (1) QA/QC duplicate were analyzed for metals and OCs. Metals and OCs were either not detected or detected below the applicable Table 8 SCS.
12. Sediment samples were submitted for analysis of PAHs, metals and inorganics, and OCs.
13. Two (2) sediment samples were analyzed for PAHs and OCs. PAHs and OCs were either not detected or detected below the applicable Table 8 SCS.
14. Five (5) sediment samples and one (1) QA/QC duplicate were analyzed for metals and/or inorganics. Metals and/or inorganics were either not detected or detected below the applicable Table 8 SCS with the exception of copper and nickel at SED1, SED2, SED101, and SED103 and arsenic, copper and lead at SED 102.
15. No evidence of free product (i.e. visible film or sheen), or odour was observed during soil sampling, groundwater purging, or groundwater sampling activities.

Based on the limited risk assessment conducted for the soil, groundwater, and sediment analytical results, no unacceptable risks are anticipated to human and ecological receptors that may be present on-Site as a result of the elevated levels of select metals in sediment and OCs in soil on-Site ~~are not anticipated to pose a concern to human and ecological receptors that may be present on-Site~~. No further environmental work is required, at this time.

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 regard 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 MECP. 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.

This report was prepared for the exclusive use of **772 Winston Churchill Limited Partnership, by its general partner 772 Winston Churchill GP Inc.** and may not be reproduced in whole or in part, without the prior written consent of EXP, or used or relied upon in whole or in part by other parties for any purposes whatsoever. Any use which a third party makes of this report, or any part thereof, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. EXP Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

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.

Sarah DiBattista, B.Sc., M.Env.Sc.
Environmental Scientist
Environmental Services

Amanda Catenaro, M.Env.Sc, P.Geo.
Project Manager
Environmental Services

10 References

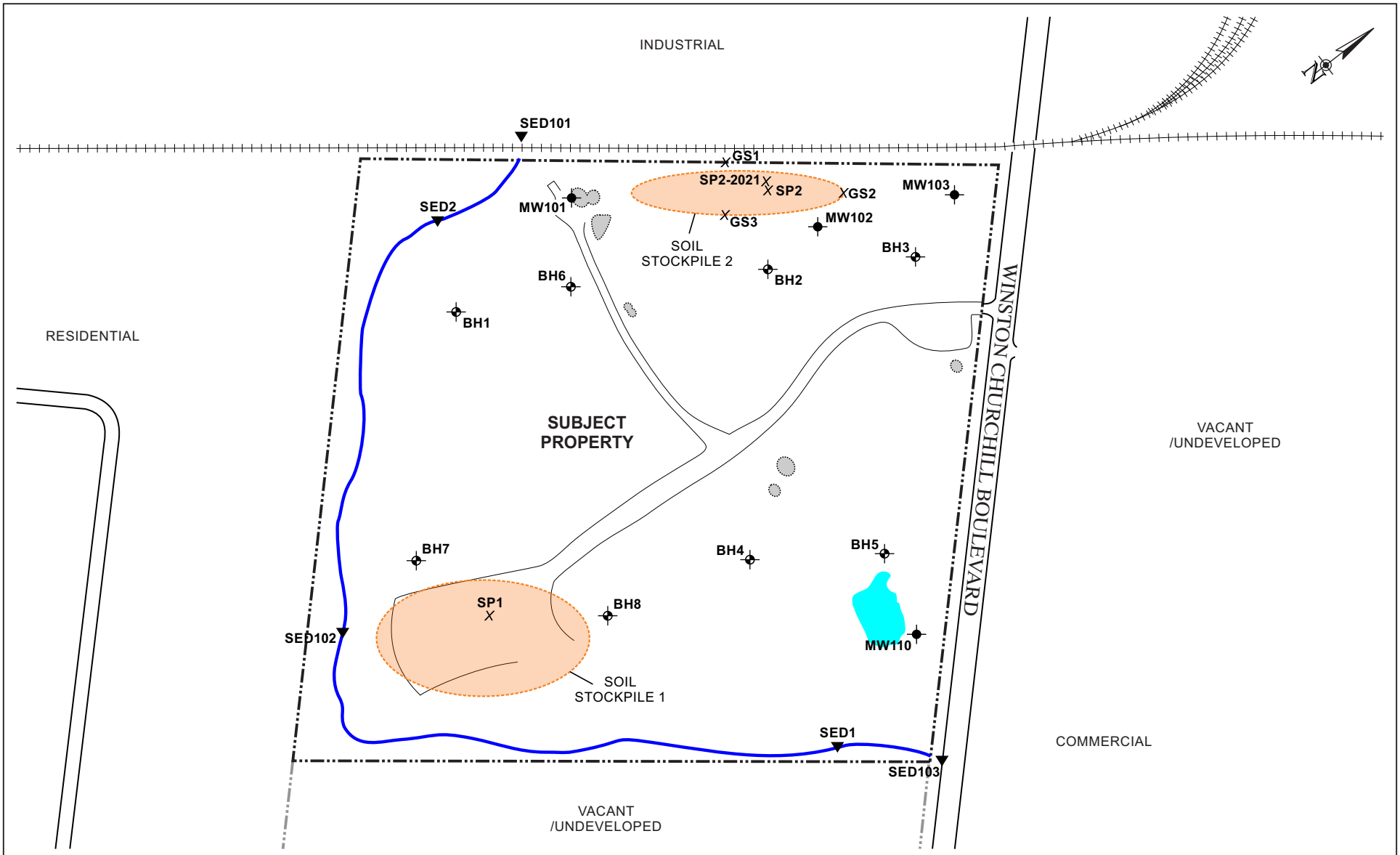
This study was conducted in general accordance with the applicable Regulations, Guidelines, Policies, Standards, Protocols and Objectives administered by the Ministry of the Environment, Conservation and Parks. Specific reference is made to the following:

- Bedrock Geology of Ontario - geology_ll.shp [computer file],Ontario: Ontario Geological Survey, 2000.
- Environmental Protection Act, R.S.O. 1990, Chapter E.19, as amended, September 2004.
- Exp Services Inc., Due Diligence Phase I Environmental Assessment, 772 Winston Churchill Boulevard, Oakville, Ontario, April 22, 2020.
- Exp Services Inc., Due Diligence Phase II Environmental Assessment, 772 Winston Churchill Boulevard, Oakville, Ontario, April 22, 2020.
- Ministry of the Environment [MECP] (1996) Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario. Ontario Ministry of the Environment, December 1996.
- MECP (2008). Guidelines for Identifying, Assessing and Managing Contaminated Sediments in Ontario: An Integrated Approach. Ontario Ministry of the Environment, May 2008.
- 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.
- 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.
- MECP (2016). Modified Generic Risk Assessment “Approved Model”. Ontario Ministry of the Environment and Climate Change, November 1, 2016.
- Occupational Health and Safety Act - Ministry of Labour (MOL).
- Ontario Regulation 153/04, made under the Environmental Protection Act, May 2004, amended.
- Ontario Water Resources Act – R.R.O. 1990, Regulation 903, amended.
- Ontario Base Mapping (OBM) Data, provided by ERIS. Scale 1:22,000.
- Quaternary Geology of Ontario - geology_ll.shp [computer file],Ontario: Ontario Geological Survey, 2000.
- US EPA (2008a). Health Effects Support Document for 1,1,-Dichloro-2,2,-bis(p-chlorophenyl)ethylene (DDE). EPA Doc EPA-822-R-08-003, January 2008. Office of Water (4304T), Health and Ecological Criteria Division, Washington, DC
- US EPA (2008b). Regulatory Determinations Support Document for Selected Contaminants from the Second Drinking Water Contamnant Candidate List (CCL 2) Chapter 5: DDE. EPA Repot 815-R-08-012.

Figures

SCALE: 0 500 1000m	**SOURCE:** **GOOGLE MAPS**		LOCALITY PLAN	FIGURE 1
exp.	DRAWN BY	CHECKED BY	772 WINSTON CHURCHILL BOULEVARD OAKVILLE , ONTARIO	
	J.D.H.	C.F.	PROJECT NUMBER: 258896	DATE: MARCH 2020

258896-LOCALITY-MAR20



SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	A.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

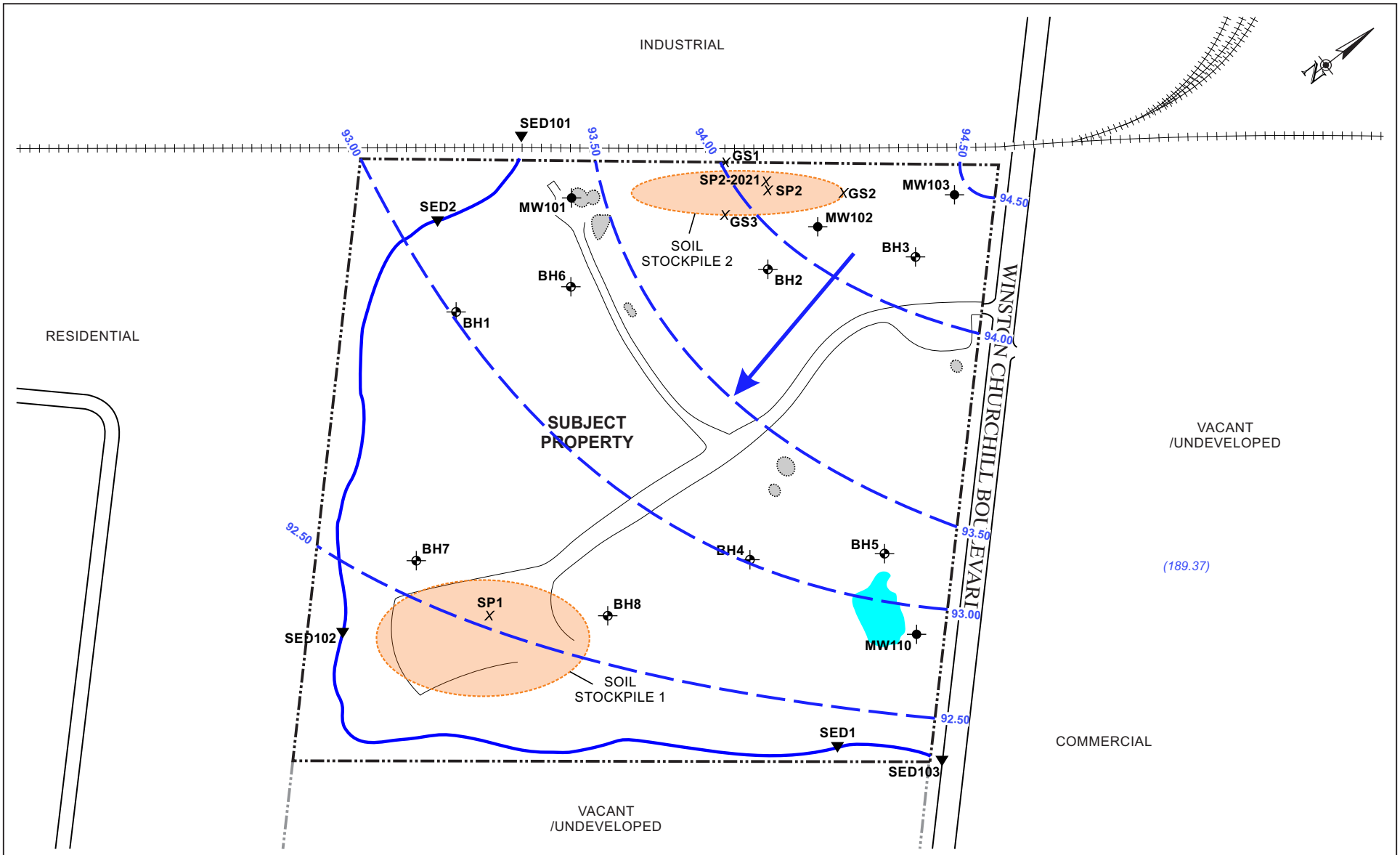
SITE PLAN

FIGURE 2

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021

258896-SITE PLAN-NOV21:SITE PLAN



SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	A.C.

LEGEND:

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- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK
- (100.00) 100.00 GROUND WATER ELEVATION (masl)
- GROUND WATER ELEVATION CONTOUR (masl)
- GROUND WATER FLOW DIRECTION
- (masl) METRE ABOVE SEA LEVEL

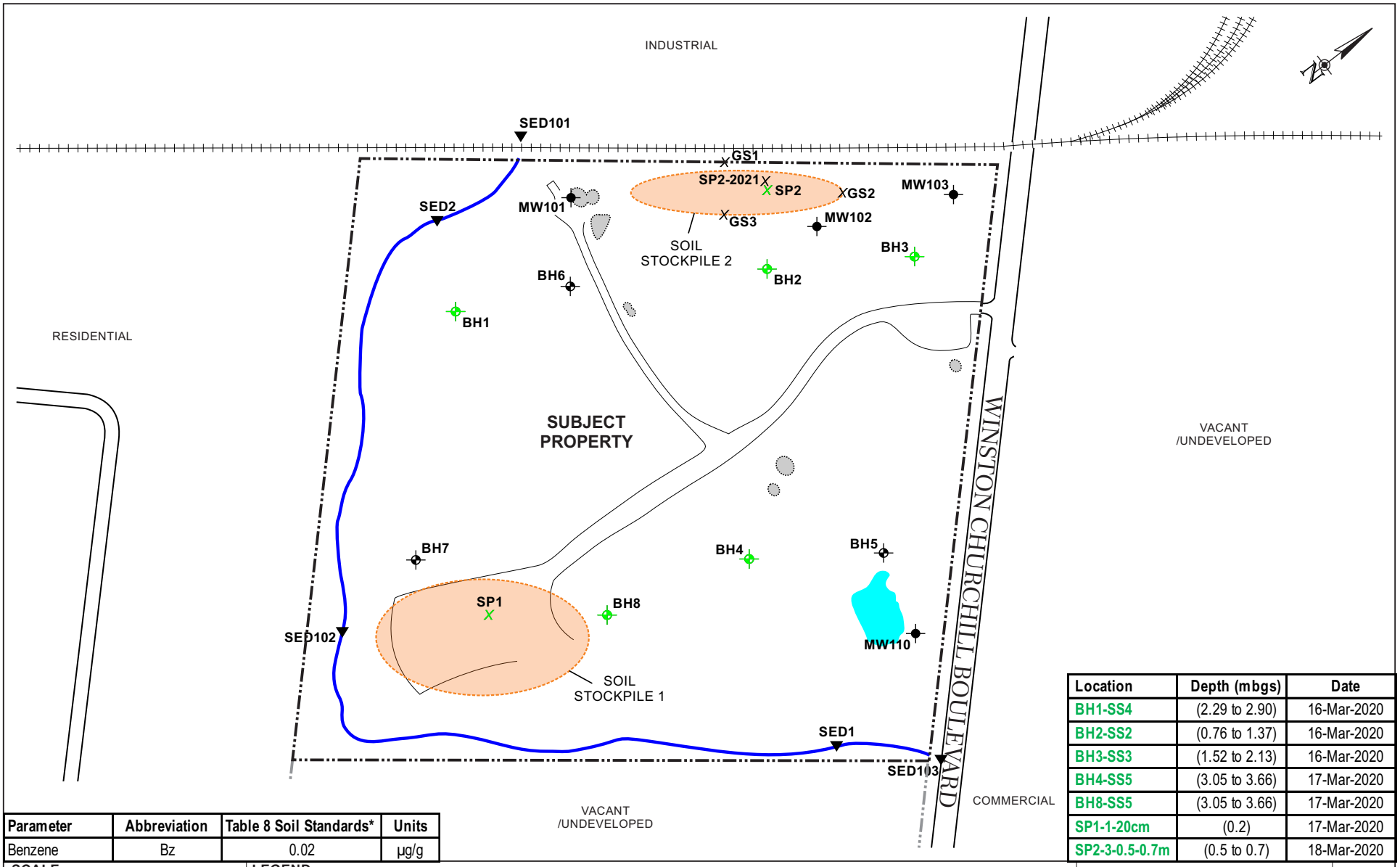
GROUNDWATER CONTOUR PLAN (MARCH 18, 2021)

FIGURE 3

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021

258896-SITE PLAN-NOV21:GWC



Location	Depth (mbgs)	Date
BH1-SS4	(2.29 to 2.90)	16-Mar-2020
BH2-SS2	(0.76 to 1.37)	16-Mar-2020
BH3-SS3	(1.52 to 2.13)	16-Mar-2020
BH4-SS5	(3.05 to 3.66)	17-Mar-2020
BH8-SS5	(3.05 to 3.66)	17-Mar-2020
SP1-1-20cm	(0.2)	17-Mar-2020
SP2-3-0.5-0.7m	(0.5 to 0.7)	18-Mar-2020

Parameter	Abbreviation	Table 8 Soil Standards*	Units
Benzene	Bz	0.02	µg/g

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

LOCATION WHERE SAMPLE IS WITHIN TABLE 8 STANDARDS FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE AND MEDIUM/FINE TEXTURED SOILS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN

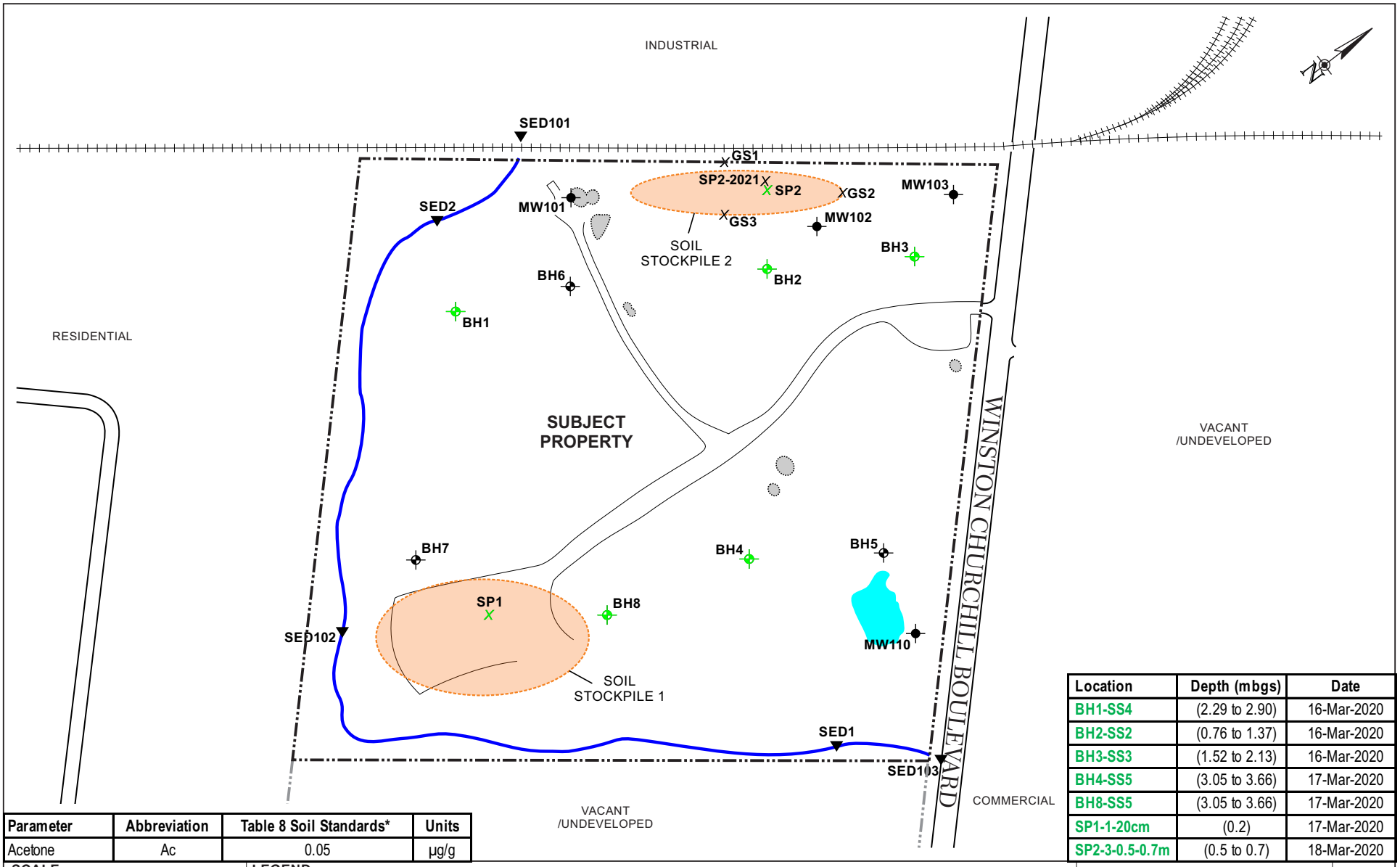
~FIELD DUPLICATE
mbgs - METRES BELOW GROUND SURFACE

SOIL ANALYTICAL RESULTS – PHCs AND BTEX

FIGURE 4A

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



Location	Depth (mbgs)	Date
BH1-SS4	(2.29 to 2.90)	16-Mar-2020
BH2-SS2	(0.76 to 1.37)	16-Mar-2020
BH3-SS3	(1.52 to 2.13)	16-Mar-2020
BH4-SS5	(3.05 to 3.66)	17-Mar-2020
BH8-SS5	(3.05 to 3.66)	17-Mar-2020
SP1-1-20cm	(0.2)	17-Mar-2020
SP2-3-0.5-0.7m	(0.5 to 0.7)	18-Mar-2020

Parameter	Abbreviation	Table 8 Soil Standards*	Units
Acetone	Ac	0.05	µg/g

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

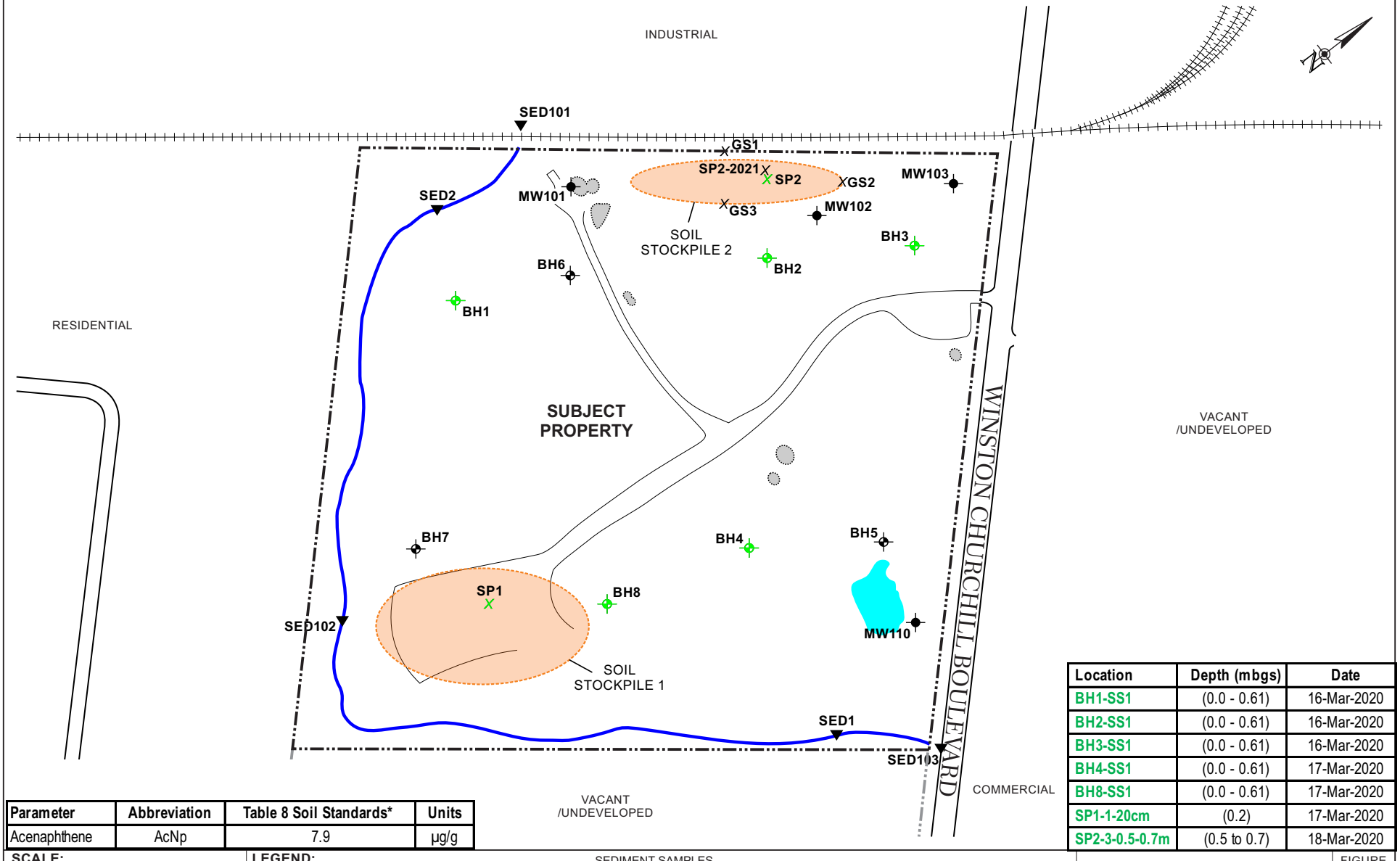
LOCATION WHERE SAMPLE IS WITHIN TABLE 8 STANDARDS FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE AND MEDIUM/FINE TEXTURED SOILS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN

SOIL ANALYTICAL RESULTS – VOCs

FIGURE 4B

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



Location	Depth (mbgs)	Date
BH1-SS1	(0.0 - 0.61)	16-Mar-2020
BH2-SS1	(0.0 - 0.61)	16-Mar-2020
BH3-SS1	(0.0 - 0.61)	16-Mar-2020
BH4-SS1	(0.0 - 0.61)	17-Mar-2020
BH8-SS1	(0.0 - 0.61)	17-Mar-2020
SP1-1-20cm	(0.2)	17-Mar-2020
SP2-3-0.5-0.7m	(0.5 to 0.7)	18-Mar-2020

Parameter	Abbreviation	Table 8 Soil Standards*	Units
Acenaphthene	AcNp	7.9	µg/g

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

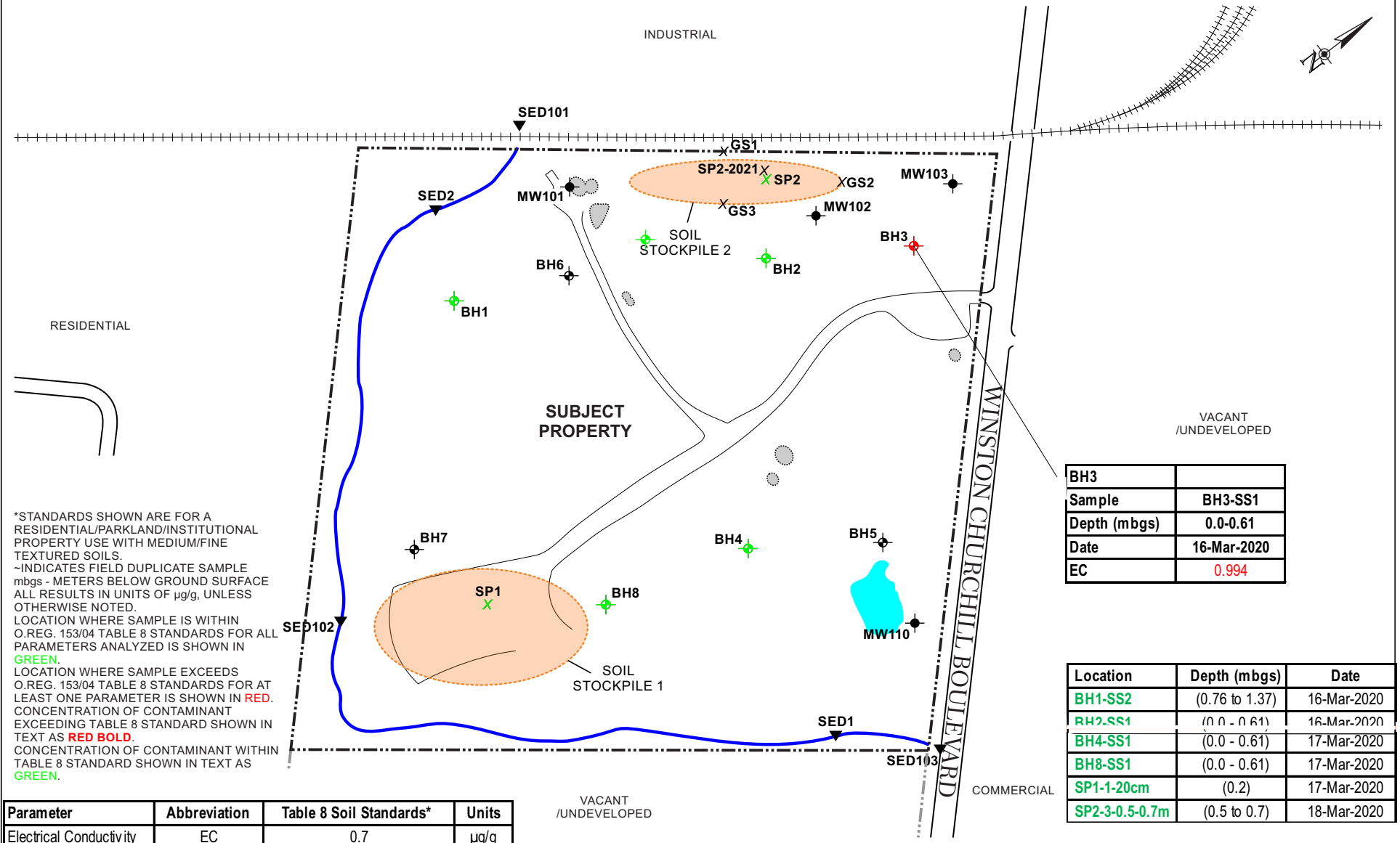
LOCATION WHERE SAMPLE IS WITHIN TABLE 8 STANDARDS FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE AND MEDIUM/FINE TEXTURED SOILS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN

SOIL ANALYTICAL RESULTS – PAHs

FIGURE 4C

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



*STANDARDS SHOWN ARE FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE WITH MEDIUM/FINE TEXTURED SOILS.
~INDICATES FIELD DUPLICATE SAMPLE
mbgs - METERS BELOW GROUND SURFACE
ALL RESULTS IN UNITS OF µg/g, UNLESS OTHERWISE NOTED.
LOCATION WHERE SAMPLE IS WITHIN O.REG. 153/04 TABLE 8 STANDARDS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN.
LOCATION WHERE SAMPLE EXCEEDS O.REG. 153/04 TABLE 8 STANDARDS FOR AT LEAST ONE PARAMETER IS SHOWN IN RED.
CONCENTRATION OF CONTAMINANT EXCEEDING TABLE 8 STANDARD SHOWN IN TEXT AS **RED BOLD**.
CONCENTRATION OF CONTAMINANT WITHIN TABLE 8 STANDARD SHOWN IN TEXT AS GREEN.

BH3	
Sample	BH3-SS1
Depth (mbgs)	0.0-0.61
Date	16-Mar-2020
EC	0.994

Location	Depth (mbgs)	Date
BH1-SS2	(0.76 to 1.37)	16-Mar-2020
BH2-SS1	(0.0 - 0.61)	16-Mar-2020
BH4-SS1	(0.0 - 0.61)	17-Mar-2020
BH8-SS1	(0.0 - 0.61)	17-Mar-2020
SP1-1-20cm	(0.2)	17-Mar-2020
SP2-3-0.5-0.7m	(0.5 to 0.7)	18-Mar-2020

Parameter	Abbreviation	Table 8 Soil Standards*	Units
Electrical Conductivity	EC	0.7	µg/g

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

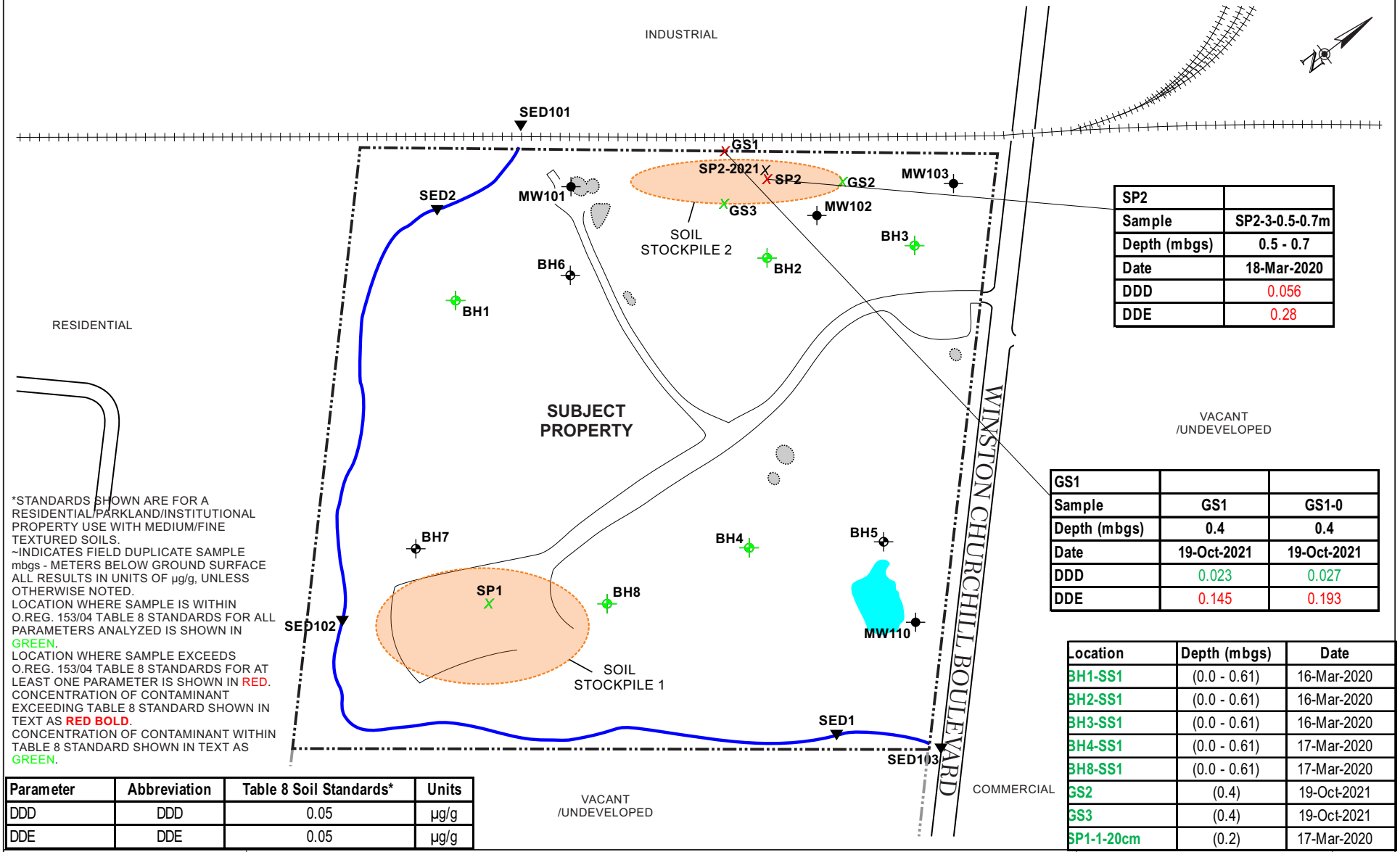
LEGEND:
- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

SOIL ANALYTICAL RESULTS – METALS (INCLUDING HYDRIDE-FORMING METALS)

FIGURE 4D

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



SP2	
Sample	SP2-3-0.5-0.7m
Depth (mbgs)	0.5 - 0.7
Date	18-Mar-2020
DDD	0.056
DDE	0.28

GS1		
Sample	GS1	GS1-0
Depth (mbgs)	0.4	0.4
Date	19-Oct-2021	19-Oct-2021
DDD	0.023	0.027
DDE	0.145	0.193

*STANDARDS SHOWN ARE FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE WITH MEDIUM/FINE TEXTURED SOILS.
~INDICATES FIELD DUPLICATE SAMPLE
mbgs - METERS BELOW GROUND SURFACE
ALL RESULTS IN UNITS OF µg/g, UNLESS OTHERWISE NOTED.
LOCATION WHERE SAMPLE IS WITHIN O.REG. 153/04 TABLE 8 STANDARDS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN.
LOCATION WHERE SAMPLE EXCEEDS O.REG. 153/04 TABLE 8 STANDARDS FOR AT LEAST ONE PARAMETER IS SHOWN IN RED.
CONCENTRATION OF CONTAMINANT EXCEEDING TABLE 8 STANDARD SHOWN IN TEXT AS **RED BOLD**.
CONCENTRATION OF CONTAMINANT WITHIN TABLE 8 STANDARD SHOWN IN TEXT AS GREEN.

Parameter	Abbreviation	Table 8 Soil Standards*	Units
DDD	DDD	0.05	µg/g
DDE	DDE	0.05	µg/g

Location	Depth (mbgs)	Date
BH1-SS1	(0.0 - 0.61)	16-Mar-2020
BH2-SS1	(0.0 - 0.61)	16-Mar-2020
BH3-SS1	(0.0 - 0.61)	16-Mar-2020
BH4-SS1	(0.0 - 0.61)	17-Mar-2020
BH8-SS1	(0.0 - 0.61)	17-Mar-2020
GS2	(0.4)	19-Oct-2021
GS3	(0.4)	19-Oct-2021
SP1-1-20cm	(0.2)	17-Mar-2020

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

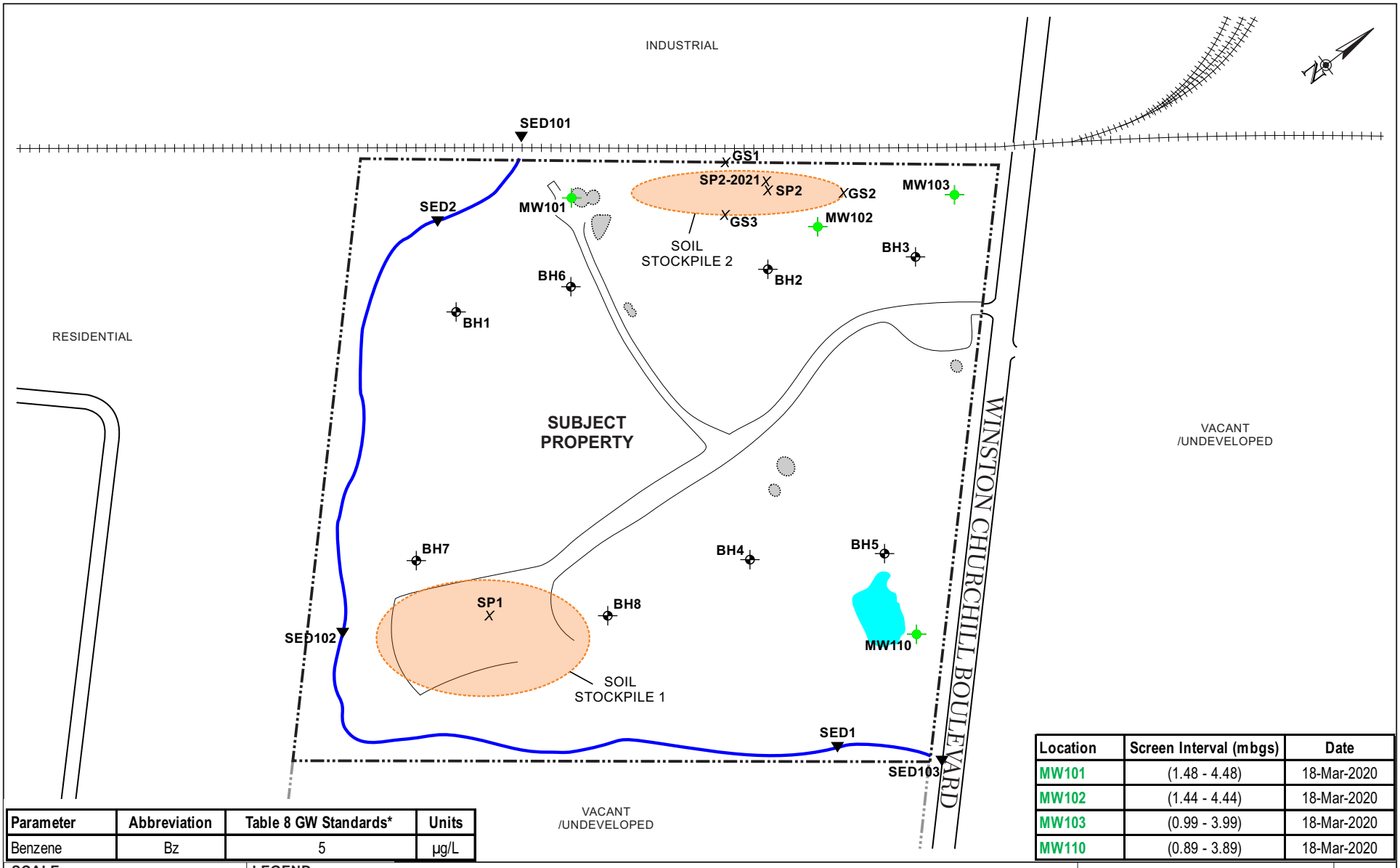
LEGEND:
- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

SOIL ANALYTICAL RESULTS – OCs

FIGURE 4E

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



Location	Screen Interval (mbgs)	Date
MW101	(1.48 - 4.48)	18-Mar-2020
MW102	(1.44 - 4.44)	18-Mar-2020
MW103	(0.99 - 3.99)	18-Mar-2020
MW110	(0.89 - 3.89)	18-Mar-2020

Parameter	Abbreviation	Table 8 GW Standards*	Units
Benzene	Bz	5	µg/L

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

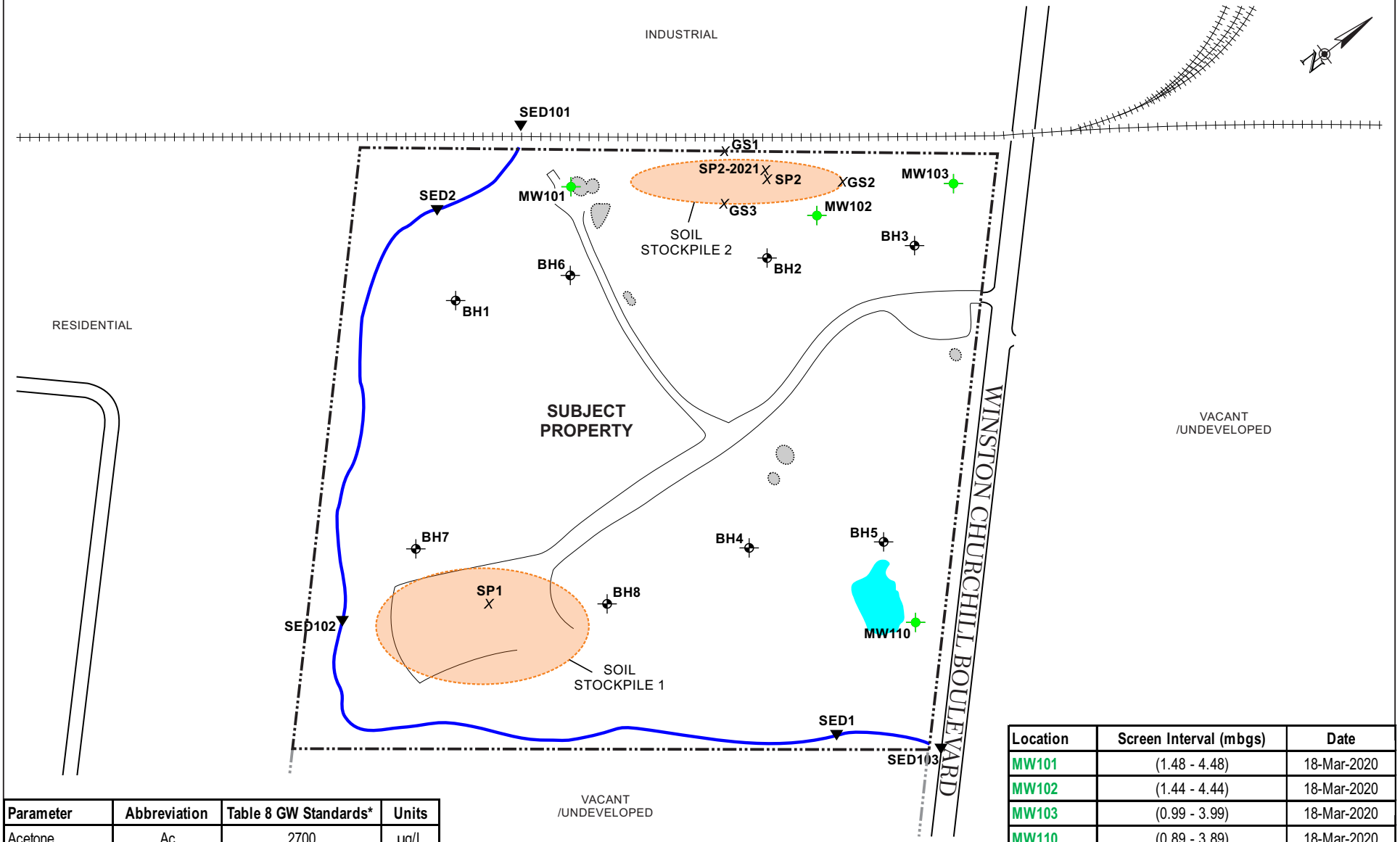
LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

GROUND WATER ANALYTICAL RESULTS – PHCs AND BTEX

FIGURE 5A

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



Location	Screen Interval (mbgs)	Date
MW101	(1.48 - 4.48)	18-Mar-2020
MW102	(1.44 - 4.44)	18-Mar-2020
MW103	(0.99 - 3.99)	18-Mar-2020
MW110	(0.89 - 3.89)	18-Mar-2020

Parameter	Abbreviation	Table 8 GW Standards*	Units
Acetone	Ac	2700	µg/L

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

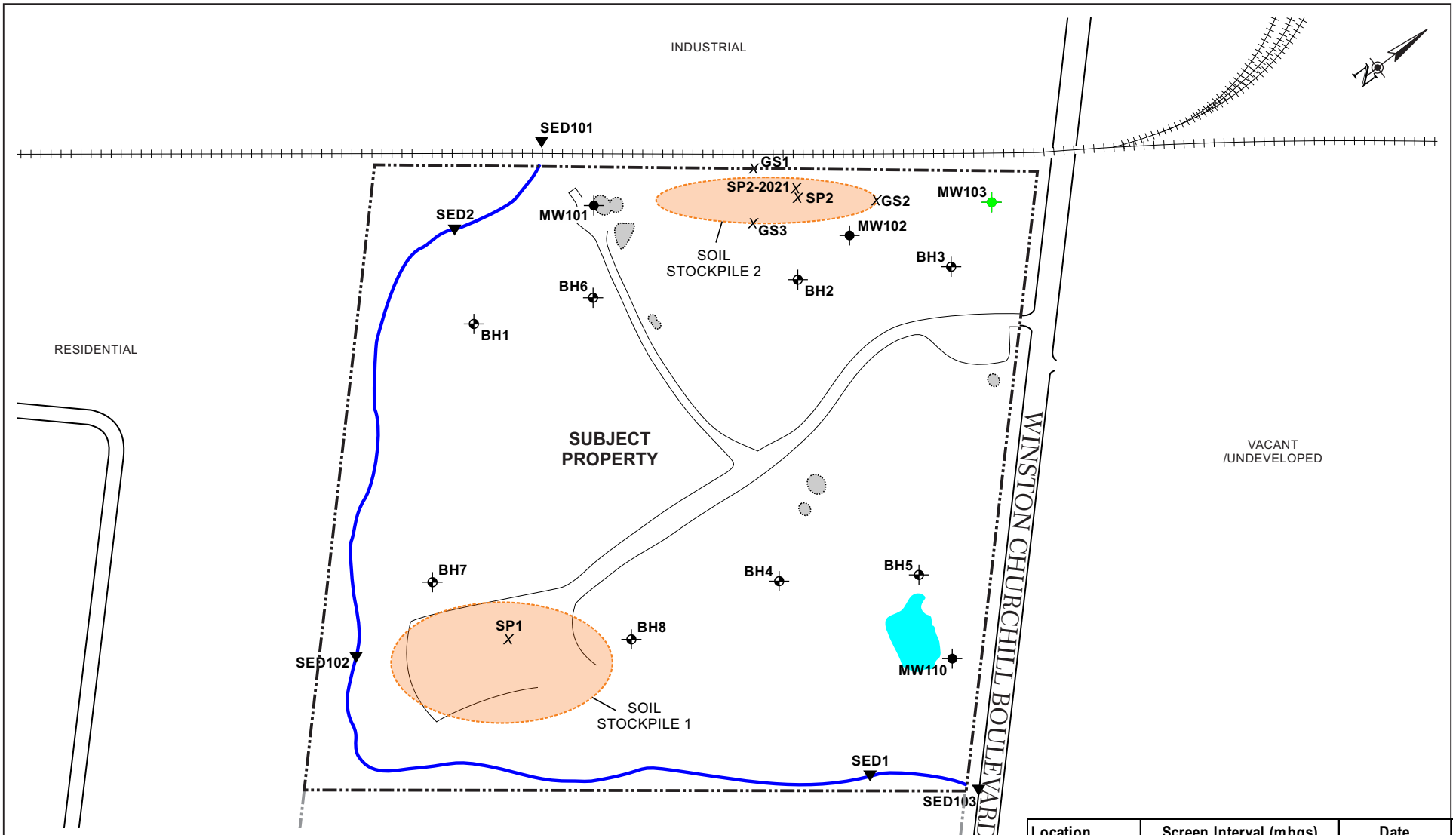
GROUND WATER ANALYTICAL RESULTS – VOCs

FIGURE 5B

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021

258896-PH2 RESULTS-NOV21: GW VOC



Parameter	Abbreviation	Table 8 GW Standards*	Units
Antimony	An	6	µg/L

Location	Screen Interval (mbgs)	Date
MW 103	(0.99 - 3.99)	19-Oct-2021
MW 1030	(0.99 - 3.99)	19-Oct-2021

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

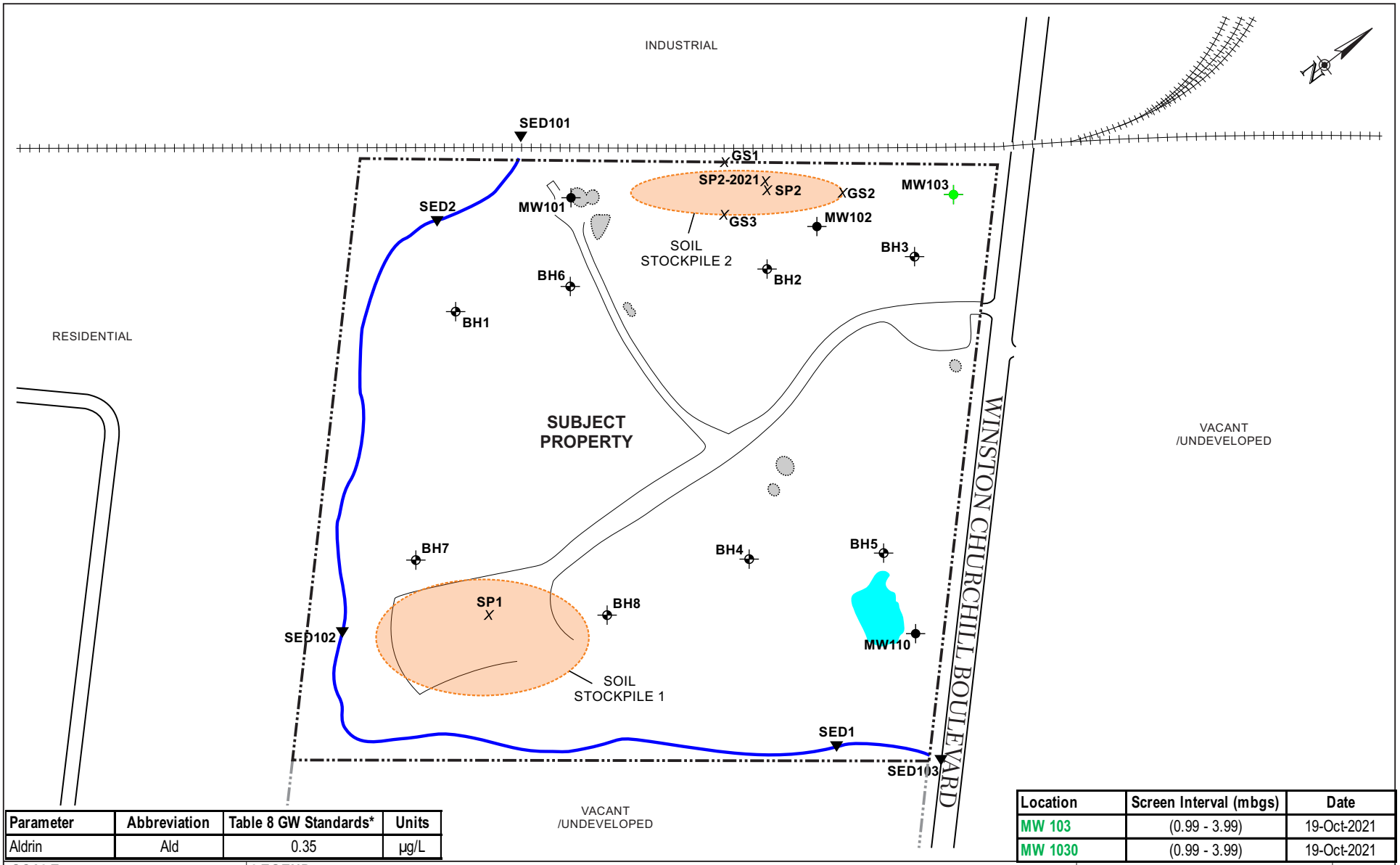
LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

GROUND WATER ANALYTICAL RESULTS METALS (INCLUDING HYDRIDE-FORMING METALS)

FIGURE 5C

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



Parameter	Abbreviation	Table 8 GW Standards*	Units
Aldrin	Ald	0.35	µg/L

Location	Screen Interval (mbgs)	Date
MW 103	(0.99 - 3.99)	19-Oct-2021
MW 1030	(0.99 - 3.99)	19-Oct-2021

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

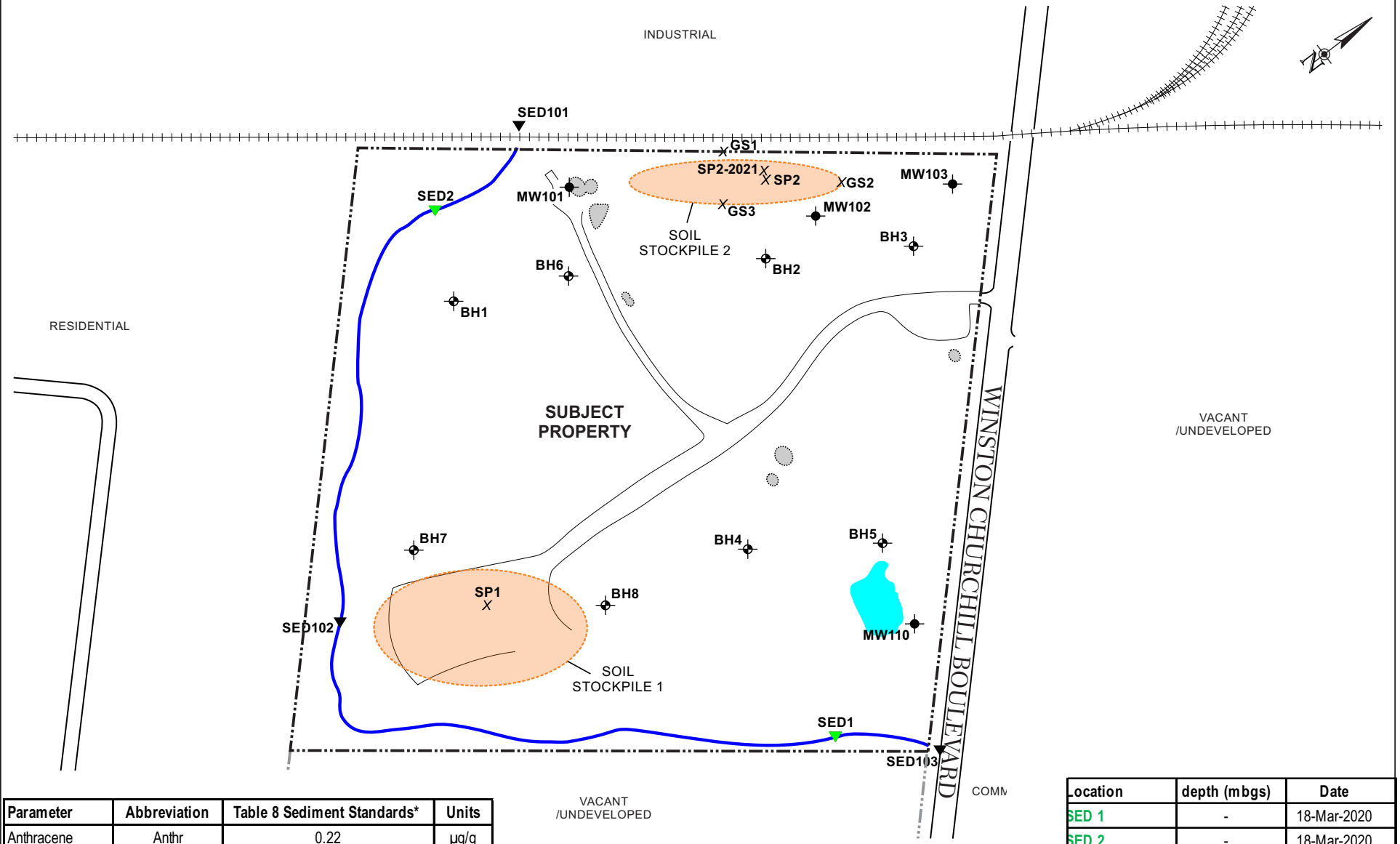
LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

GROUND WATER ANALYTICAL RESULTS - OCs

FIGURE 5D

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



Parameter	Abbreviation	Table 8 Sediment Standards*	Units
Anthracene	Anthr	0.22	µg/g

Location	depth (mbgs)	Date
SED 1	-	18-Mar-2020
SED 2	-	18-Mar-2020

SCALE:
0 50 100m

SOURCE:
BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:
- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

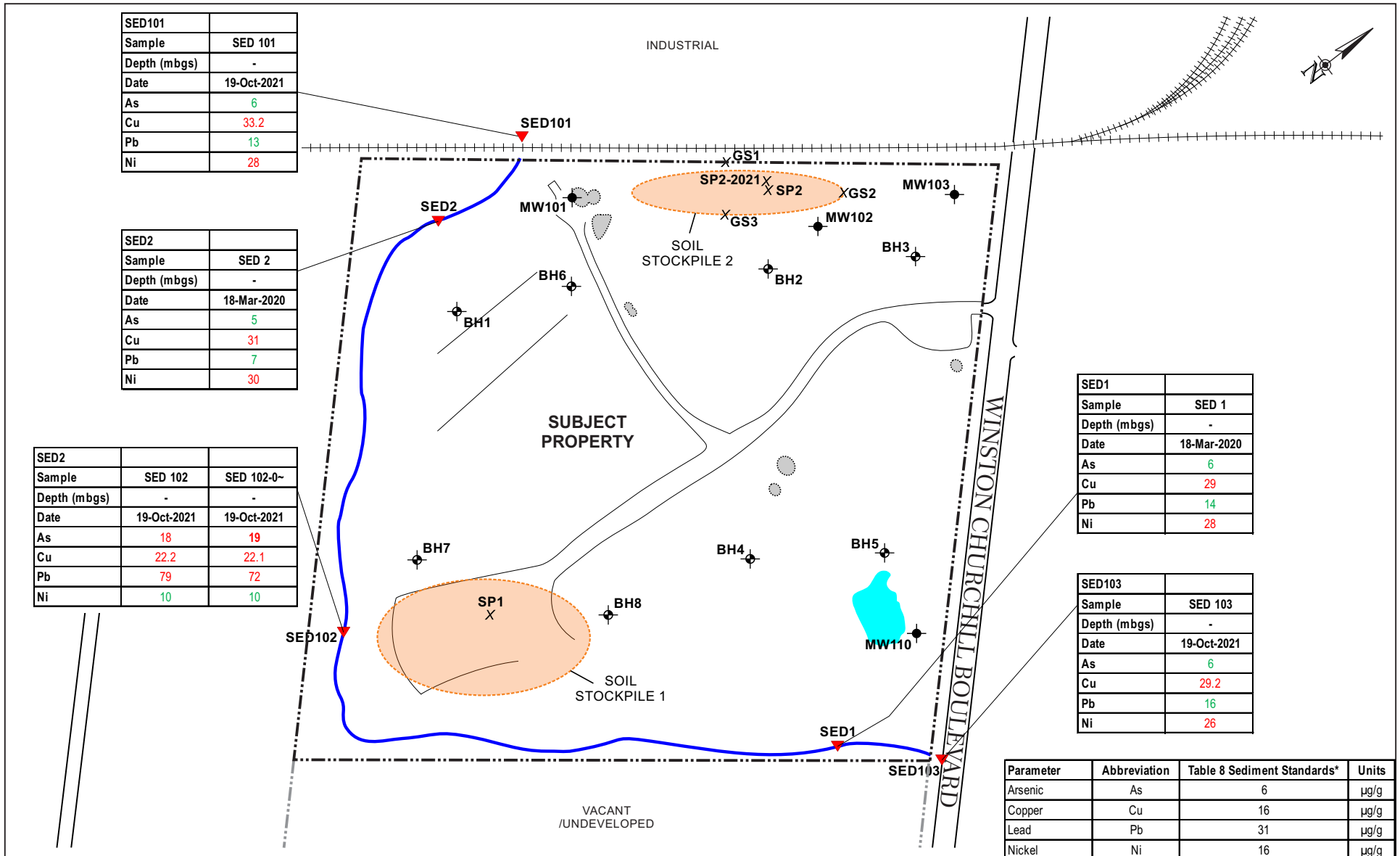
LOCATION WHERE SAMPLE IS WITHIN TABLE 8 STANDARDS FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE AND MEDIUM/FINE TEXTURED SOILS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN

SEDIMENT ANALYTICAL RESULTS – PAHs

FIGURE 6A

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



SED101	
Sample	SED 101
Depth (mbgs)	-
Date	19-Oct-2021
As	6
Cu	33.2
Pb	13
Ni	28

SED2	
Sample	SED 2
Depth (mbgs)	-
Date	18-Mar-2020
As	5
Cu	31
Pb	7
Ni	30

SED2		
Sample	SED 102	SED 102-0~
Depth (mbgs)	-	-
Date	19-Oct-2021	19-Oct-2021
As	18	19
Cu	22.2	22.1
Pb	79	72
Ni	10	10

SED1	
Sample	SED 1
Depth (mbgs)	-
Date	18-Mar-2020
As	6
Cu	29
Pb	14
Ni	28

SED103	
Sample	SED 103
Depth (mbgs)	-
Date	19-Oct-2021
As	6
Cu	29.2
Pb	16
Ni	26

Parameter	Abbreviation	Table 8 Sediment Standards*	Units
Arsenic	As	6	µg/g
Copper	Cu	16	µg/g
Lead	Pb	31	µg/g
Nickel	Ni	16	µg/g

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

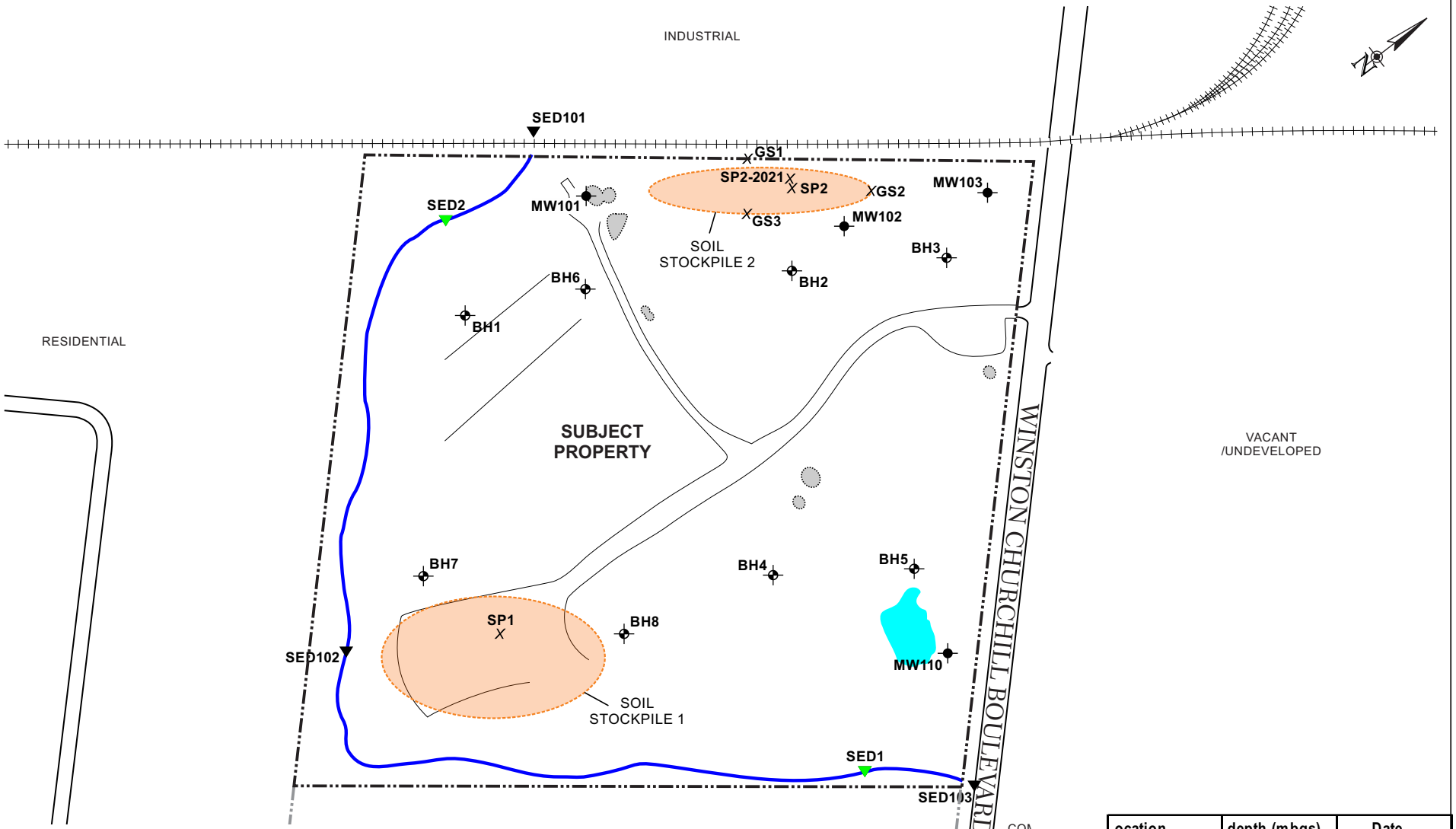
LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

SEDIMENT ANALYTICAL RESULTS – METALS (INCLUDING HYDRIDE-FORMING METALS)

FIGURE 6B

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



Parameter	Abbreviation	Table 8 Sediment Standards*	Units
Aldrin	Ald	0.002	µg/g

Location	depth (mbgs)	Date
SED 1	-	18-Mar-2020
SED 2	-	18-Mar-2020

SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

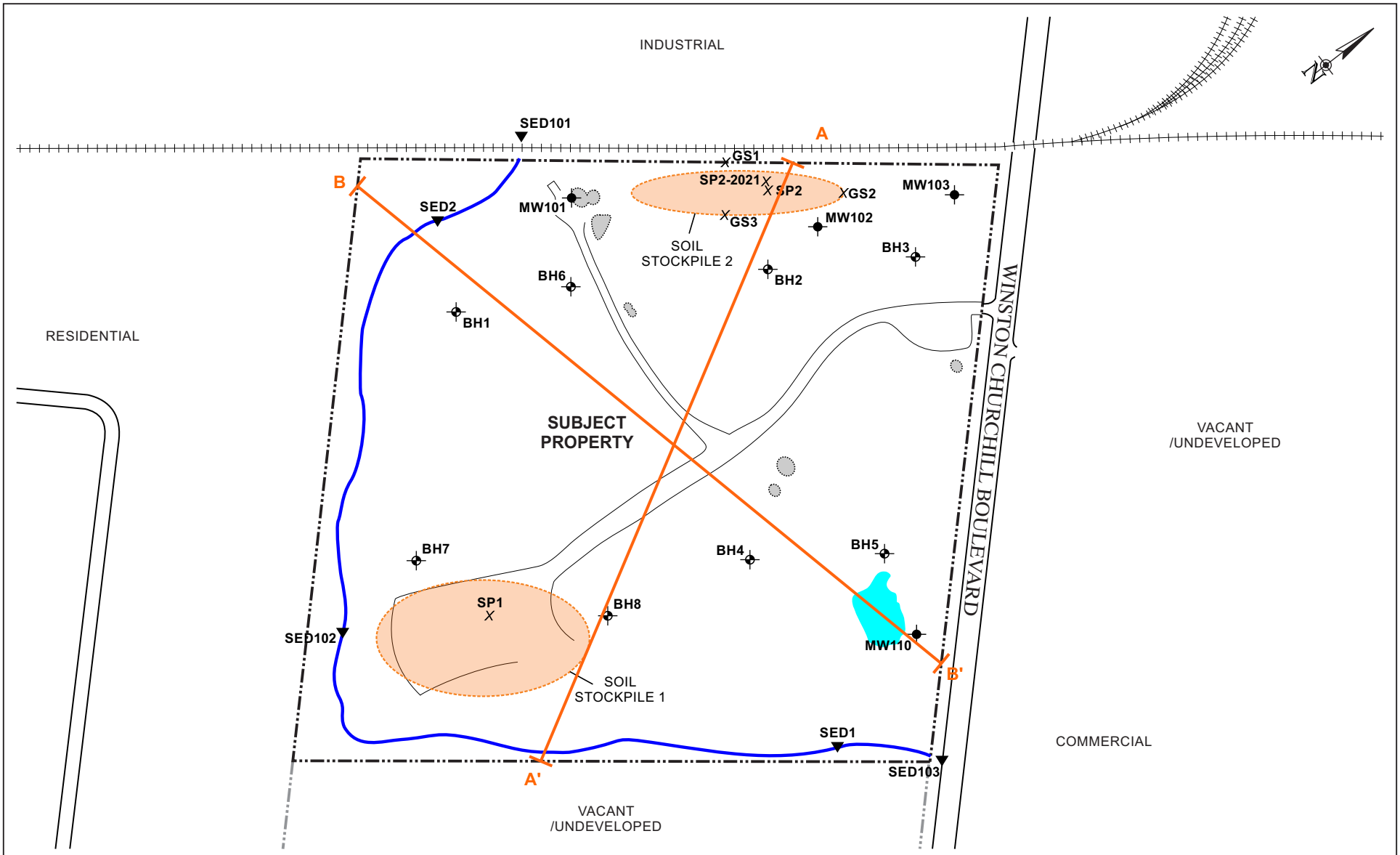
SEDIMENT ANALYTICAL RESULTS – OCs

FIGURE 6C

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021

258896-PH2 RESULTS-NOV21: SD SD



SCALE: 0 50 100m

SOURCE: BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	A.C.

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES SED1 SERIES (EXP, 2020) SED101 SERIES (EXP, 2021)
- STOCKPILE SAMPLES SP2 (EXP, 2020) GS SERIES (EXP, 2021)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK
- CROSS SECTION LOCATION

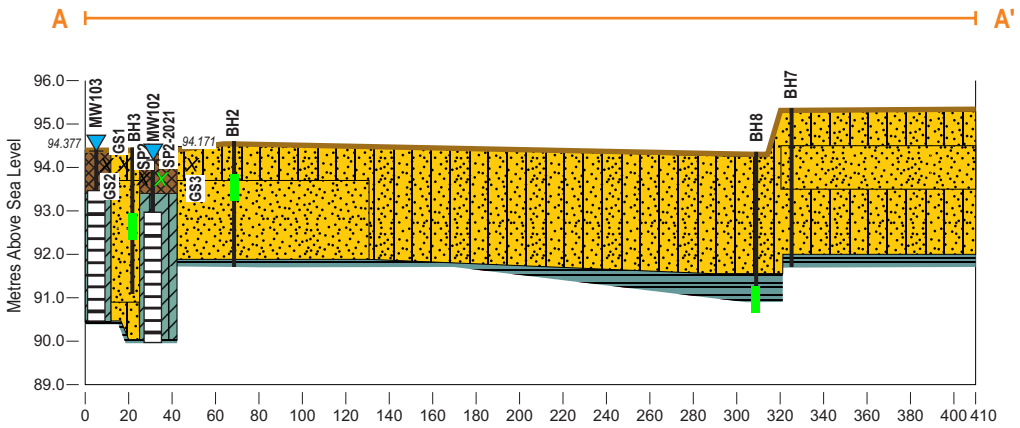
CROSS SECTION PLAN

FIGURE 7

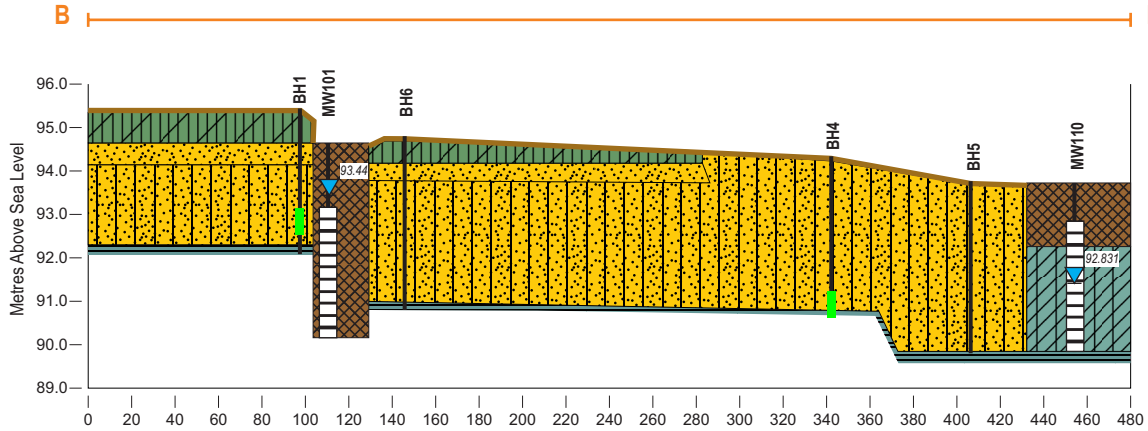
772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021

258896-SITE PLAN-NOV21:SEC



Location	Depth (mbgs)	Date
BH1-SS4	(2.29 to 2.90)	16-Mar-2020
BH2-SS2	(0.76 to 1.37)	16-Mar-2020
BH3-SS3	(1.52 to 2.13)	16-Mar-2020
BH4-SS5	(3.05 to 3.66)	17-Mar-2020
BH8-SS5	(3.05 to 3.66)	17-Mar-2020
SP1-1-20cm	(0.2)	17-Mar-2020
SP2-3-0.5-0.7m	(0.5 to 0.7)	18-Mar-2020



SCALE:
20 X VERTICAL EXAGGERATION

SOURCE:
BASED ON FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- TEST HOLE
- SCREEN INTERVAL
- GROUND WATER ELEVATION (MAR. 18. 2020)
- masl METRES ABOVE SEA LEVEL

- TOPSOIL
- FILL/DISTURBED SOIL
- SAND
- SILTY SAND/SANDY SILT /SANDY SILT TILL
- CLAYEY SILT
- CLAYEY SILT TILL/SHALE TILL
- SHALE

LOCATION WHERE SAMPLE IS WITHIN TABLE 8 STANDARDS FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE AND MEDIUM/FINE TEXTURED SOILS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN

~FIELD DUPLICATE
mbgs - METRES BELOW GROUND SURFACE

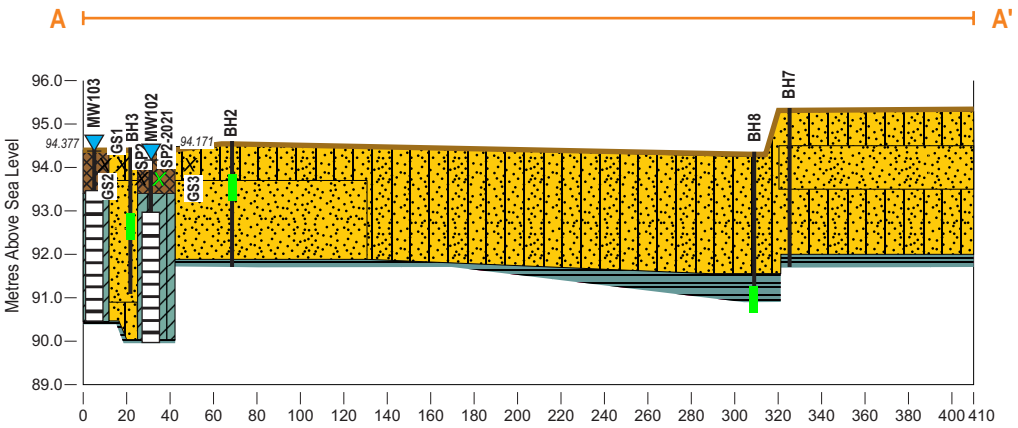
Parameter	Abbreviation	Table 8 Soil Standards*	Units
Benzene	Bz	0.02	µg/g

CROSS SECTIONS A-A' AND B-B' SOIL ANALYTICAL RESULTS – PHCs AND BTEX

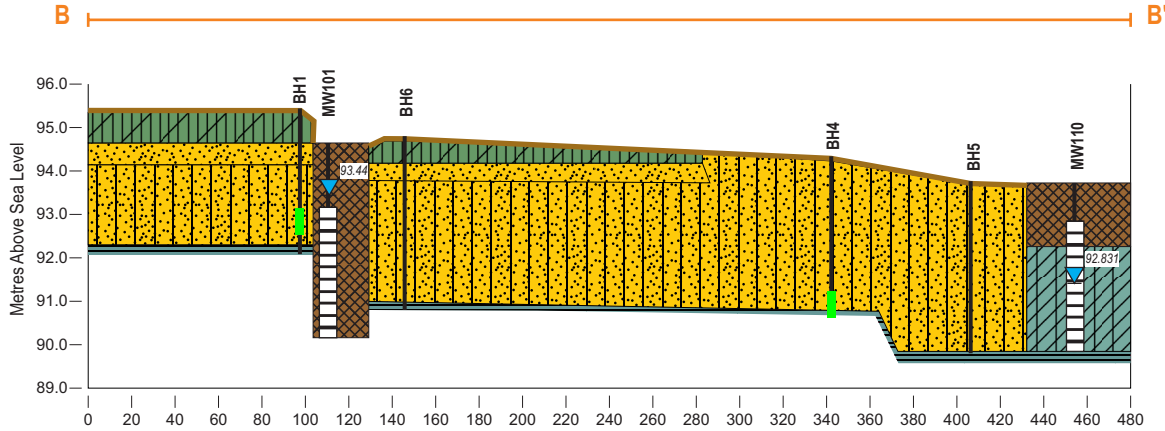
FIGURE 7A

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



Location	Depth (mbgs)	Date
BH1-SS4	(2.29 to 2.90)	16-Mar-2020
BH2-SS2	(0.76 to 1.37)	16-Mar-2020
BH3-SS3	(1.52 to 2.13)	16-Mar-2020
BH4-SS5	(3.05 to 3.66)	17-Mar-2020
BH8-SS5	(3.05 to 3.66)	17-Mar-2020
SP1-1-20cm	(0.2)	17-Mar-2020
SP2-3-0.5-0.7m	(0.5 to 0.7)	18-Mar-2020



Parameter	Abbreviation	Table 8 Soil Standards*	Units
Acetone	Ac	0.05	µg/g

SCALE:
20 X VERTICAL EXAGGERATION

SOURCE:
BASED ON FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:
- TEST HOLE
- SCREEN INTERVAL
- GROUND WATER ELEVATION (MAR. 18. 2020)
- masl METRES ABOVE SEA LEVEL

- TOPSOIL
- FILL/DISTURBED SOIL
- SAND
- SILTY SAND/SANDY SILT /SANDY SILT TILL
- CLAYEY SILT
- CLAYEY SILT TILL/SHALE TILL
- SHALE

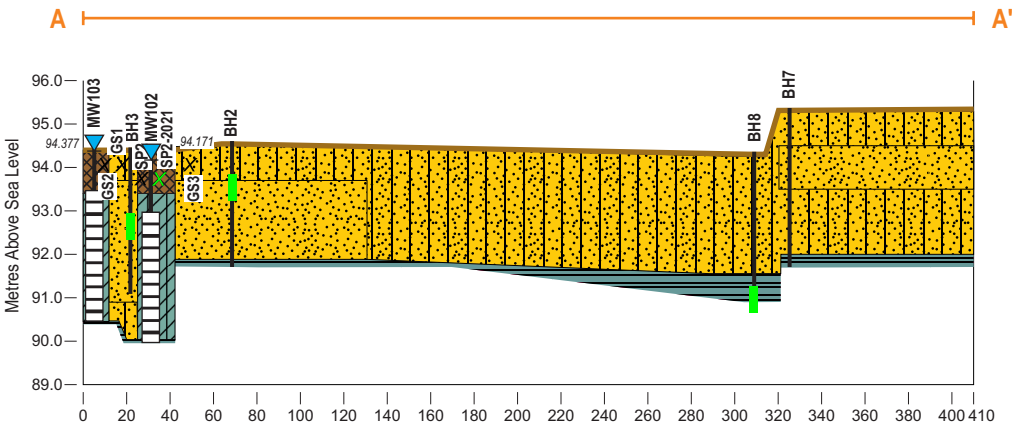
LOCATION WHERE SAMPLE IS WITHIN TABLE 8 STANDARDS FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE AND MEDIUM/FINE TEXTURED SOILS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN

CROSS SECTIONS A-A' AND B-B' SOIL ANALYTICAL RESULTS – VOCs

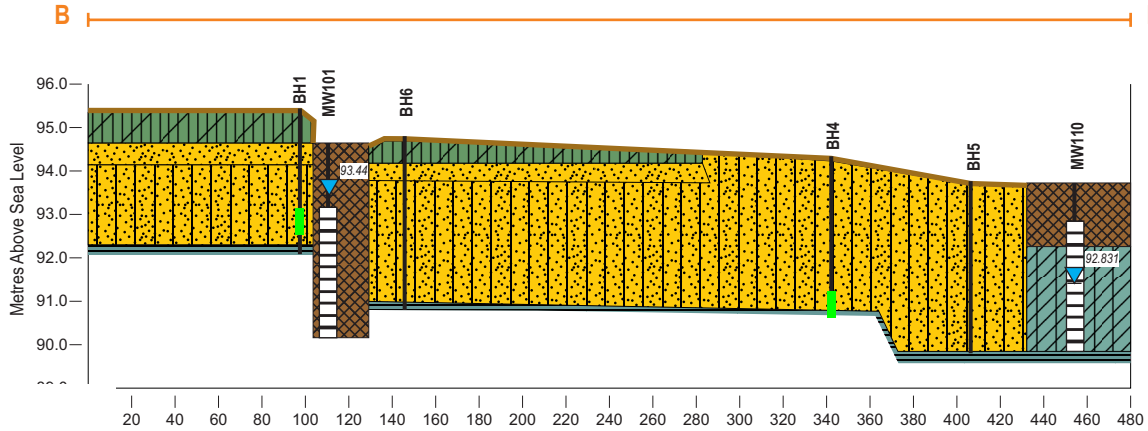
FIGURE 7B

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



Location	Depth (mbgs)	Date
BH1-SS1	(0.0 - 0.61)	16-Mar-2020
BH2-SS1	(0.0 - 0.61)	16-Mar-2020
BH3-SS1	(0.0 - 0.61)	16-Mar-2020
BH4-SS1	(0.0 - 0.61)	17-Mar-2020
BH8-SS1	(0.0 - 0.61)	17-Mar-2020
SP1-1-20cm	(0.2)	17-Mar-2020
SP2-3-0.5-0.7m	(0.5 to 0.7)	18-Mar-2020



Parameter	Abbreviation	Table 8 Soil Standards*	Units
Acenaphthene	AcNp	7.9	µg/g

SCALE:
20 X VERTICAL EXAGGERATION

SOURCE:
BASED ON FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- TEST HOLE
- SCREEN INTERVAL
- GROUND WATER ELEVATION (MAR. 18. 2020)
- masl METRES ABOVE SEA LEVEL
- TOPSOIL
- FILL/DISTURBED SOIL
- SAND
- SILTY SAND/SANDY SILT /SANDY SILT TILL
- CLAYEY SILT
- CLAYEY SILT TILL/SHALE TILL
- SHALE

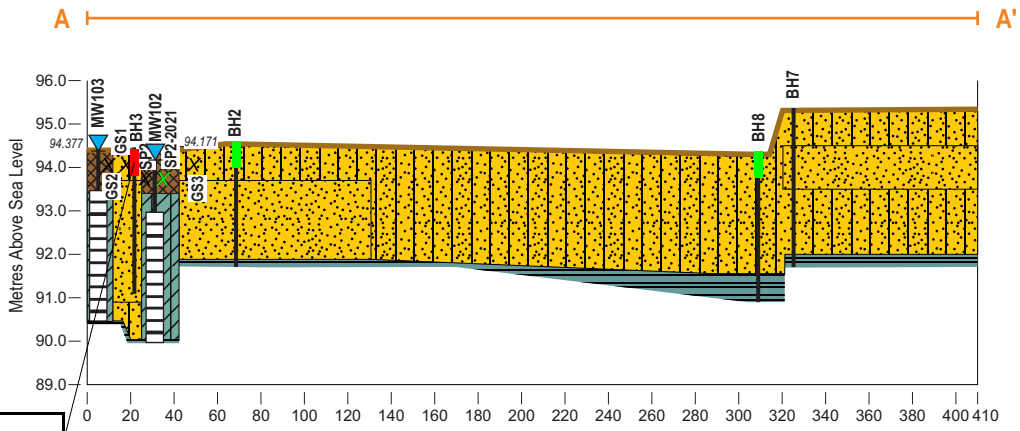
LOCATION WHERE SAMPLE IS WITHIN TABLE 8 STANDARDS FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE AND MEDIUM/FINE TEXTURED SOILS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN

CROSS SECTIONS A-A' AND B-B' SOIL ANALYTICAL RESULTS – PAHs

FIGURE 7C

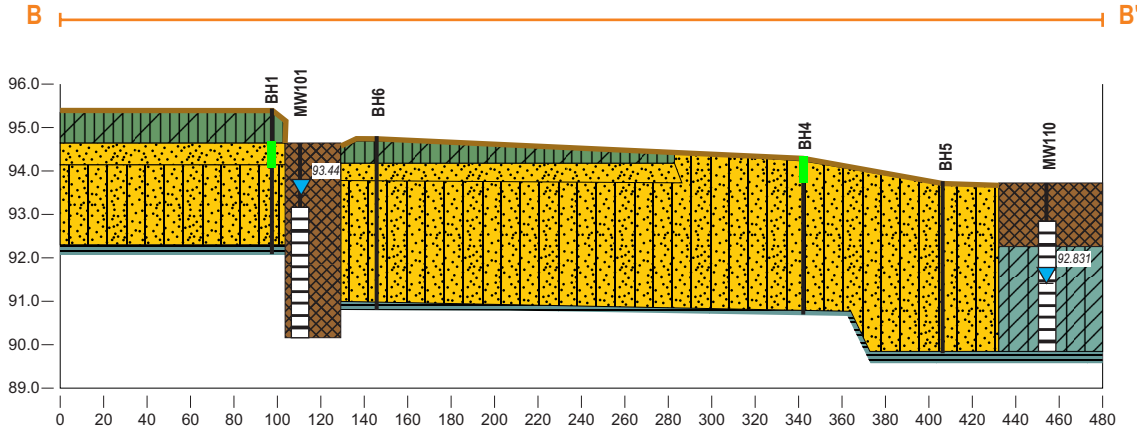
772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021



BH3	
Sample	BH3-SS1
Depth (mbgs)	0.0-0.61
Date	16-Mar-2020
EC	0.994

Location	Depth (mbgs)	Date
BH1-SS2	(0.76 to 1.37)	16-Mar-2020
BH2-SS1	(0.0 - 0.61)	16-Mar-2020
BH4-SS1	(0.0 - 0.61)	17-Mar-2020
BH8-SS1	(0.0 - 0.61)	17-Mar-2020
SP1-1-20cm	(0.2)	17-Mar-2020
SP2-3-0.5-0.7m	(0.5 to 0.7)	18-Mar-2020



*STANDARDS SHOWN ARE FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE WITH MEDIUM/FINE TEXTURED SOILS.
~INDICATES FIELD DUPLICATE SAMPLE
mbgs - METERS BELOW GROUND SURFACE
ALL RESULTS IN UNITS OF µg/g, UNLESS OTHERWISE NOTED.
LOCATION WHERE SAMPLE IS WITHIN O.REG. 153/04 TABLE 8 STANDARDS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN.
LOCATION WHERE SAMPLE EXCEEDS O.REG. 153/04 TABLE 8 STANDARDS FOR AT LEAST ONE PARAMETER IS SHOWN IN RED.
CONCENTRATION OF CONTAMINANT EXCEEDING TABLE 8 STANDARD SHOWN IN TEXT AS **RED BOLD**.
CONCENTRATION OF CONTAMINANT WITHIN TABLE 8 STANDARD SHOWN IN TEXT AS GREEN.

Parameter	Abbreviation	Table 8 Soil Standards*	Units
Electrical Conductivity	EC	0.7	µg/g

SCALE:
20 X VERTICAL EXAGGERATION

SOURCE:
BASED ON FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:
- TEST HOLE
- SCREEN INTERVAL
- GROUND WATER ELEVATION (MAR. 18. 2020)
- masl METRES ABOVE SEA LEVEL
- TOPSOIL
- FILL/DISTURBED SOIL
- SAND
- SILTY SAND/SANDY SILT /SANDY SILT TILL
- CLAYEY SILT
- CLAYEY SILT TILL/SHALE TILL
- SHALE

CROSS SECTIONS
A-A' AND B-B'
SOIL ANALYTICAL RESULTS – METALS (INCLUDING HYDRIDE-FORMING METALS)

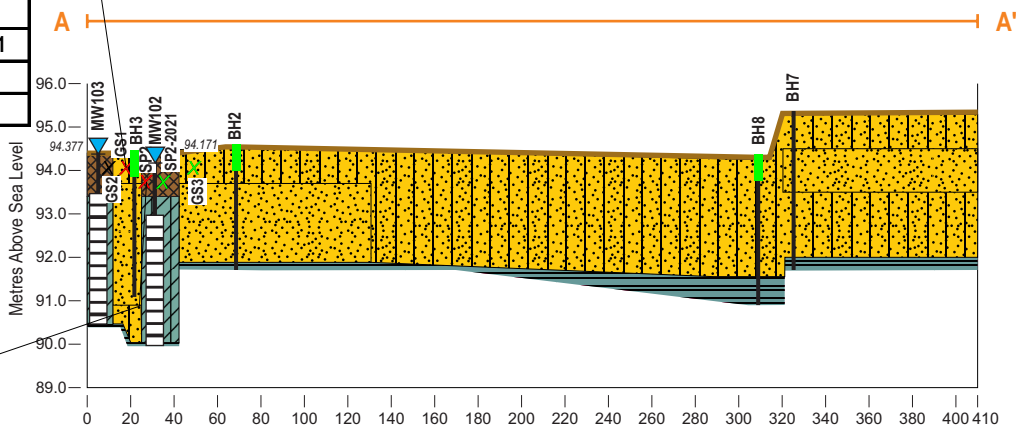
FIGURE
7D

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021

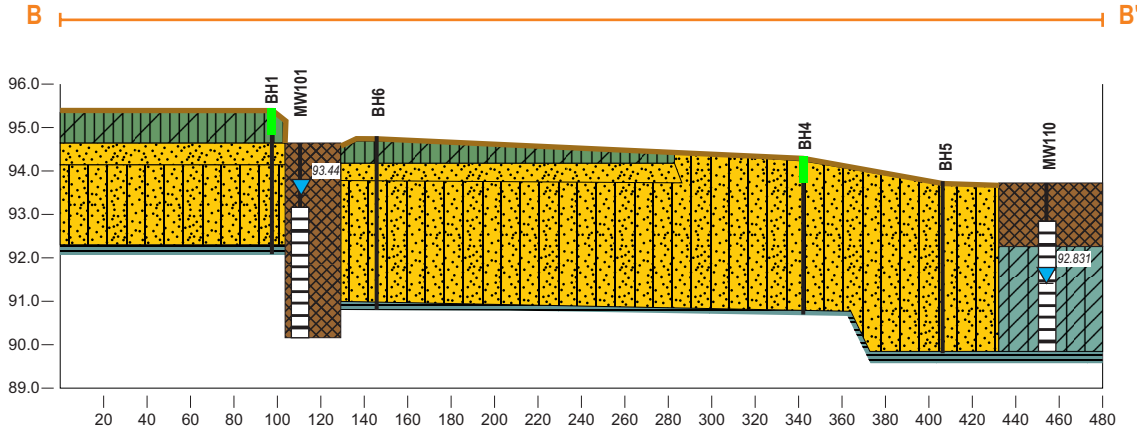
GS1		
Sample	GS1	GS1-0
Depth (mbgs)	0.4	0.4
Date	19-Oct-2021	19-Oct-2021
DDD	0.023	0.027
DDE	0.145	0.193

SP2	
Sample	SP2-3-0.5-0.7m
Depth (mbgs)	0.5 - 0.7
Date	18-Mar-2020
DDD	0.056
DDE	0.28



Location	Depth (mbgs)	Date
BH1-SS1	(0.0 - 0.61)	16-Mar-2020
BH2-SS1	(0.0 - 0.61)	16-Mar-2020
BH3-SS1	(0.0 - 0.61)	16-Mar-2020
BH4-SS1	(0.0 - 0.61)	17-Mar-2020
BH8-SS1	(0.0 - 0.61)	17-Mar-2020
GS2	(0.4)	19-Oct-2021
GS3	(0.4)	19-Oct-2021
SP1-1-20cm	(0.2)	17-Mar-2020

*STANDARDS SHOWN ARE FOR A RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY USE WITH MEDIUM/FINE TEXTURED SOILS.
~INDICATES FIELD DUPLICATE SAMPLE
mbgs - METERS BELOW GROUND SURFACE
ALL RESULTS IN UNITS OF µg/g, UNLESS OTHERWISE NOTED.
LOCATION WHERE SAMPLE IS WITHIN O.REG. 153/04 TABLE 8 STANDARDS FOR ALL PARAMETERS ANALYZED IS SHOWN IN GREEN.
LOCATION WHERE SAMPLE EXCEEDS O.REG. 153/04 TABLE 8 STANDARDS FOR AT LEAST ONE PARAMETER IS SHOWN IN RED.
CONCENTRATION OF CONTAMINANT EXCEEDING TABLE 8 STANDARD SHOWN IN TEXT AS **RED BOLD**.
CONCENTRATION OF CONTAMINANT WITHIN TABLE 8 STANDARD SHOWN IN TEXT AS GREEN.



SCALE:
20 X VERTICAL EXAGGERATION

SOURCE:
BASED ON FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:
- TEST HOLE
- SCREEN INTERVAL
- GROUND WATER ELEVATION (MAR. 18. 2020)
- masl METRES ABOVE SEA LEVEL
- TOPSOIL
- FILL/DISTURBED SOIL
- SAND
- SILTY SAND/SANDY SILT /SANDY SILT TILL
- CLAYEY SILT
- CLAYEY SILT TILL/SHALE TILL
- SHALE

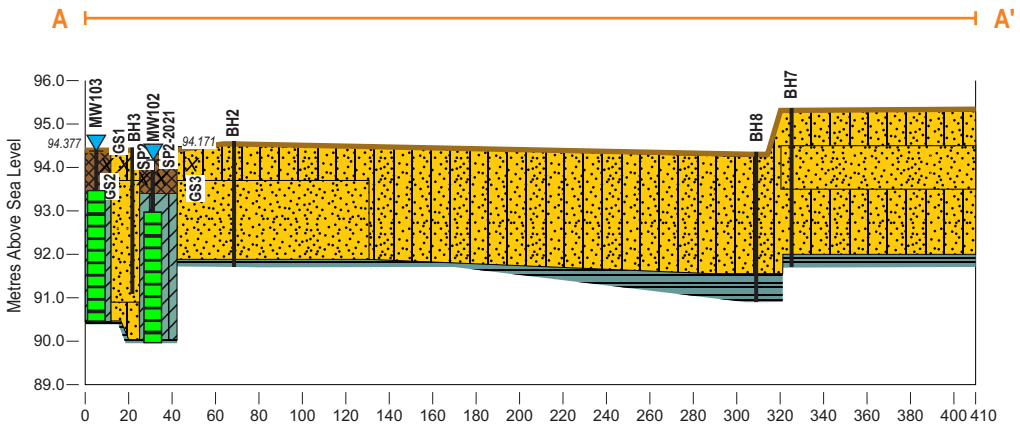
Parameter	Abbreviation	Table 8 Soil Standards*	Units
DDD	DDD	0.05	µg/g
DDE	DDE	0.05	µg/g

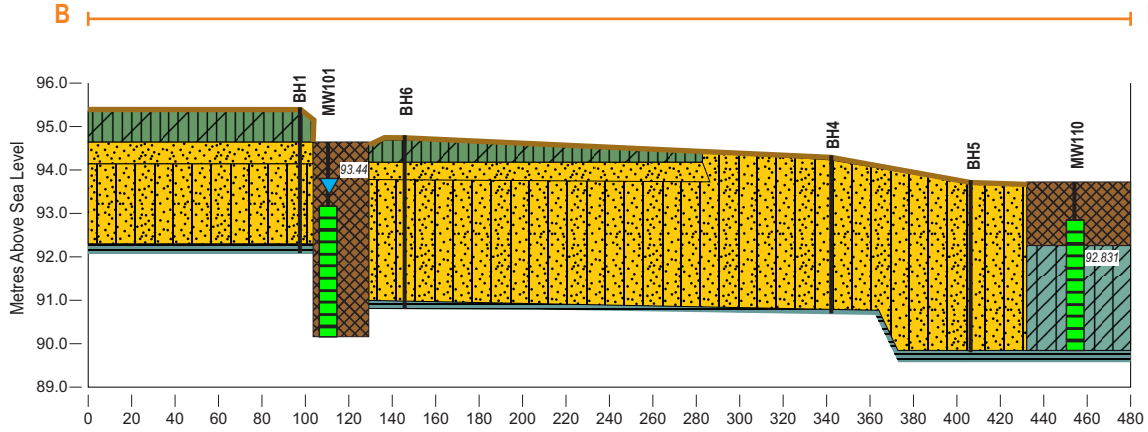
CROSS SECTIONS
A-A' AND B-B'
SOIL ANALYTICAL RESULTS
– OCs

FIGURE
7E

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021





SCALE:
20 X VERTICAL EXAGGERATION

SOURCE:
BASED ON FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- TEST HOLE
- SCREEN INTERVAL
- GROUND WATER ELEVATION (MAR. 18. 2020)
- masl METRES ABOVE SEA LEVEL

- TOPSOIL
- FILL/DISTURBED SOIL
- SAND
- SILTY SAND/SANDY SILT /SANDY SILT TILL
- CLAYEY SILT
- CLAYEY SILT TILL/SHALE TILL
- SHALE

LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

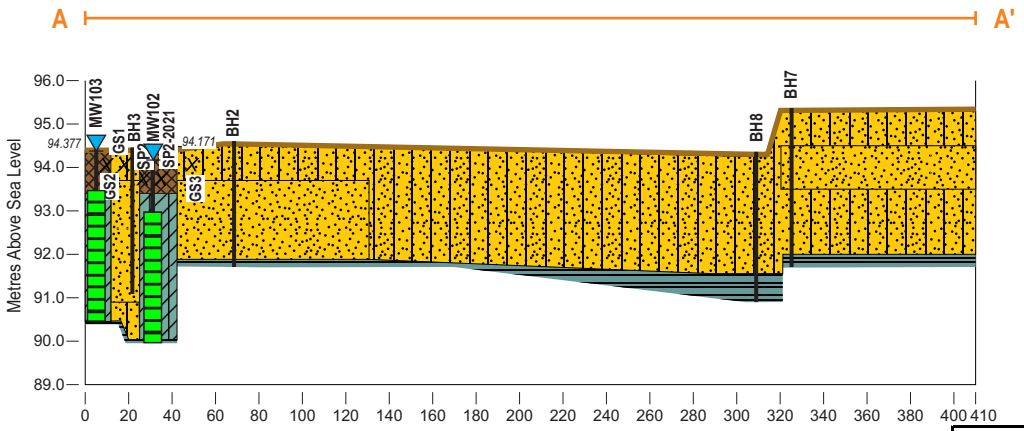
CROSS SECTIONS A-A' AND B-B' GROUND WATER ANALYTICAL RESULTS – PHCs AND BTEX

FIGURE 8A

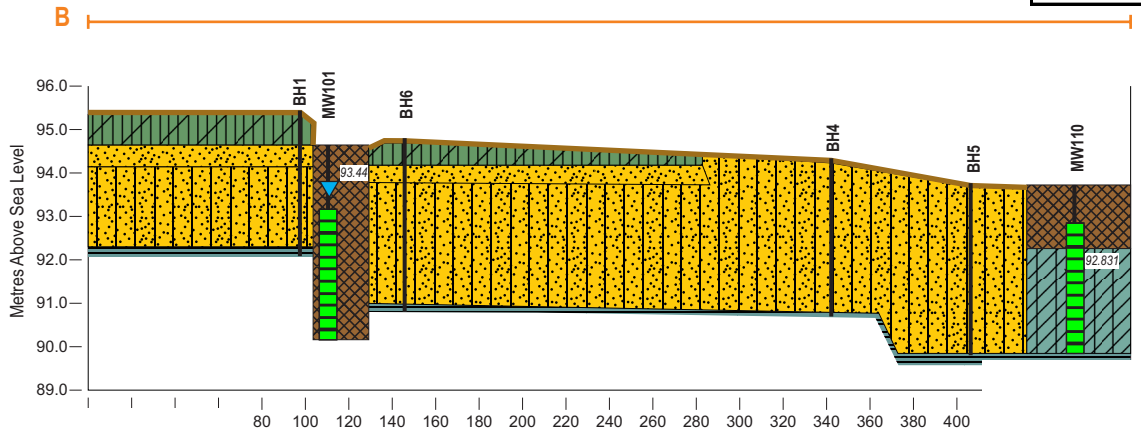
772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021

258896-PH2 SECTIONS-NOV21: GW PHC



Location	Screen Interval (mbgs)	Date
MW101	(1.48 - 4.48)	18-Mar-2020
MW102	(1.44 - 4.44)	18-Mar-2020
MW103	(0.99 - 3.99)	18-Mar-2020
MW110	(0.89 - 3.89)	18-Mar-2020



Parameter	Abbreviation	Table 8 GW Standards*	Units
Acetone	Ac	2700	µg/L

SCALE:
20 X VERTICAL EXAGGERATION

SOURCE:
BASED ON FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- TEST HOLE
- SCREEN INTERVAL
- GROUND WATER ELEVATION (MAR. 18. 2020)
- masl METRES ABOVE SEA LEVEL

- TOPSOIL
- FILL/DISTURBED SOIL
- SAND
- SILTY SAND/SANDY SILT /SANDY SILT TILL
- CLAYEY SILT
- CLAYEY SILT TILL/SHALE TILL
- SHALE

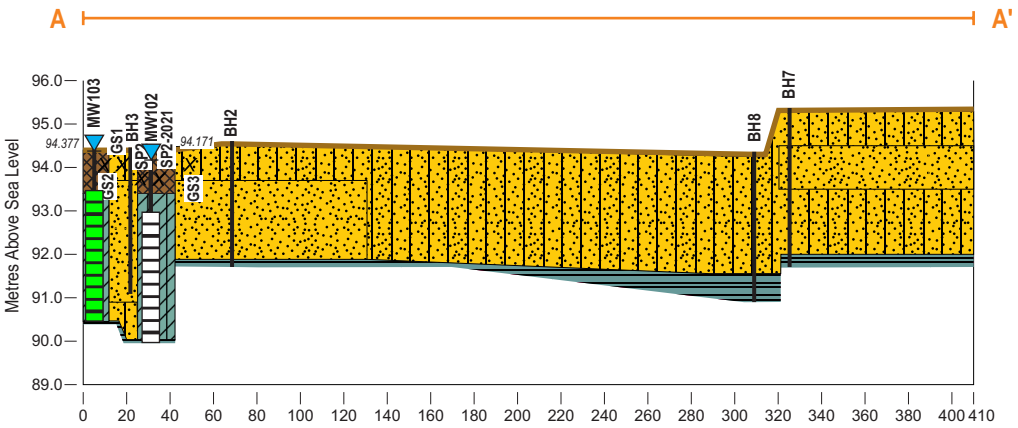
LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

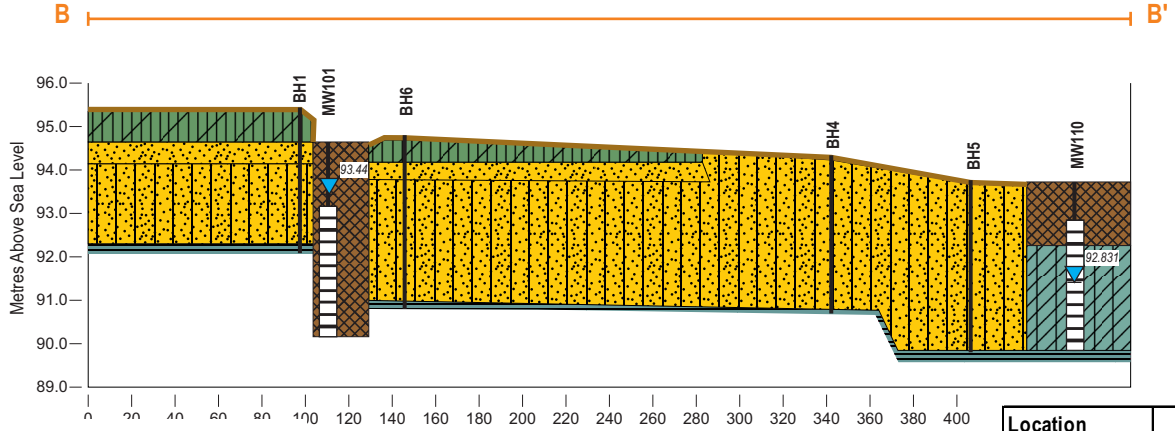
CROSS SECTIONS A-A' AND B-B' GROUND WATER ANALYTICAL RESULTS – VOCs

FIGURE 8B

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021





Parameter	Abbreviation	Table 8 GW Standards*	Units
Antimony	An	6	µg/L

Location	Screen Interval (mbgs)	Date
MW 103	(0.99 - 3.99)	19-Oct-2021
MW 1030	(0.99 - 3.99)	19-Oct-2021

SCALE:
20 X VERTICAL EXAGGERATION

SOURCE:
BASED ON FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- TEST HOLE
- SCREEN INTERVAL
- GROUND WATER ELEVATION (MAR. 18. 2020)
- masl METRES ABOVE SEA LEVEL

- TOPSOIL
- FILL/DISTURBED SOIL
- SAND
- SILTY SAND/SANDY SILT /SANDY SILT TILL
- CLAYEY SILT
- CLAYEY SILT TILL/SHALE TILL
- SHALE

LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

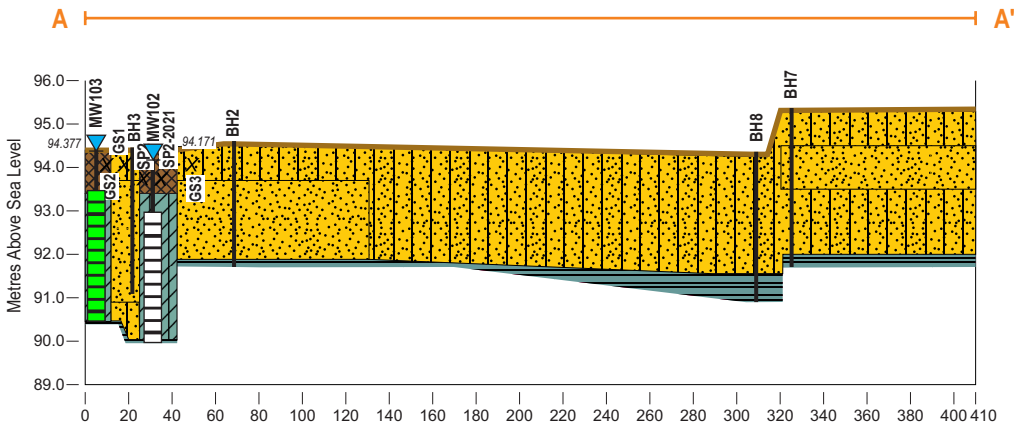
CROSS SECTIONS
A-A' AND B-B'
GROUND WATER ANALYTICAL RESULTS METALS (INCLUDING HYDRIDE-FORMING METALS)

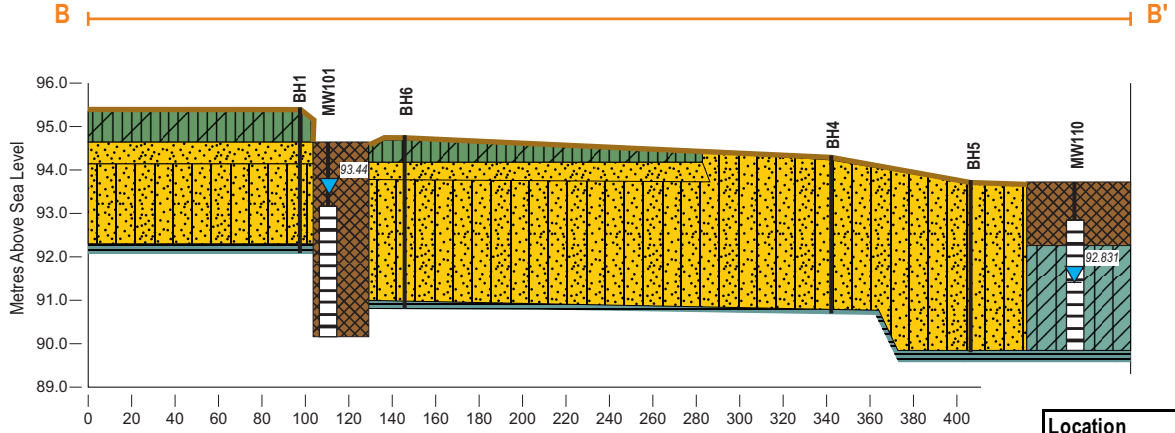
FIGURE
8C

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021

258896-PH2 SECTIONS-NOV21: GW MET





Parameter	Abbreviation	Table 8 GW Standards*	Units
Aldrin	Ald	0.35	µg/L

Location	Screen Interval (mbgs)	Date
MW 103	(0.99 - 3.99)	19-Oct-2021
MW 1030	(0.99 - 3.99)	19-Oct-2021

SCALE:
20 X VERTICAL EXAGGERATION

SOURCE:
BASED ON FIELD MEASUREMENTS BY EXP STAFF

DRAWN BY	CHECKED BY
K.G.	R.C.

LEGEND:

- TEST HOLE
- SCREEN INTERVAL
- GROUND WATER ELEVATION (MAR. 18. 2020)
- masl METRES ABOVE SEA LEVEL
- TOPSOIL
- FILL/DISTURBED SOIL
- SAND
- SILTY SAND/SANDY SILT /SANDY SILT TILL
- CLAYEY SILT
- CLAYEY SILT TILL/SHALE TILL
- SHALE

LOCATION WHERE ALL SAMPLING PARAMETERS ARE WITHIN TABLE 8 STANDARDS FOR ALL TYPES OF PROPERTY USE WITH MEDIUM/FINE TEXTURED SOIL ARE SHOWN IN GREEN

CROSS SECTIONS A-A' AND B-B' GROUND WATER ANALYTICAL RESULTS - OCs

FIGURE 8D

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: NOVEMBER 2021

258896-PH2 SECTIONS-NOV21: GW Oc

Tables

Table 1: SITE ENVIRONMENTAL SETTING DATA

772 Winston Churchill Boulevard, Oakville, Ontario
October 2021

NATIVE SOIL

Type:	Silt
Hydraulic Conductivity	(select range)
> 10^{-3} cm/s:	
<10^{-3} to >10^{-6} cm/s:	Estimated to be 10^{-6} cm/s
< 10^{-6} cm/s:	
Soil Texture:	Medium to fine
Estimated or Measured:	Estimated

GROUND WATER

Depth to Water Table:	0.25 to 1.22 mbgs (metres below ground surface)
Estimated or Measured:	Measured (EXP, 2020)
Direction of Flow:	South
Estimated or Measured:	Estimated based on topography

MUNICIPAL SERVICES

Piped Water:	No
Ground Water Source:	Yes
Distance to Well:	30 metres east and south of the Site
Surface Water Source:	Yes - Lake Ontario
Sanitary Sewer:	No
Storm Sewer:	No

PRIVATE SERVICES

Distance to Nearest Well:	NA
Approximate Depth of Well:	NA
Private Sanitary Sewage:	No

SURFACE WATER

Name of water body:	Clearview Creek
Distance from site:	On-site
Elevation drop from site:	Approxiamtely 2 metres
Direct Drainage from site:	Yes

Table 2: DARCY'S LAW CALCULATIONS

772 Winston Churchill Boulevard, Oakville, Ontario
October 2021

Q=kia v=ki/n t=T/v

Permeability k (m/sec) =	1.00E-08		
(cm/sec) =	1.00E-06		
Gradient i (m/m) =	0.006		
Effective Porosity n =	0.20	Velocity v (m/sec) =	3.00E-10
Thickness T (m) =	NA	(feet/sec) =	9.84E-10
		(feet/day) =	8.50E-05
		(feet/year) =	3.10E-02
		(metres/year) =	9.46E-03

Permeability for silt based on published values (Freeze and Cherry, 1979).
Effective porosity based on published values (McWhorter and Sunada, 1977).
Gradient estimated based on slope of land.

258896

Table 3: ELEVATIONS OF GROUND WATER TABLE

772 Winston Churchill Boulevard, Oakville, Ontario
October 2021

Test Hole I.D.	Elevation at Ground Surface (masl)	Date	Top of Screened Interval (mbgs)	Bottom of Screened Interval (mbgs)	Ground Water Depth Below Measuring Point (mbgs)	Ground Water Table Elevation (masl)
BH101	94.66	18-Mar-20	1.48	4.48	1.222	93.44
BH102	94.42	18-Mar-20	1.44	4.44	0.249	94.17
BH103	94.78	18-Mar-20	0.99	0.91	0.403	94.38
BH110	93.71	18-Mar-20	0.89	3.89	0.879	92.831
		19-Oct-21			0.387	93.323

NOTES:

Elevations were measured by the Trimble with a CS controller

mbgs means "metres below ground surface". masl means "metres above sea level". N/A means "not applicable".

Table 4: SAMPLE ANALYSIS SUMMARY

849 Eglinton Avenue East, Toronto, Ontario
October 2021

Test Hole I.D.	Sample ID	Parameters																		
		Soil Sample Analysis												Ground Water Sample Analysis						
		Sampling Date	Sampling Interval (mbgs)	PHC F1 to F4	1,4-Dioxane	VOCs	PAHs	PCBs	Metals (and Hydride-Forming Metals)	ORPs	EC/SAR	Grain Size	pH	Sampling Date	Sampling Interval (mbgs)	PHC F1 to F4	VOCs	PAHs	Metals (and Hydride-Forming Metals)	Sodium and Chloride	ORPs
BH1	BH1 SS5	28-Dec-20	3.0 to 3.5	X		X								12-Jan-21	1.6 to 4.6	X	X				
BH2	BH2 SS2	31-Dec-20	0.7 to 1.5	X		X								12-Jan-21	1.6 to 4.6	X	X				
	BH2 SS5	31-Dec-20	3.0 to 3.6									X		25-Jan-21	27.5 to 30.5		X				
BH3	BH3 SS4	4-Jan-21	2.3 to 2.9	X		X								14-Jan-21	0.9 to 3.9	X	X				
														21-Jan-21	8.5 to 11.5		X				
BH4	BH4 SS2	31-Dec-20	0.7 to 1.5	X		X								12-Jan-21	3.1 to 6.1	(X)	(X)				
														21-Jan-21	12 to 15		X				
														22-Sep-21	3.1 to 6.1		X				
BH5	BH5 SS2	4-Jan-20	0.7 to 1.5				X		X		X		X	21-Jan-21	3.1 to 6.1	X	X	X	X	X	
	BH5 SS5	4-Jan-20	3.0 to 3.6	X		X			X		X		X	21-Jan-21	12 to 15		X				
														22-Sep-21	3.1 to 6.1		X				
BH6	BH6 SS2	29-Dec-20	0.7 to 1.5					(X)						14-Jan-21	4.6 to 7.6	X	X	(X)	(X)	(X)	
	BH6 SS5	29-Dec-20	3.0 to 3.6	X		X								21-Jan-21	12 to 15		(X)				
														22-Sep-21	4.6 to 7.6		X				
BH7	BH7 SS2	5-Jan-21	0.7 to 1.5				X		X		X		X	21-Jan-21	27.5 to 30.5		X				
	BH7 SS5	5-Jan-21	3.0 to 3.6	X		X			X		X		X								
BH8	BH8 SS2	28-Dec-20	0.7 to 1.5	X		X	X		X		X		X	12-Jan-21	1.6 to 4.6	X	X	X	X	X	
	BH8 SS5	28-Dec-20	3.0 to 3.7	X					X		X		X	21-Jan-21	12 to 15		X				
BH9	BH9 SS1	7-Jan-21	0 to 0.7				(X)		(X)		(X)		(X)	14-Jan-21	0.9 to 3.9	X	X				
	BH9 SS4	7-Jan-21	2.3 to 2.9	X		X															
BH10	BH10 SS2	7-Jan-21	0.7 to 1.5	(X)		(X)								-	-						
BH101	BH101-SS2	8-Sep-21	0.7 to 1.5	X										-	-						
	BH101-SS3	8-Sep-21	1.5 to 2.1									X		-	-						
BH102	BH102-SS2	8-Sep-21	0.7 to 1.5	X								X		-	-						
BH103	BH103-SS2	8-Sep-21	0.7 to 1.5	X										-	-						
BH104	-	-	-											22-Sep-21	0.4 to 2.0		X				
BH105	-	-	-											22-Sep-21	MUD						
BH106	-	-	-											22-Sep-21	DRY						
BH107	-	-	-											22-Sep-21	DRY						
BH108	BH108-SS2	8-Sep-21	0.7 to 1.5	X										6-Oct-21	2.13 to 5.18		X				
	BH108-SS4	8-Sep-21	2.3 to 2.9									X									
BH109	BH109-SS2	8-Sep-21	0.7 to 1.5	(X)										-	-						
BH110	-	-	-											22-Sep-21	7.6 to 10.7		(X)				
BH111	-	-	-											22-Sep-21	7.9 to 11.0		X				
		Total Locations Analyzed		16	0	10	4	1	4	0	4	4	7	**Total Locations Analyzed**		8	13	3	3	3	0
		Total Samples Analyzed		19	0	11	5	2	8	0	8	*	16	**Total Samples Analyzed**		9	25	4	4	4	0
		Field Duplicate Samples Analyzed		2	0	1	1	1	1	0	1	0	2	**Field Duplicate Samples Analyzed**		1	3	1	1	1	0

NOTES:

Hydride-Forming Metals include Antimony, Arsenic, and Selenium

Other Regulated Paramets (ORPs) in soil include Hot Water Soluble Boron, Cyanide, Hexavalent Chromium, and Mercury.

ORPs in ground water include Mercury, Chromium VI, Cyanide, Sodium, Chloride, Electrical Conductivity, and pH

Inorganics in ground water include: Aluminum, Bismuth, Iron, Lithium, Manganese, Phosphorus, Silicon, Strontium, Tin, Titanium, and Zirconium

mbgs means "metres below ground surface".

Sample collection location is indicated with an **X**. The locations where field duplicate samples were collected are indicated using **(X)**.

Table 5: SOIL CHEMICAL ANALYSIS - Petroleum Hydrocarbon Parameters

772 Winston Churchill Boulevard, Oakville, Ontario
October 2021

Sample I.D.	Units	MDL*	Test Hole BH1-SS4	Test Hole BH2-SS2	Test Hole BH3-SS3	Test Hole BH4-SS5	Test Hole BH8-SS5	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			2.29 to 2.90	0.76 to 1.37	1.52 to 2.13	3.05 to 3.66	3.05 to 3.66	
Soil Type			SANDY SILT TILL	SAND to SANDY SILT TILL	SAND	SANDY SILT TILL	SANDY SILT TILL	
Date of Sample Collection			16-Mar-20	16-Mar-20	16-Mar-20	17-Mar-20	17-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	27-Aug-19	27-Aug-19	27-Aug-19	
Certificate of Analysis Number			20T586006	20T586006	19T507956	19T507956	19T507956	
Laboratory I.D.			1036321	1036317	1036315	1036325	1036323	
Field Vapour Reading			0ppm	0ppm	0ppm	0ppm	0ppm	
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02
Toluene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.2
Ethylbenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Xylene Mixture (Total)	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
PHC F1 (C6 to C10) - BTEX	µg/g	5	<5	<5	<5	<5	<5	10
PHC F2 (C10 to C16)	µg/g	10	<10	<10	<10	<10	<10	240
PHC F3 (C16 to C34)	µg/g	50	<50	<50	<50	<50	<50	120
PHC F4 (C34 to C50)	µg/g	50	<50	<50	<50	<50	<50	120

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis. NA means "not analysed". NM means "not measured".

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured soil.
Exceedances of Table 8 Standards are shown in **bold**.

Table 5: SOIL CHEMICAL ANALYSIS - Petroleum Hydrocarbon Parameters

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Stockpile Sample SP1-1-20cm	Stockpile Sample SP2-3-0.5-0.7m	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			0.2	0.5 - 0.7	
Soil Type			SILTY CLAY	CLAYEY SILT	
Date of Sample Collection			17-Mar-20	18-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	
Certificate of Analysis Number			20T586006	20T586006	
Laboratory I.D.			1036326	1036327	
Field Vapour Reading			0ppm	0ppm	
Benzene	µg/g	0.02	<0.02	<0.02	0.02
Toluene	µg/g	0.05	<0.05	<0.05	0.2
Ethylbenzene	µg/g	0.05	<0.05	<0.05	0.05
Xylene Mixture (Total)	µg/g	0.05	<0.05	<0.05	0.05
PHC F1 (C6 to C10) - BTEX	µg/g	5	<5	<5	10
PHC F2 (C10 to C16)	µg/g	10	<10	<10	240
PHC F3 (C16 to C34)	µg/g	50	<50	<50	120
PHC F4 (C34 to C50)	µg/g	50	<50	<50	120

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis. NA means "not analysed". NM means "not measured".

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured soil. Exceedances of Table 8 Standards are shown in **bold**.

Table 6: SOIL CHEMICAL ANALYSIS - Volatile Organic Compounds

772 Winston Churchill Boulevard, Oakville, Ontario
October 2021

Sample I.D.	Units	MDL*	Test Hole BH1-SS4	Test Hole BH2-SS2	Test Hole BH3-SS3	Test Hole BH4-SS5	Test Hole BH8-SS5	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			2.29 to 2.90	0.76 to 1.37	1.52 to 2.13	3.05 to 3.66	3.05 to 3.66	
Soil Type			SANDY SILT TILL	SAND to SANDY SILT TILL	SAND	SANDY SILT TILL	SANDY SILT TILL	
Date of Sample Collection			16-Mar-20	16-Mar-20	16-Mar-20	17-Mar-20	17-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	27-Aug-19	27-Aug-19	27-Aug-19	
Certificate of Analysis Number			20T586006	20T586006	19T507956	19T507956	19T507956	
Laboratory I.D.			1036321	1036317	1036315	1036325	1036323	
1,1,1,2-Tetrachloroethane	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05
1,1,1-Trichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
1,1,2,2-Tetrachloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
1,1,2-Trichloroethane	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05
1,1-Dichloroethane	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05
1,1-Dichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
1,2-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
1,2-Dichloroethane	µg/g	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05
1,2-Dichloropropane	µg/g	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05
1,3-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
1,3-Dichloropropene	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05
1,4-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Acetone	µg/g	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02
Bromodichloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Bromoform	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Bromomethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Carbon Tetrachloride	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Chlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Chloroform	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05
Cis- 1,2-Dichloroethylene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05
Dibromochloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Dichlorodifluoromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Ethylbenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Ethylene Dibromide	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05
Methyl Ethyl Ketone	µg/g	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5
Methyl Isobutyl Ketone	µg/g	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5
Methyl tert-butyl Ether	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Methylene Chloride	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
n-Hexane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Styrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Tetrachloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Toluene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.2
Trans- 1,2-Dichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Trichloroethylene	µg/g	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05
Trichlorofluoromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.25
Vinyl Chloride	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02
Xylene Mixture	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured soil.
Exceedances of Table 8 Standards are shown in **bold**.

Table 6: SOIL CHEMICAL ANALYSIS - Volatile Organic Compounds

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Stockpile Sample SP1-1-20cm	Stockpile Sample SP2-3-0.5-0.7m	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			0.2	0.5 - 0.7	
Soil Type			SILTY CLAY	CLAYEY SILT	
Date of Sample Collection			17-Mar-20	18-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	
Certificate of Analysis Number			20T586006	20T586006	
Laboratory I.D.			1036326	1036327	
1,1,1,2-Tetrachloroethane	µg/g	0.04	<0.04	<0.04	0.05
1,1,1-Trichloroethane	µg/g	0.05	<0.05	<0.05	0.05
1,1,2,2-Tetrachloroethane	µg/g	0.05	<0.05	<0.05	0.05
1,1,2-Trichloroethane	µg/g	0.04	<0.04	<0.04	0.05
1,1-Dichloroethane	µg/g	0.02	<0.02	<0.02	0.05
1,1-Dichloroethylene	µg/g	0.05	<0.05	<0.05	0.05
1,2-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	0.05
1,2-Dichloroethane	µg/g	0.03	<0.03	<0.03	0.05
1,2-Dichloropropane	µg/g	0.03	<0.03	<0.03	0.05
1,3-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	0.05
1,3-Dichloropropene	µg/g	0.04	<0.04	<0.04	0.05
1,4-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	0.05
Acetone	µg/g	0.50	<0.50	<0.50	0.5
Benzene	µg/g	0.02	<0.02	<0.02	0.02
Bromodichloromethane	µg/g	0.05	<0.05	<0.05	0.05
Bromoform	µg/g	0.05	<0.05	<0.05	0.05
Bromomethane	µg/g	0.05	<0.05	<0.05	0.05
Carbon Tetrachloride	µg/g	0.05	<0.05	<0.05	0.05
Chlorobenzene	µg/g	0.05	<0.05	<0.05	0.05
Chloroform	µg/g	0.04	<0.04	<0.04	0.05
Cis- 1,2-Dichloroethylene	µg/g	0.02	<0.02	<0.02	0.05
Dibromochloromethane	µg/g	0.05	<0.05	<0.05	0.05
Dichlorodifluoromethane	µg/g	0.05	<0.05	<0.05	0.05
Ethylbenzene	µg/g	0.05	<0.05	<0.05	0.05
Ethylene Dibromide	µg/g	0.04	<0.04	<0.04	0.05
Methyl Ethyl Ketone	µg/g	0.50	<0.50	<0.50	0.5
Methyl Isobutyl Ketone	µg/g	0.50	<0.50	<0.50	0.5
Methyl tert-butyl Ether	µg/g	0.05	<0.05	<0.05	0.05
Methylene Chloride	µg/g	0.05	<0.05	<0.05	0.05
n-Hexane	µg/g	0.05	<0.05	<0.05	0.05
Styrene	µg/g	0.05	<0.05	<0.05	0.05
Tetrachloroethylene	µg/g	0.05	<0.05	<0.05	0.05
Toluene	µg/g	0.05	<0.05	<0.05	0.2
Trans- 1,2-Dichloroethylene	µg/g	0.05	<0.05	<0.05	0.05
Trichloroethylene	µg/g	0.03	<0.03	<0.03	0.05
Trichlorofluoromethane	µg/g	0.05	<0.05	<0.05	0.25
Vinyl Chloride	µg/g	0.02	<0.02	<0.02	0.02
Xylene Mixture	µg/g	0.05	<0.05	<0.05	0.05

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured

Exceedances of Table 8 Standards are shown in **bold**.

Table 7: SOIL CHEMICAL ANALYSIS - Polycyclic Aromatic Hydrocarbons

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Test Hole BH1-SS1	Test Hole BH2-SS1	Test Hole BH3-SS1	Test Hole BH4-SS1	Test Hole BH8-SS1	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			0.0 - 0.61	0.0 - 0.61	0.0 - 0.61	0.0 - 0.61	0.0 - 0.61	
Soil Type			SILT	SAND	SANDY SILT	SANDY SILT	SILTY SAND	
Date of Sample Collection			16-Mar-20	16-Mar-20	16-Mar-20	17-Mar-20	17-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	26-Mar-20	26-Mar-20	26-Mar-20	
Certificate of Analysis Number			20T586006	20T586006	20T586006	20T586006	20T586006	
Laboratory I.D.			1036319	1036316	1036314	1036324	1036322	
2-and 1-methyl Naphthalene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.59
Acenaphthene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.072
Acenaphthylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.093
Anthracene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.22
Benzo(a)anthracene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.36
Benzo(a)pyrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Benzo(b)fluoranthene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.47
Benzo(g,h,i)perylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.68
Benzo(k)fluoranthene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.48
Chrysene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.8
Dibenzo(a,h)anthracene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1
Fluoranthene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.69
Fluorene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.19
Indeno(1,2,3-cd)pyrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.23
Naphthalene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09
Phenanthrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.69
Pyrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured soil.

*** The sum of 1- and 2-Methylnaphthalene concentrations must not exceed the soil Standard if both are detected.

Exceedances of Table 8 Standards are shown in **bold**.

Table 7: SOIL CHEMICAL ANALYSIS - Polycyclic Aromatic Hydrocarbons

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Stockpile Sample SP1-1-20cm	Stockpile Sample SP2-3-0.5-0.7m	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			0.2	0.5 - 0.7	
Soil Type			SILTY CLAY	CLAYEY SILT	
Date of Sample Collection			17-Mar-20	18-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	
Certificate of Analysis Number			20T586006	20T586006	
Laboratory I.D.			1036326	1036327	
2-and 1-methyl Naphthalene	µg/g	0.05	<0.05	<0.05	0.59
Acenaphthene	µg/g	0.05	<0.05	<0.05	0.072
Acenaphthylene	µg/g	0.05	<0.05	<0.05	0.093
Anthracene	µg/g	0.05	<0.05	<0.05	0.22
Benzo(a)anthracene	µg/g	0.05	<0.05	<0.05	0.36
Benzo(a)pyrene	µg/g	0.05	<0.05	<0.05	0.3
Benzo(b)fluoranthene	µg/g	0.05	<0.05	0.07	0.47
Benzo(g,h,i)perylene	µg/g	0.05	<0.05	<0.05	0.68
Benzo(k)fluoranthene	µg/g	0.05	<0.05	0.05	0.48
Chrysene	µg/g	0.05	<0.05	0.05	2.8
Dibenzo(a,h)anthracene	µg/g	0.05	<0.05	<0.05	0.1
Fluoranthene	µg/g	0.05	<0.05	0.09	0.69
Fluorene	µg/g	0.05	<0.05	<0.05	0.19
Indeno(1,2,3-cd)pyrene	µg/g	0.05	<0.05	<0.05	0.23
Naphthalene	µg/g	0.05	<0.05	<0.05	0.09
Phenanthrene	µg/g	0.05	<0.05	<0.05	0.69
Pyrene	µg/g	0.05	<0.05	0.07	1

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured soil.

*** The sum of 1- and 2-Methylnaphthalene concentrations must not exceed the soil Standard if both are detected.

Exceedances of Table 8 Standards are shown in **bold**.

Table 8: SOIL CHEMICAL ANALYSIS - Metals and Inorganics

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Test Hole BH1-SS1	Test Hole BH2-SS1	Test Hole BH3-SS1	Test Hole BH4-SS1	Test Hole BH8-SS1	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			0.0 - 0.61	0.0 - 0.61	0.0 - 0.61	0.0 - 0.61	0.0 - 0.61	
Soil Type			SILT	SAND	SANDY SILT	SANDY SILT	SILTY SAND	
Date of Sample Collection			16-Mar-20	16-Mar-20	16-Mar-20	17-Mar-20	17-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	26-Mar-20	26-Mar-20	26-Mar-20	
Certificate of Analysis Number			20T586006	20T586006	20T586006	20T586006	20T586006	
Laboratory I.D.			1036319	1036316	1036314	1036324	1036322	
Antimony	µg/g	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	1.3
Arsenic	µg/g	1	4	6	7	5	5	18
Barium	µg/g	2	45	45	80	45	34	220
Beryllium	µg/g	0.5	<0.5	<0.5	0.7	<0.5	0.8	2.5
Boron	µg/g	5	<5	5	12	8	15	36
Boron (Hot Water Extractable)	µg/g	0.10	0.15	0.27	0.39	0.4	1.17	1.5
Cadmium	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2
Chromium	µg/g	5	15	15	22	15	21	70
Cobalt	µg/g	0.5	6.3	4.9	12.1	6.9	11.6	22
Copper	µg/g	1	15	29	36	18	24	92
Lead	µg/g	1	8	12	10	9	4	120
Molybdenum	µg/g	0.5	<0.5	<0.5	0.8	<0.5	<0.5	2
Nickel	µg/g	1	14	14	25	15	25	82
Selenium	µg/g	0.4	<0.4	0.5	<0.4	<0.4	<0.4	1.5
Silver	µg/g	0.2	<0.2	0.2	<0.2	<0.2	<0.2	0.5
Thallium	µg/g	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1
Uranium	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	0.5	2.5
Vanadium	µg/g	1	27	24	32	24	30	86
Zinc	µg/g	5	35	43	64	41	57	290
Chromium, Hexavalent	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.66
Cyanide, Free	µg/g	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.051
Mercury	µg/g	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.27
Electrical Conductivity (2:1)	mS/cm	0.005	0.182	0.165	**0.994**	0.414	0.389	0.7
Sodium Adsorption Ratio	NA	NA	0.279	1.08	2.14	1.11	1.43	5
pH, 2:1 CaCl2 Extraction	pH Units	NA	7.4	7.23	7.7	7.35	7.91	NA

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured soil.

Exceedances of Table 8 Standards are shown in **bold**.

Table 8: SOIL CHEMICAL ANALYSIS - Metals and Inorganics

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Stockpile Sample SP1-1-20cm	Stockpile Sample SP2-3-0.5-0.7m	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			0.2	0.5 - 0.7	
Soil Type			SILTY CLAY	CLAYEY SILT	
Date of Sample Collection			17-Mar-20	18-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	
Certificate of Analysis Number			20T586006	20T586006	
Laboratory I.D.			1036326	1036327	
Antimony	µg/g	0.8	<0.8	<0.8	1.3
Arsenic	µg/g	1	6	9	18
Barium	µg/g	2	98	76	220
Beryllium	µg/g	0.5	1	0.7	2.5
Boron	µg/g	5	21	11	36
Boron (Hot Water Extractable)	µg/g	0.10	0.51	0.54	1.5
Cadmium	µg/g	0.5	<0.5	<0.5	1.2
Chromium	µg/g	5	26	26	70
Cobalt	µg/g	0.5	13.2	8.9	22
Copper	µg/g	1	31	34	92
Lead	µg/g	1	12	31	120
Molybdenum	µg/g	0.5	1.1	0.7	2
Nickel	µg/g	1	28	20	82
Selenium	µg/g	0.4	<0.4	0.7	1.5
Silver	µg/g	0.2	<0.2	0.3	0.5
Thallium	µg/g	0.4	<0.4	<0.4	1
Uranium	µg/g	0.5	1.2	0.9	2.5
Vanadium	µg/g	1	41	32	86
Zinc	µg/g	5	72	113	290
Chromium, Hexavalent	µg/g	0.2	<0.2	<0.2	0.66
Cyanide, Free	µg/g	0.040	<0.040	<0.040	0.051
Mercury	µg/g	0.10	<0.10	<0.10	0.27
Electrical Conductivity (2:1)	mS/cm	0.005	0.286	0.199	0.7
Sodium Adsorption Ratio	NA	NA	1.02	0.122	5
pH, 2:1 CaCl2 Extraction	pH Units	NA	7.74	7.49	NA

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured soil.

Exceedances of Table 8 Standards are shown in **bold**.

Table 9: SOIL CHEMICAL ANALYSIS - Organochlorine Pesticides

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Test Hole BH1-SS1	Test Hole BH2-SS1	Test Hole BH3-SS1	Test Hole BH4-SS1	Test Hole BH8-SS1	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			0.0 - 0.61	0.0 - 0.61	0.0 - 0.61	0.0 - 0.61	0.0 - 0.61	
Soil Type			SILT	SAND	SANDY SILT	SANDY SILT	SILTY SAND	
Date of Sample Collection			16-Mar-20	16-Mar-20	16-Mar-20	17-Mar-20	17-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	26-Mar-20	26-Mar-20	26-Mar-20	
Certificate of Analysis Number			20T586006	20T586006	20T586006	20T586006	20T586006	
Laboratory I.D.			1036319	1036316	1036314	1036324	1036322	
Aldrin	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Chlordane	µg/g	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.05
DDD	µg/g	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.05
DDE	µg/g	0.007	<0.007	0.010	<0.007	0.010	<0.007	0.05
DDT	µg/g	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	1.4
Dieldrin	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Endosulfan	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04
Endrin	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04
Gamma-Hexachlorocyclohexane	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Heptachlor	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Heptachlor Epoxide	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Hexachlorobenzene	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.02
Hexachlorobutadiene	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Hexachloroethane	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Methoxychlor	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured soil.

Exceedances of Table 8 Standards are shown in **bold**.

Table 9: SOIL CHEMICAL ANALYSIS - Organochlorine Pesticides

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Stockpile Sample SP1-1-20cm	Stockpile Sample SP2-3-0.5-0.7m	Hand Pit GS1	Duplicate of GS-1 GS1-0	Hand Pit GS2	Hand Pit GS3	Ontario Regulation 153/04 Table 8 Soil Standards**
Depth (m)			0.2	0.5 - 0.7	0.4	0.4	0.4	0.4	
Soil Type			SILTY CLAY	CLAYEY SILT	SANDY SILT	SANDY SILT	SANDY SILT	SANDY SILT	
Date of Sample Collection			17-Mar-20	18-Mar-20	19-Oct-21	19-Oct-21	19-Oct-21	19-Oct-21	
Date of Sample Analysis			26-Mar-20	26-Mar-20	25-Oct-21	25-Oct-21	25-Oct-21	25-Oct-21	
Certificate of Analysis Number			20T586006	20T586006	21T817791	21T817791	21T817791	21T817791	
Laboratory I.D.			1036326	1036327	3106243	3106246	3106249	3106250	
Aldrin	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Chlordane	µg/g	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.05
DDD	µg/g	0.007	<0.007	**0.056**	0.023	0.027	<0.007	<0.007	0.05
DDE	µg/g	0.007	<0.007	**0.28**	**0.145**	**0.193**	0.007	<0.007	0.05
DDT	µg/g	0.007	<0.007	0.15	0.067	0.088	<0.007	<0.007	1.4
Dieldrin	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Endosulfan	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04
Endrin	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.04
Gamma-Hexachlorocyclohexane	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Heptachlor	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Heptachlor Epoxide	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Hexachlorobenzene	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.02
Hexachlorobutadiene	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Hexachloroethane	µg/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Methoxychlor	µg/g	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for a potable ground water condition for a residential/parkland/institutional/commercial/ industrial/community property use and medium to fine textured soil.

Exceedances of Table 8 Standards are shown in **bold**.

Table 10: GROUND WATER CHEMICAL ANALYSIS - Petroleum Hydrocarbon Parameters

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Monitor MW110	Monitor MW101	Monitor MW102	Monitor MW103	Ontario Regulation 153/04 Table 8 Ground Water Standards**
Screen Interval (m)			0.89 - 3.89	1.48 - 4.48	1.44 - 4.44	0.99 - 3.99	
Date of Sample Collection			18-Mar-20	18-Mar-20	18-Mar-20	18-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	26-Mar-20	26-Mar-20	
Certificate of Analysis Number			20T586004	20T586004	20T586004	20T586004	
Laboratory I.D.			1036268	1036270	1036271	1036272	
Benzene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	5
Toluene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	22
Ethylbenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	2.4
Xylene Mixture (Total)	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	300
PHC F1 (C6 to C10) - BTEX	µg/L	25	<25	<25	<25	<25	150
PHC F2 (C10 to C16)	µg/L	100	<100	<100	<100	<100	500
PHC F3 (C16 to C34)	µg/L	100	<100	<100	<100	<100	500
PHC F4 (C34 to C50)	µg/L	100	<100	<100	<100	<100	500

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L).

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for shallow soils in a potable ground water condition for all types of property use and medium to fine textured soil.
Exceedances of Table 8 Standards are shown in **bold**.

Table 11: GROUND WATER CHEMICAL ANALYSIS - Volatile Organic Compounds

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	MDL*	Monitor MW110	Monitor MW101	Monitor MW102	Monitor MW103	Ontario Regulation 153/04 Table 8 Ground Water Standards**
Screen Interval (m)			0.89 - 3.89	1.48 - 4.48	1.44 - 4.44	0.99 - 3.99	
Date of Sample Collection			18-Mar-20	18-Mar-20	18-Mar-20	18-Mar-20	
Date of Sample Analysis			26-Mar-20	26-Mar-20	26-Mar-20	26-Mar-20	
Certificate of Analysis Number			20T586004	20T586004	20T586004	20T586004	
Laboratory I.D.			1036268	1036270	1036271	1036272	
1,1,1,2-Tetrachloroethane	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	1.1
1,1,1-Trichloroethane	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	200
1,1,2,2-Tetrachloroethane	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	1
1,1,2-Trichloroethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	4.7
1,1-Dichloroethane	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	5
1,1-Dichloroethylene	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	1.6
1,2-Dichlorobenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	3
1,2-Dichloroethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	1.6
1,2-Dichloropropane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	5
1,3-Dichlorobenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	59
1,3-Dichloropropene	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	0.5
1,4-Dichlorobenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	1
Acetone	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	2700
Benzene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	5
Bromodichloromethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	16
Bromoform	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	25
Bromomethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	0.89
Carbon Tetrachloride	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	0.79
Chlorobenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	30
Chloroform	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	2.4
cis- 1,2-Dichloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	1.6
Dibromochloromethane	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	25
Dichlorodifluoromethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	590
Ethylbenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	2.4
Ethylene Dibromide	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	0.2
Methyl Ethyl Ketone	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	1800
Methyl Isobutyl Ketone	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	640
Methyl tert-butyl ether	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	15
Methylene Chloride	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	50
n-Hexane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	51
Styrene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	5.4
Tetrachloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	1.6
Toluene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	22
trans- 1,2-Dichloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	1.6
Trichloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	1.6
Trichlorofluoromethane	µg/L	0.40	<0.40	<0.40	<0.40	<0.40	150
Vinyl Chloride	µg/L	0.17	<0.17	<0.17	<0.17	<0.17	0.5
Xylene Mixture	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	300

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L).

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for shallow soils in a potable ground water condition for all types of property use and medium to fine textured soil.
Exceedances of Table 8 Standards are shown in **bold**.

Table 12: GROUND WATER CHEMICAL ANALYSIS - Metals and Inorganics

772 Winston Churchill Boulevard, Oakville, Ontario
October 2021

Sample I.D.	Units	MDL*	Monitor MW103	Duplicate of MW103 MW103-0	Ontario Regulation 153/04 Table 8 Ground Water Standards**
Screen Interval (m)			0.99 - 3.99	0.99 - 3.99	
Date of Sample Collection			19-Oct-21	19-Oct-21	
Date of Sample Analysis			25-Oct-21	25-Oct-21	
Certificate of Analysis Number			21T817791	21T817791	
Laboratory I.D.			3106300	3106302	
Dissolved Antimony	µg/L	1.0	<1.0	<1.0	6
Dissolved Arsenic	µg/L	1.0	1.9	1.9	25
Dissolved Barium	µg/L	2.0	92.1	90.9	1000
Dissolved Beryllium	µg/L	0.50	<0.50	<0.50	4
Dissolved Boron	µg/L	10.0	338	341	5000
Dissolved Cadmium	µg/L	0.20	<0.20	<0.20	2.1
Dissolved Chromium	µg/L	2.0	4.8	4.9	50
Dissolved Cobalt	µg/L	0.50	0.85	0.92	3.8
Dissolved Copper	µg/L	1.0	1.5	1.5	69
Dissolved Lead	µg/L	0.50	2.2	1.3	10
Dissolved Molybdenum	µg/L	0.50	<0.50	<0.50	70
Dissolved Nickel	µg/L	3.0	<3.0	<3.0	100
Dissolved Selenium	µg/L	1.0	2.9	2.4	10
Dissolved Silver	µg/L	0.20	<0.20	<0.20	1.2
Dissolved Thallium	µg/L	0.30	<0.30	<0.30	2
Dissolved Uranium	µg/L	0.50	1.67	1.7	20
Dissolved Vanadium	µg/L	0.40	<0.40	<0.40	6.2
Dissolved Zinc	µg/L	5.0	6	<5.0	890

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L).

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for shallow soils in a potable ground water condition for all types of property use and medium to fine textured soil.
Exceedances of Table 8 Standards are shown in **bold**.

Table 13: GROUND WATER CHEMICAL ANALYSIS - Organochlorine Pesticides

772 Winston Churchill Boulevard, Oakville, Ontario
October 2021

Sample I.D.	Units	MDL*	Monitor MW103	Duplicate of MW103 MW103-0	Ontario Regulation 153/04 Table 8 Ground Water Standards**
Screen Interval (m)			0.99 - 3.99	0.99 - 3.99	
Date of Sample Collection			19-Oct-21	19-Oct-21	
Date of Sample Analysis			25-Oct-21	25-Oct-21	
Certificate of Analysis Number			21T817791	21T817791	
Laboratory I.D.			3106300	3106302	
Aldrin	µg/L	0.01	<0.01	<0.01	0.35
Chlordane	µg/L	0.04	<0.04	<0.04	0.06
DDD	µg/L	0.05	<0.05	<0.05	1.8
DDE	µg/L	0.01	<0.01	<0.01	10
DDT	µg/L	0.04	<0.04	<0.04	0.05
Dieldrin	µg/L	0.02	<0.02	<0.02	0.35
Endosulfan	µg/L	0.05	<0.05	<0.05	0.56
Endrin	µg/L	0.05	<0.05	<0.05	0.36
Gamma-Hexachlorocyclohexane	µg/L	0.01	<0.01	<0.01	0.95
Heptachlor	µg/L	0.01	<0.01	<0.01	0.038
Heptachlor Epoxide	µg/L	0.01	<0.01	<0.01	0.038
Hexachlorobenzene	µg/L	0.01	<0.01	<0.01	1
Hexachlorobutadiene	µg/L	0.01	<0.01	<0.01	0.44
Hexachloroethane	µg/L	0.01	<0.01	<0.01	2.1
Methoxychlor	µg/L	0.04	<0.04	<0.04	0.3

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L).

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

** Standards shown are for shallow soils in a potable ground water condition for all types of property use and medium to fine textured soil.
Exceedances of Table 8 Standards are shown in **bold**.

Table 14: SEDIMENT CHEMICAL ANALYSIS - Polycyclic Aromatic Hydrocarbons

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	RDL	Grab Sample SED 1	Grab Sample SED 2	Ontario Regulation 153/04 Table 8 Sediment Standards**	Ontario Regulation 153/04 Table 1 Soil Standards***
Date of Sample Collection			18-Mar-20	18-Mar-20		
Date of Sample Analysis			26-Mar-20	26-Mar-20		
Certificate of Analysis Number			20T586007	20T586007		
AGAT I.D.			1036282	1036283		
2-and 1-methyl Naphthalene	µg/g	0.05	<0.05	<0.05	NV	0.59
Acenaphthene	µg/g	0.05	<0.05	<0.05	NV	0.072
Acenaphthylene	µg/g	0.05	<0.05	<0.05	NV	0.093
Anthracene	µg/g	0.05	<0.05	<0.05	0.22	NR
Benz(a)anthracene	µg/g	0.05	0.05	0.08	0.32	NR
Benzo(a)pyrene	µg/g	0.05	0.05	0.08	0.37	NR
Benzo(b)fluoranthene	µg/g	0.05	0.06	0.11	NV	0.47
Benzo(g,h,i)perylene	µg/g	0.05	<0.05	<0.05	0.17	NR
Benzo(k)fluoranthene	µg/g	0.05	0.06	0.11	0.24	NR
Chrysene	µg/g	0.05	0.08	0.12	0.34	NR
Dibenz(a,h)anthracene	µg/g	0.05	<0.05	<0.05	0.06	NR
Fluoranthene	µg/g	0.05	0.15	0.24	0.75	NR
Fluorene	µg/g	0.05	<0.05	<0.05	0.19	NR
Indeno(1,2,3-cd)pyrene	µg/g	0.05	<0.05	<0.05	0.2	NR
Naphthalene	µg/g	0.05	<0.05	<0.05	NV	0.09
Phenanthrene	µg/g	0.05	0.07	0.13	0.56	NR
Pyrene	µg/g	0.05	0.11	0.20	0.49	NR

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

NV - no value; NR - not required.

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for all types of property use.

*** Table 1 Background Soil Standards considered suitable in the absence of a Table 8 Sediment Standard.

Exceedances of Table 1 and/or 8 Standards are shown in **bold**.

Table 15: SEDIMENT CHEMICAL ANALYSIS - Metals Parameters

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	RDL	Grab Sample SED 1	Grab Sample SED 2	Grab Sample SED 101	Grab Sample SED 102	Duplicate of SED 102 SED 102-0	Grab Sample SED 103	Ontario Regulation 153/04 Table 8 Sediment Standards**	Ontario Regulation 153/04 Table 1 Soil Standards**
Date of Sample Collection			18-Mar-20	18-Mar-20	19-Oct-21	19-Oct-21	19-Oct-21	19-Oct-21		
Date of Sample Analysis			26-Mar-20	26-Mar-20	25-Oct-21	25-Oct-21	25-Oct-21	25-Oct-21		
Certificate of Analysis Number			20T586007	20T586007	21T817791	21T817791	21T817791	21T817791		
AGAT I.D.			1036282	1036283	3106279	3106281	3106282	3106294		
Antimony	µg/g	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	NV	1
Arsenic	µg/g	1	6	5	6	**18**	**19**	6	6	NR
Barium	µg/g	2	67	36	48.6	53	53.3	63	NV	210
Beryllium	µg/g	0.5	0.8	0.9	1	<0.4	0.4	0.8	NV	2.5
Boron	µg/g	5	13	17	14	<5	5	13	NV	36
Boron (Hot Water Extractable)	µg/g	0.10	0.64	0.61	-	-	-	-	NA	NA
Cadmium	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	NR
Chromium	µg/g	5	23	25	22	17	16	23	26	NR
Cobalt	µg/g	0.5	13.3	13.4	12	4	4.4	11.1	50	NR
Copper	µg/g	1	**29**	**31**	**33.2**	**22.2**	**22.1**	**29.2**	16	NR
Lead	µg/g	1	14	7	13	**79**	**72**	16	31	NR
Molybdenum	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	NV	2
Nickel	µg/g	1	**28**	**30**	**28**	10	10	**26**	16	NR
Selenium	µg/g	0.4	<0.4	<0.4	<0.8	0.8	<0.8	<0.8	NV	1.2
Silver	µg/g	0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	0.5	NR
Thallium	µg/g	0.4	<0.4	<0.4	<0.5	<0.5	<0.5	<0.5	NV	1
Uranium	µg/g	0.5	0.6	0.7	0.57	0.57	0.5	0.66	NV	1.9
Vanadium	µg/g	1	32	33	29.6	20.8	21.7	31	NV	86
Zinc	µg/g	5	80	92	77	48	47	120	120	NR
Chromium, Hexavalent	µg/g	0.2	<0.2	<0.2	-	-	-	-	NV	0.66
Cyanide, Free	µg/g	0.040	<0.040	<0.040	-	-	-	-	0.1	NR
Mercury	µg/g	0.10	<0.10	<0.10	-	-	-	-	0.2	NR
Electrical Conductivity (2:1)	mS/cm	0.005	0.508	1.46	-	-	-	-	NA	-
Sodium Adsorption Ratio	NA	NA	3.22	20.8	-	-	-	-	NA	-
pH, 2:1 CaCl2 Extraction	pH Units	NA	7.71	7.62	-	-	-	-	NA	-

NOTES:

Analysis by AGAT Laboratories.

NV - no value; NR - not required.

All results in ppm (µg/g) and based on dry weight basis.

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for all types of property use.

*** Table 1 Background Soil Standards considered suitable in the absence of a Table 8 Sediment Standard.
Exceedances of Table 1 and/or 8 Standards are shown in **bold**.

Table 16: SEDIMENT CHEMICAL ANALYSIS - Organochlorine Pesticides

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample I.D.	Units	RDL	Grab Sample SED 1	Grab Sample SED 2	Ontario Regulation 153/04 Table 8 Sediment Standards**	Ontario Regulation 153/04 Table 1 Soil Standards**
Date of Sample Collection			18-Mar-20	18-Mar-20		
Date of Sample Analysis			26-Mar-20	26-Mar-20		
Certificate of Analysis Number			20T586007	20T586007		
AGAT I.D.			1036282	1036283		
Aldrin	µg/g	0.002	<0.002	<0.002	0.002	NR
Chlordane	µg/g	0.007	<0.007	<0.007	0.007	NR
DDD	µg/g	0.007	<0.007	<0.007	0.008	NR
DDE	µg/g	0.005	<0.005	<0.005	0.005	NR
DDT	µg/g	0.007	<0.007	<0.007	0.007	NR
Dieldrin	µg/g	0.002	<0.002	<0.002	0.002	NR
Endosulfan	µg/g	0.005	<0.005	<0.005	NV	0.04
Endrin	µg/g	0.003	<0.003	<0.003	0.003	NR
Gamma-Hexachlorocyclohexane	µg/g	0.005	<0.005	<0.005	NV	0.01
Heptachlor	µg/g	0.005	<0.005	<0.005	NV	0.05
Heptachlor Epoxide	µg/g	0.005	<0.005	<0.005	0.005	NR
Hexachlorobenzene	µg/g	0.002	<0.002	<0.002	0.02	NR
Hexachlorobutadiene	µg/g	0.01	<0.01	<0.01	NV	0.01
Hexachloroethane	µg/g	0.01	<0.01	<0.01	NV	0.01
Methoxychlor	µg/g	0.005	<0.005	<0.005	NV	0.05

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

NV - no value; NR - not required.

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for all types of property use.

*** Table 1 Background Soil Standards considered suitable in the absence of a Table 8 Sediment Standard.

Exceedances of Table 1 and/or 8 Standards are shown in **bold**.

Appendix A – Limitations

LIMITATIONS AND USE OF REPORT

BASIS OF REPORT

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

Where applicable, recommended field services are the minimum necessary to ascertain that construction is being carried out in general conformity with building code guidelines, generally accepted practices and EXP's recommendations. Any reduction in the level of services recommended will result in EXP providing qualified opinions regarding the adequacy of the work. EXP can assist design professionals or contractors retained by the Client to review applicable plans, drawings, and specifications as they relate to the Report or to conduct field reviews during construction.

RELIANCE ON INFORMATION PROVIDED

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

STANDARD OF CARE

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

COMPLETE REPORT

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

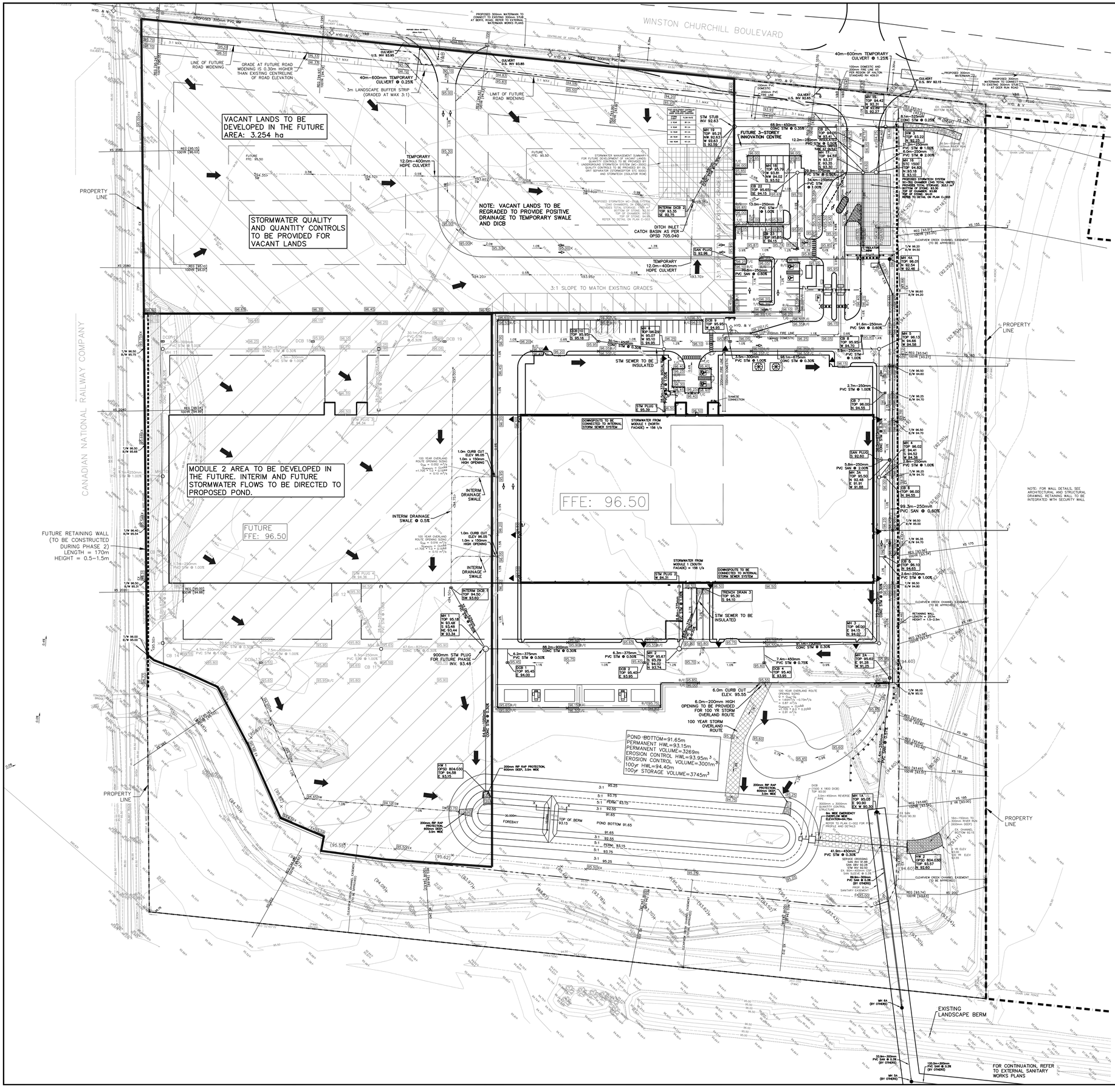
USE OF REPORT

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

REPORT FORMAT

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

Appendix B – Topographic Maps



SCALE BAR
1:600

REGION OF HALTON NOTES

GENERAL NOTES

1. The location of all underground and aboveground utilities and structures is not necessarily shown on these drawings, and, where shown, the accuracy of the location of such utilities and structures is not guaranteed. Before starting work, the contractor shall determine the exact location of all such utilities and structures, and shall assume all liability for damage to them.
2. All areas disturbed by the contractor during the construction of the works shown herein shall be restored to original condition or better as determined by Planning and Public Works Department. All grass and vegetation covered areas shall be restored by placing 100mm of topsoil and No. 1 nursery sod to establish a grass cover to the satisfaction of the City/Town unless noted otherwise.
3. Town of Oakville and Region of Halton standard drawings and O.P.S.D. with Regional amendments for sanitary sewers and watermains shall constitute part of the engineering design and construction contract.
4. Alternative materials may be acceptable, provided approval has first been obtained from the Town Engineer and/or the Regional Commissioner of Planning and Public Works.
5. No blasting is permitted.
6. Any areas within R.O.W. which require fill in excess of 0.30m are subject to compaction tests and such tests must show a min. compaction of 95% S.P.D. at all depths.
7. Manhole and valve chamber covers are to be set flush with base course asphalt and adjusted to final grade prior to installing top lift of asphalt.
8. All trenches within existing right–of–way are to be backfilled in accordance with Town of Milton requirements.

SANITARY SEWER NOTES

1. Sanitary manholes as per O.P.S.D 701.010 with frames and covers as per O.P.S.D. 401.01 type "A"unless otherwise noted on the drawings.
2. Benching in manholes to be as per O.P.S.D. 701.021 as amended by the Region of Halton. Benching in sanitary manholes to be to the obvert of the pipe.
3. Safety platforms as per O.P.S.D. 404.020 to be installed only in manholes where depths exceed 5.0m as directed by the Region and as indicated on the profile drawings.
4. Sanitary sewer pipe shall be PVC SDR35 conforming to A.S.T.M. D3034 unless otherwise noted.
5. Sanitary service connections to be 125mm dia for single residential connections and 150mm dia for dual residential and single non–residential connections. Sanitary Service connections to be minimum 2% grade and shall be non–white in colour.
6. Services to be min. 2.15m and max. 2.75m deep at property line. Risers shall be used where noted as per OPSD 1006.01.
7. Class "B"bedding on all sewers and connections to be as per O.P.S.D. 1005.02 unless noted otherwise
8. Granular backfill around manholes shall be compacted by mechanical means to a minimum of 95% S.P.D.

WATERMAIN NOTES

1. Watermains 150mm to 300mm diameter to be P.V.C. CL150 (DR–18) with gasketed joints.
2. Water service connections to be as per O.P.S.D. 1104.01. Pipe for all service connections up to 50mm dia. shall be type K soft copper tubing.
3. A min. horizontal separation of 2.5m must be maintained between watermains and sanitary or storm sewers, including service laterals.
4. A min. vertical separation of 0.15m between watermains and sewers must be maintained if watermain is installed above sewer or 0.50m if sewer is above watermain.
5. Watermain bedding to be suitable granular bedding material as per O.P.S.D. 1102.01, Class "B.
6. All hydrants as per O.P.S.D. 1105.01 to have steamer connections. Hydrants to be supplied with:
   - Two (2) 63.5mm (2 ½") with CSA standard thread, 63.5mm I.D., 79.4 O.D., 5 threads per 25mm, 31.75mm square operating nut;
   and
   - One (1) 100mm (4") storz pumper connection as per CAN/ULC #S–520, 31.75mm square operating nut, and storz cap painted gloss black.
7. Hydrants shall be installed such that the rod stem length shall not exceed 1.7m measured from the break–off flange. If hydrant barrel length exceeds 1.7m then a hydrant that can be raised from the bottom without increasing rod length is to be used.
8. All metallic watermains, fittings, hydrants and restrainers to have cathodic protection in accordance with Region of Halton standard drawings RH 420.01 and RH 420.02..
9. All sacrificial anodes shall conform to A.S.T.M. B–418 type II and shall be made of high grade electrolytic zinc, 99.99% pure.
10. Anode installation is not required within valve–chambers, drain chambers or air release chambers.
11. All weld connections to be coated with "TC Mastic"or approved equivalent.
12. For all anodes connected to new pipe, fittings or to existing metallic watermains, a cadwelder and CA–15 or equivalent cartridge shall be used. Anode installation shall be performed in accordance with the manufacturers instructions.
13. Where new pipe is to be connected to existing ductile iron or cast iron pipe a 14.5kg magnesium anode is to be connected to the first length of existing pipe, as per Region of Halton standard drawing RH 420.01.
14. All valves to open left (counter–clockwise) and shall have 50mm square standard AWWA operating nut.
15. All plugs, caps, tees, and bends shall be mechanically restrained as per manufacturers specifications. Restraints shall meet UNI–B–13–92.
16. Recommended restrained length are as follows:

RECOMMENDED RESTRAINED LENGTH OF PVC PIPE INSTALLED IN SAND–SILT:

NOM. PIPE SIZE	90° BEND	45° BEND	22.5° BEND	11.25° BEND	45° VERT. BEND DOWN/UP	VALVE/HYD DEAD–END
150	3.7m	1.6m	0.8m	0.4m	4.6m/1.6m	11.1m
200	4.8m	2.0m	1.0m	0.5m	2.9m/1.0m	14.4m
300	6.8m	2.5m	1.4m	0.7m	8.6m/2.9m	20.7m

NOM. PIPE SIZE	REDUCING TEE	NOM. PIPE SIZE	STRAIGHT TEE
200x150	6.2m (BRANCH ONLY)	150	8.5m (BRANCH)/2.9m (MAIN)
300x150	3.7m (BRANCH ONLY)	200	12.1m (BRANCH)/6.5m (MAIN)
300x200	8.9m (BRANCH)/1.8m (MAIN)	300	18.9m (BRANCH)/13.3m (MAIN)

17. Where watermain is placed in fill or in previously disturbed ground all joints to be mechanically restrained.
18. Minimum depth of cover over watermain shall be 1.70m measured from the road centreline elevation.
19. The depth of water services at property line should be a minimum of 1.7m and a maximum of 2.0m. The distance between the ground elevation and the top of the rod should be between 0.5m and 1.0m.
20. Water services crossing the storm sewer to have min. 1.70m of cover. Where this cannot be achieved, water service is to cross under storm sewer.
21. Gate valves conforming to A.W.W.A. C500 standards are required on watermains 300mm and under. Line gate valves shall have auger of screw type valve boxes.
22. All watermain fittings shall have mechanical joints.
23. Vertical and horizontal alignment of watermain to be achieved by deflection of joints as per manufacturer's specifications. Deflection in the barrel is not permitted.
24. Tracer wire is to be installed on all new installations of PVC watermain pipe for locating purposes. A solid 10 gauge T.W.U. copper wire is to be installed along the pipe, strapped to the pipe at 6 metre intervals. Joints in the wire between valves are not permitted.
25. The inspector may test the tracing wire for conductivity. If the tracing wire is not continuous from valve to valve, the contractor shall, at his own expense, replace or repair the wire.
26. All water customers supplied by a watermain to be shut down shall be notified by the contractor at least 24 hours in advance of the shut down as per region of Halton specifications. Notification shall take place under the Engineer's direction.
27. Operation of existing watermains shall be by Region of Halton staff only.
28. Fire hydrant caps shall be colour coded as per NFPA standards.

LEGEND

□	CATCH BASIN
□□	DOUBLE CATCH BASIN
○	PROPOSED STORM MANHOLE
⊡	PROPOSED CATCH BASIN MANHOLE
●	PROPOSED SANITARY MANHOLE
⋈	VALVE AND BOX
⚲	HYDRANT AND VALVE
95.75	PROPOSED ELEVATION
EX 95.75	PROPOSED ELEVATION TO MATCH EXISTING GRADE
T/W 96.05 B/W 95.10	TOP OF WALL/ BOTTOM OF WALL ELEVATION
SW 95.00	SWALE GRADE
95.75	FUTURE PROPOSED ELEVATION
<94.75>	INTERIM ELEVATION
94.39	EXISTING ELEVATION
(92.50)	CREEK DESIGN GRADE AS PER REALIGNMENT PLANS BY MRC
▨	MODULE 2 FUTURE DEVELOPMENT AREA
▧	VACANT LANDS, AREA TO BE DEVELOPED IN THE FUTURE
–··–··–	PROPOSED SWALE
△1	SERVICE CROSSING
➡	OVERLAND FLOW ROUTE
▶	BUILDING ENTRANCE

CROSSING	SITE SERVICE CROSSING SUMMARY	
△1	STM INV 94.57	SAN OBV 92.80
△2	STM INV 92.38	WM OBV 91.88
△3	STM INV 92.38	WM OBV 91.88
△4	STM INV 93.42	WM OBV 92.92
△5	STM INV 93.42	WM OBV 92.92
△6	WM INV 93.80	SAN OBV 93.07
△7	WM INV 93.90	SAN OBV 93.07

Key Plan

Item	Description	Date
2	RESUBMISSION FOR SPA	MAR.4/16
1	ISSUED FOR SITE PLAN APPROVAL	NOV.11/15

ISSUES/REVISIONS

LICENSED PROFESSIONAL ENGINEER
MAR.4/16
A. M. CANDARAS
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT NORTH

TRUE NORTH

Check and verify all dimensions and report any discrepancies to the Consultant whose seal is affixed to this drawing. This drawing is not to be scaled for the purpose of verifying dimensions.

This drawing shall not be used for construction purposes until signed and dated in the space below by the above mentioned Consultant.

Issued For Construction .... Date ....

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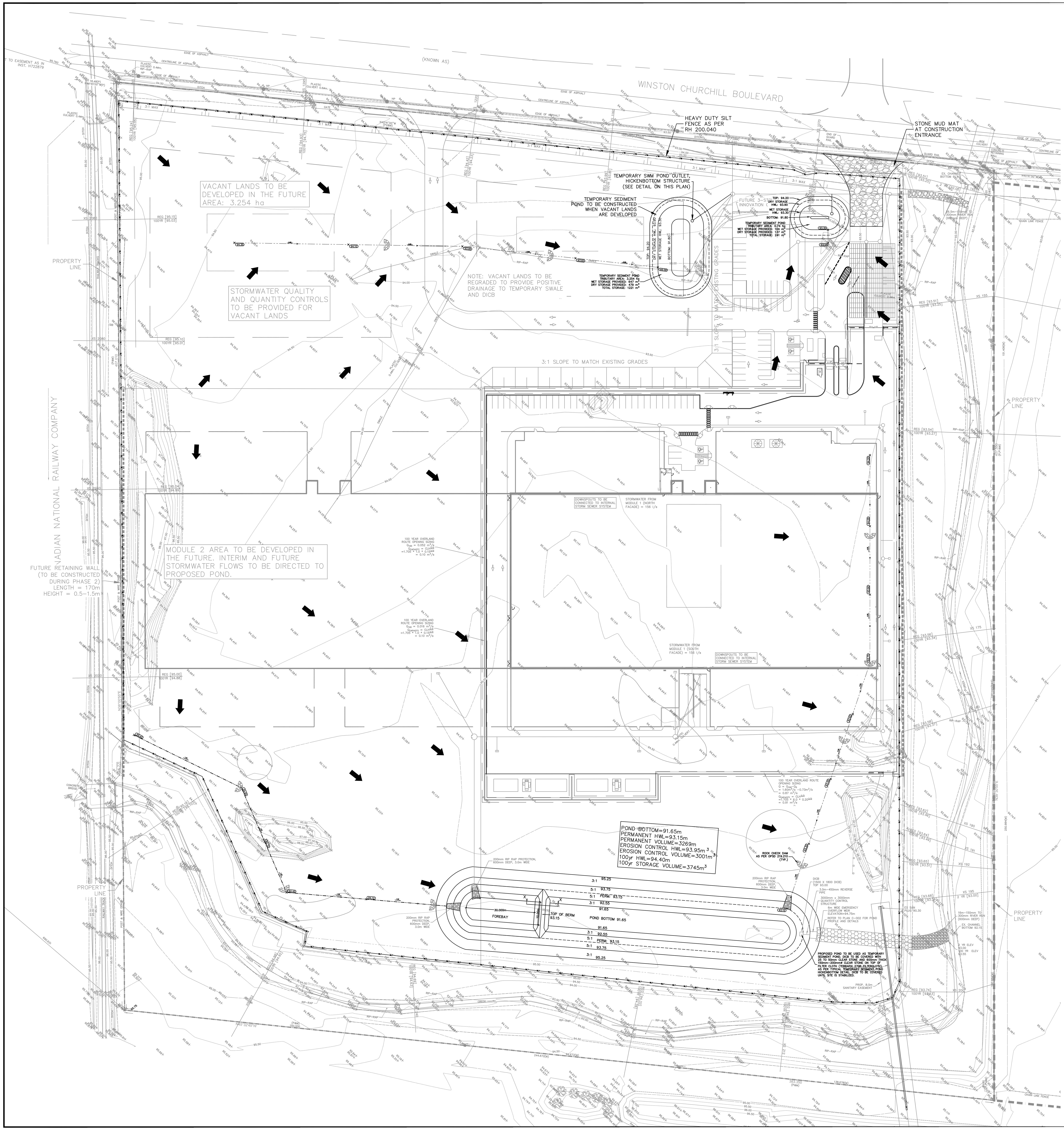
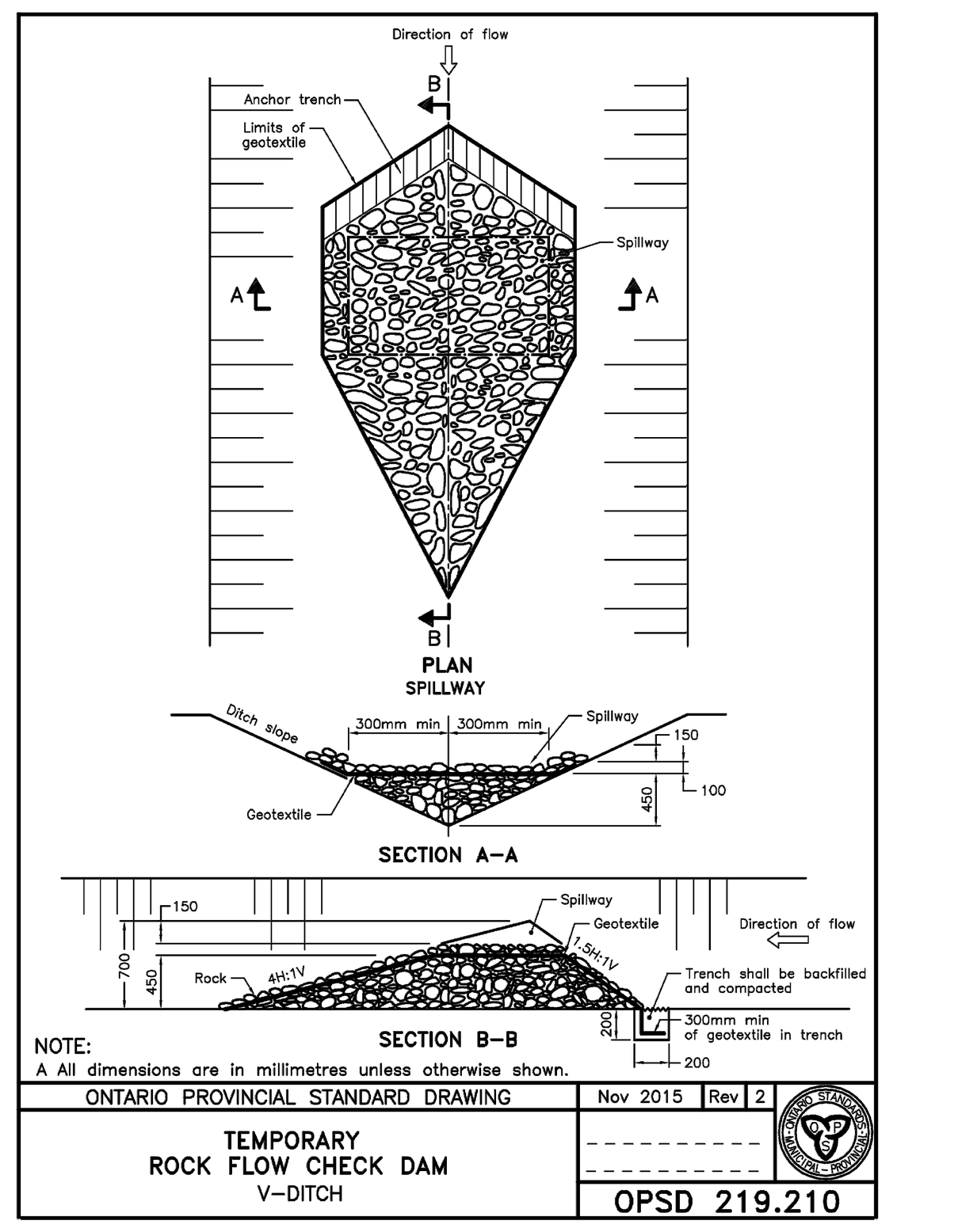
PROJECT OMEGA

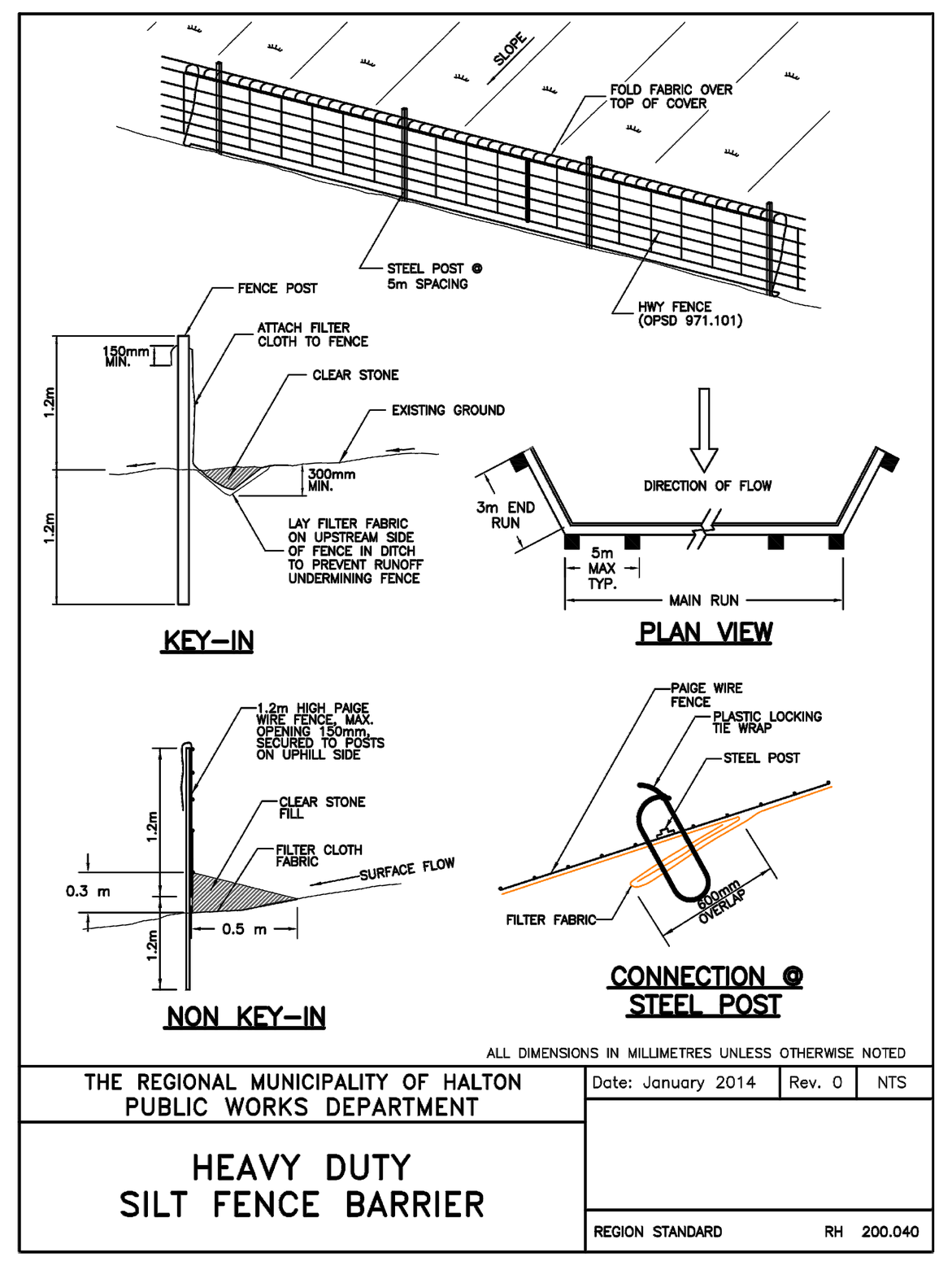
772 WINSTON CHURCHILL BLVD.
OAKVILLE, ONTARIO

Sheet Title:
GRADING, SERVICING, AND STORMWATER MANAGEMENT PLAN

Scale: 1:600
Project Number: 1507
Drawing Number: C–001







Construction Sequence and Maintenance for Erosion and Sediment Controls:
(as per Erosion and Sediment Control Guideline for Urban Construction)

The following construction schedule shall be implemented in order to minimize the erosion and sediment transport from the site.

a) Install silt fence.
b) Install mud mat.
c) Construct SWM facilities. The SWM facilities will act as a temporary sedimentation basin according to the Erosion and Sediment Control Plan. Construct a temporary outlet covered with geotextile and clear stone.
d) Rough grade the site, limiting grading and removal of vegetation to the designated areas.
e) Stockpile topsoil in a silt fence enclosed designated area and seed within one week, weather permitting, if it is to stand for an extended period of time (30 days or more).
f) Install all underground facilities and construct roadworks.
g) Place filter cloth cover on all catchbasins as per detail on Plan C-002.
h) Complete house construction and re-seed/sod as soon as possible.
i) Undertake periodic inspections and removal of sediments from all sediment control devices.
j) Once all construction has been completed and the site is stabilized, clean and remove temporary sedimentation traps and clean all sediment trapped in storm sewer inlets.

SEDIMENT & EROSION CONTROL NOTES:

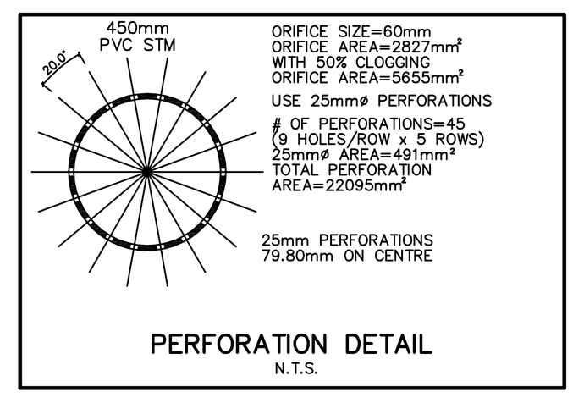
1. ALL SILT CONTROL AND EROSION PROTECTION DEVICES ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF FILLING AND SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL FILLING IS COMPLETE.
2. IF SITE CONSTRUCTION ACTIVITIES ARE INTERRUPTED AND/OR INACTIVITY EXCEEDS 30 DAYS ALL STRIPPED AND/OR BARE SOIL AREAS ARE TO BE STABILIZED BY SODDING/SEEDING/MULCHING OR OTHER APPROVED METHOD TO THE SATISFACTION OF THE TOWN OF MILTON.
3. ALL SILT CONTROLS ARE TO BE MAINTAINED AS REQUIRED & INSPECTED ON A REGULAR BASIS.
4. SILT CONTROLS ARE TO BE INSPECTED AFTER EVERY RAINFALL & ANY NECESSARY REPAIRS TO BE MADE IMMEDIATELY THEREAFTER.

SEQUENCE NOTES FOR PLACEMENT OF FILL:

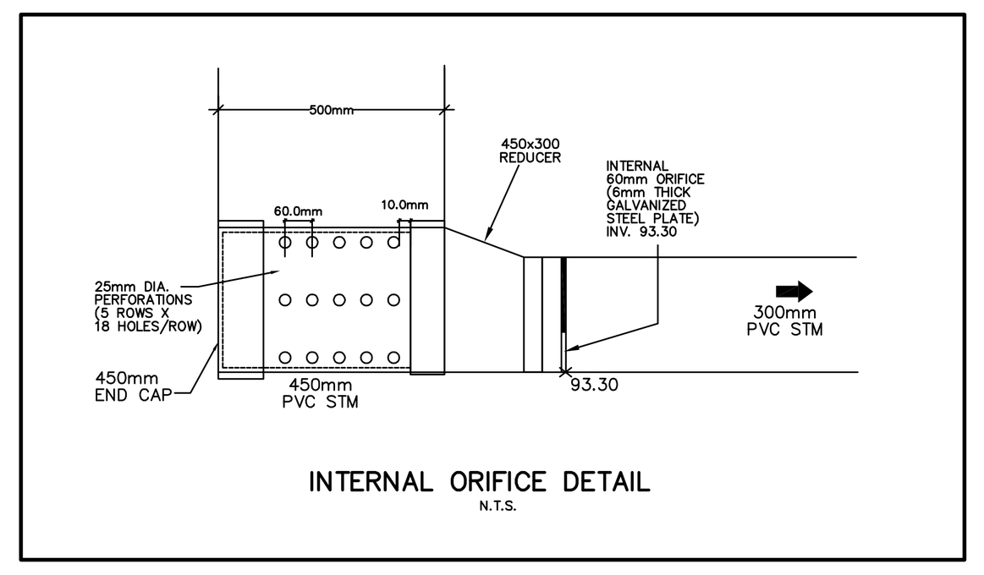
1. INSTALL SILT FENCE & MUD MAT.
2. INSTALL TEMPORARY SWALE & ROCK CHECK DAM.
3. IMPORT & PLACE FILL WITHIN GRADING LIMITS.

LEGEND

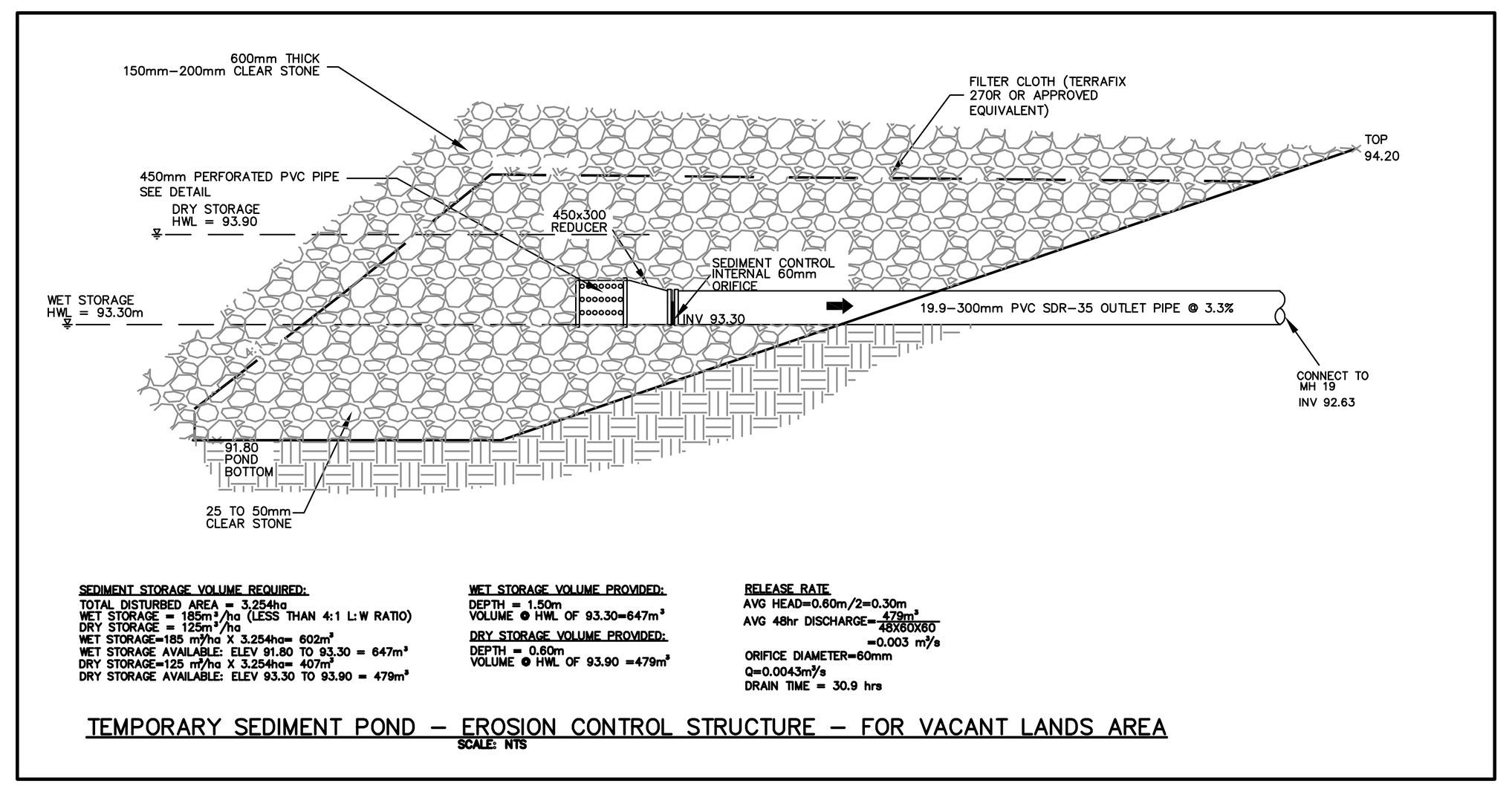
- CATCH BASIN
- DOUBLE CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED CATCH BASIN MANHOLE
- HEAVY DUTY SILT FENCE (RH 200.040)
- ROCK CHECK DAM (OPSD 219.210)
- INTERCEPTOR SWALE
- CONSTRUCTION MUD MAT
- 93.45 PRE-GRADE ELEVATION



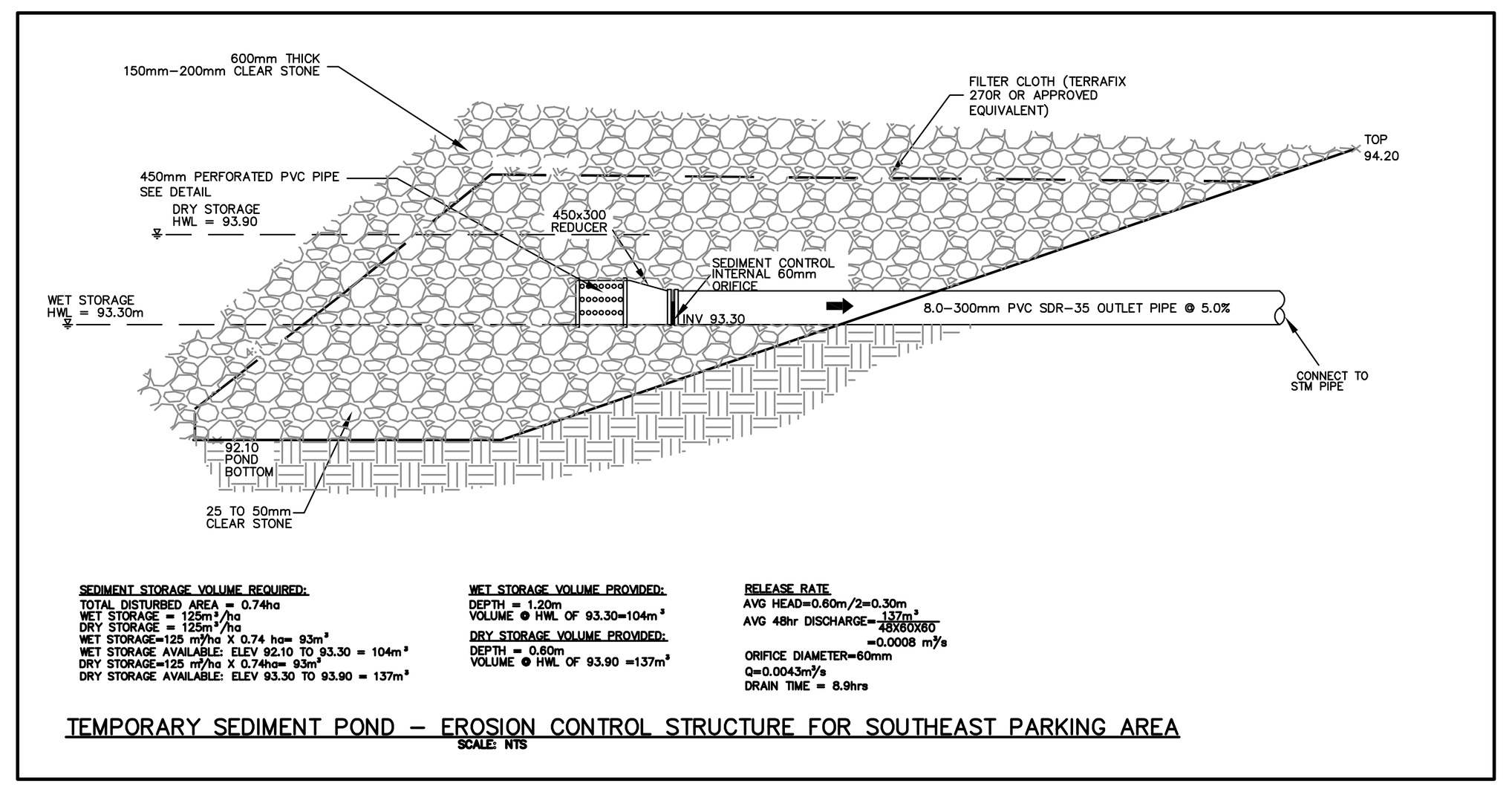
PERFORATION DETAIL
N.T.S.



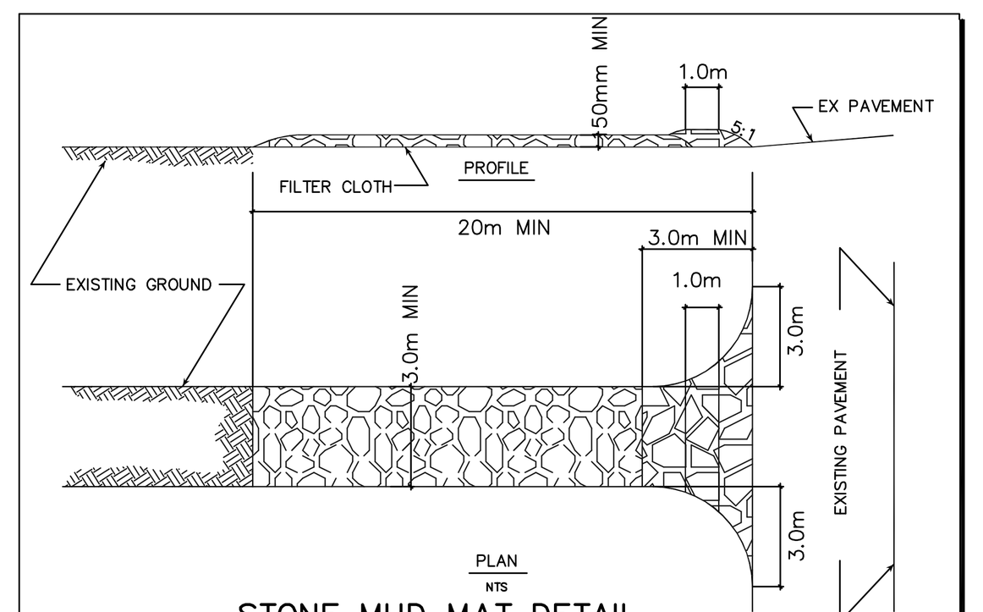
INTERNAL ORIFICE DETAIL
N.T.S.



TEMPORARY SEDIMENT POND – EROSION CONTROL STRUCTURE – FOR VACANT LANDS AREA



TEMPORARY SEDIMENT POND – EROSION CONTROL STRUCTURE FOR SOUTHEAST PARKING AREA



STONE MUD MAT DETAIL

STONE SIZE – USE 50mm STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

LENGTH – AS REQUIRED, BUT NOT LESS THAN 15m (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 10m MIN. LENGTH WOULD APPLY.)

THICKNESS – NOT LESS THAN 150mm.

WIDTH – 3m MINIMUM, BUT NOT LESS THAN THE WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURES.

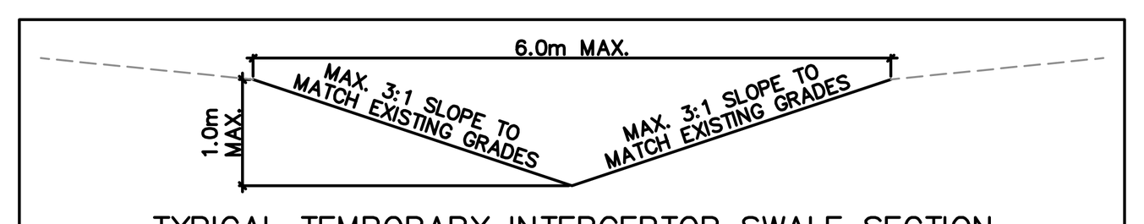
FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. FILTER CLOTH WILL NOT BE REQUIRED ON SINGLE FAMILY RESIDENCE LOT.

SURFACE WATER – ALL SURFACE WATER FLOWING OR DIRECTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

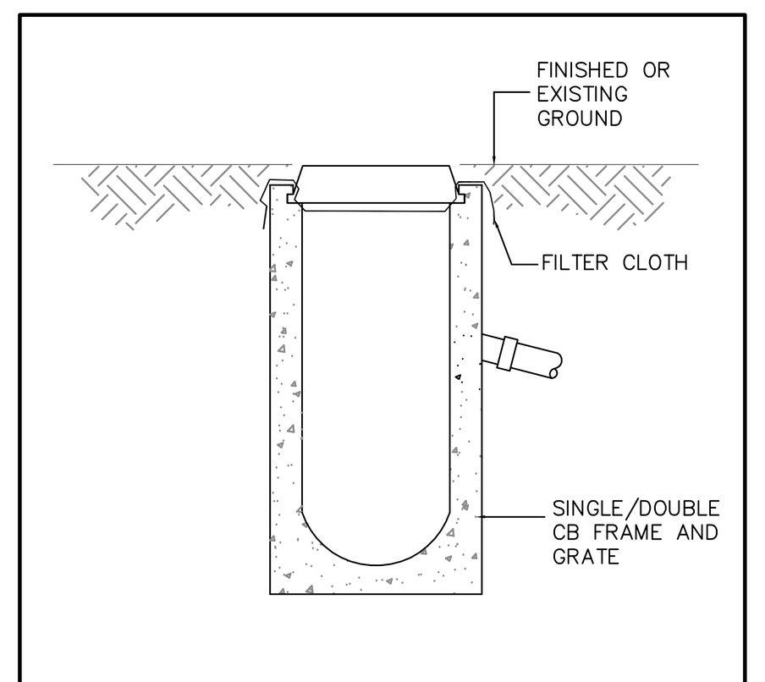
MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF WAY MUST BE REMOVED IMMEDIATELY.

WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

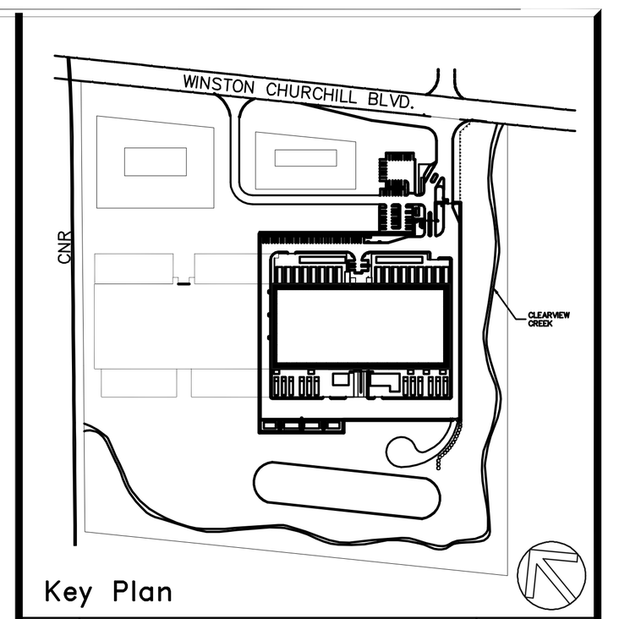


TYPICAL TEMPORARY INTERCEPTOR SWALE SECTION
SCALE 1:100



CATCHBASIN SEDIMENT TRAP
DETAIL 1
N.T.S.

SCALE BAR 1:600



Key Plan

Item	Description	Date
1	RESUBMISSION FOR SPA	MAR.4/16

ISSUES/REVISIONS

LICENSED PROFESSIONAL ENGINEER MAR.4/16 A. M. CANDARAS PROVINCE OF ONTARIO

PROJECT NORTH
PROJECT NORTH
TRUE NORTH

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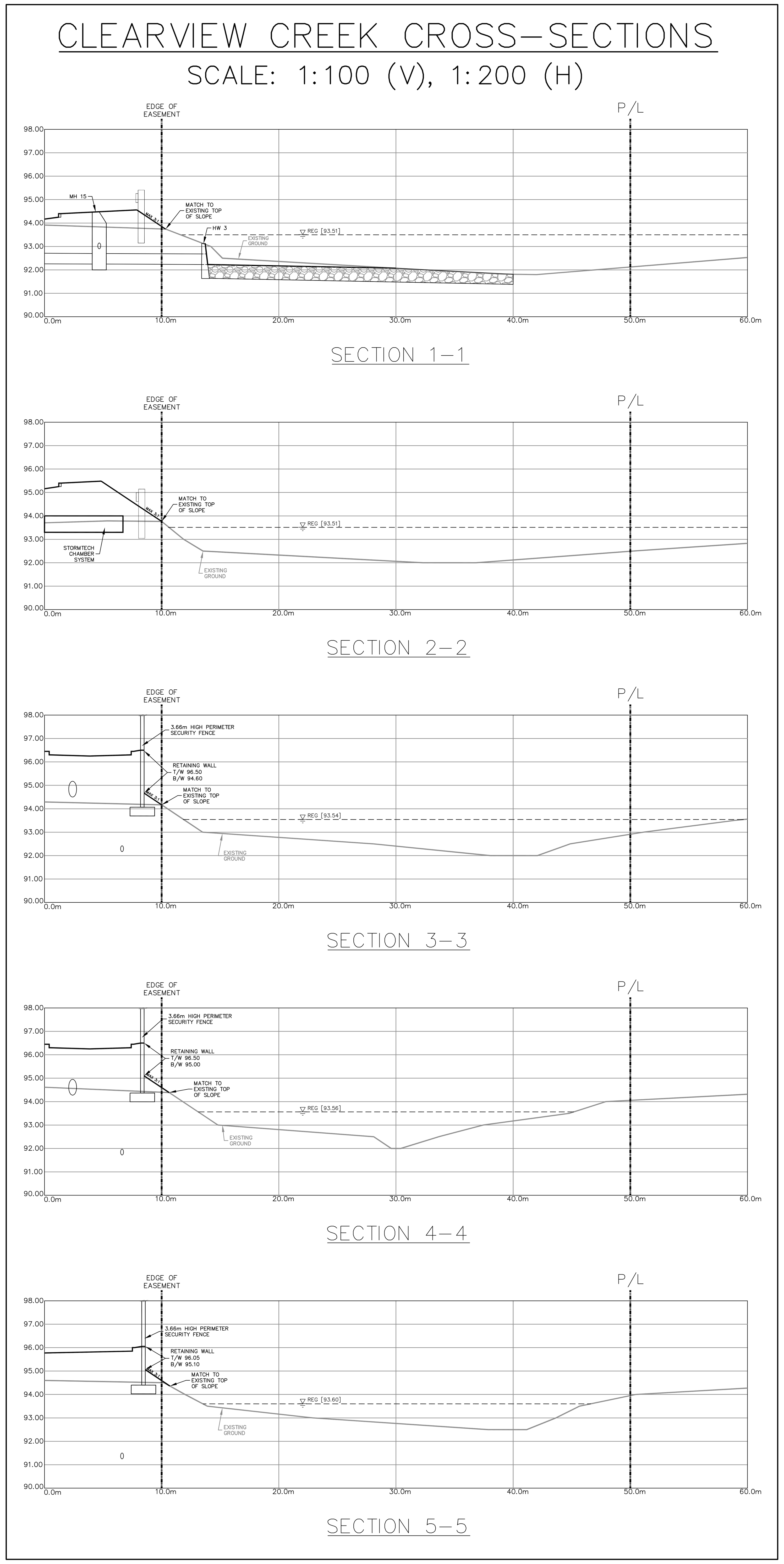
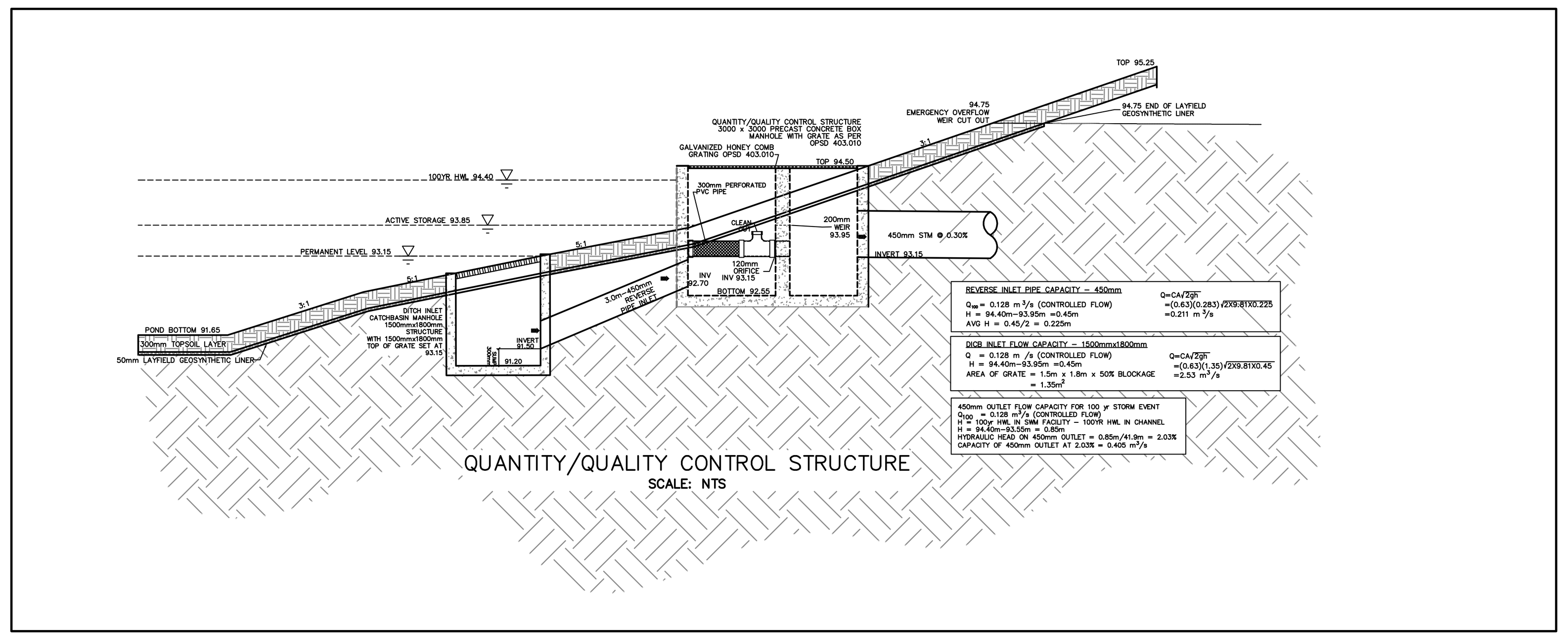
PROJECT OMEGA

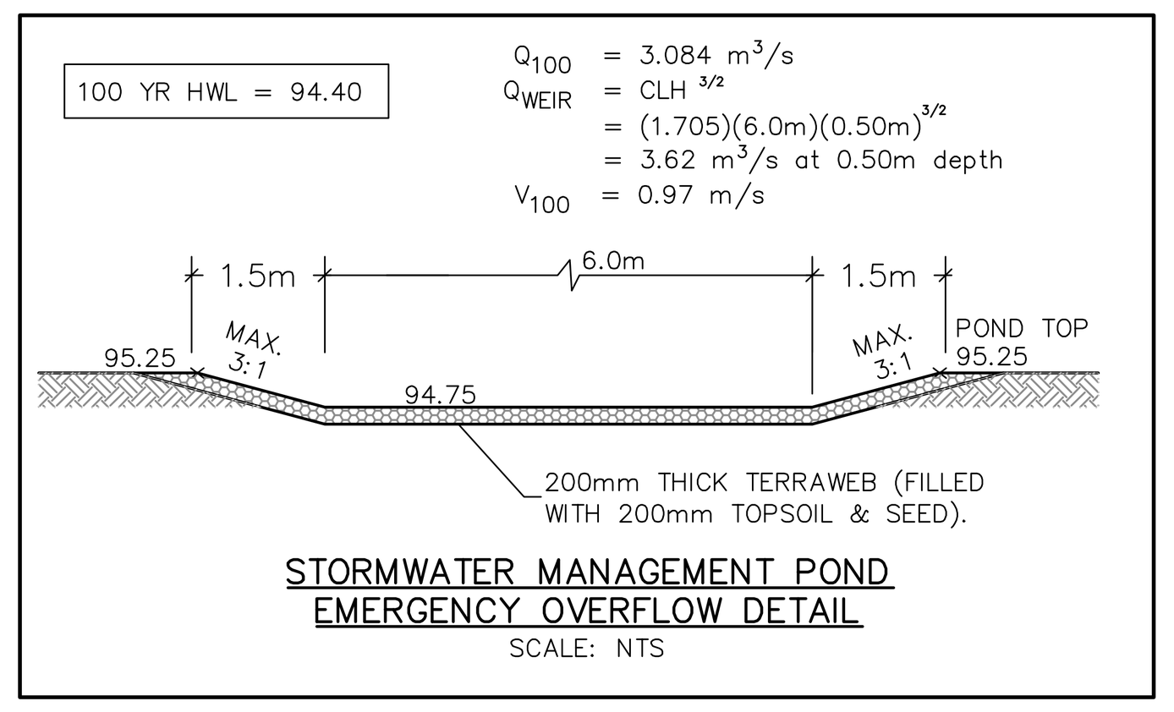
772 WINSTON CHURCHILL BLVD.
OAKVILLE, ONTARIO

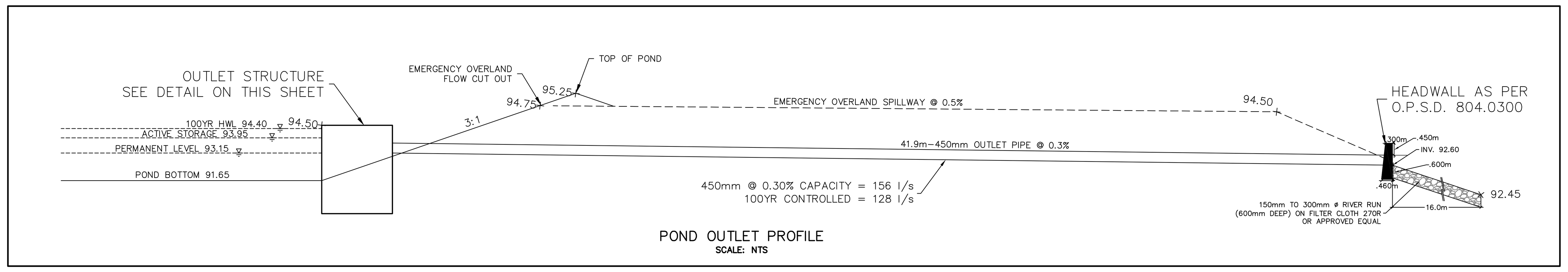
Sheet Title:
EROSION & SEDIMENT CONTROL PLAN

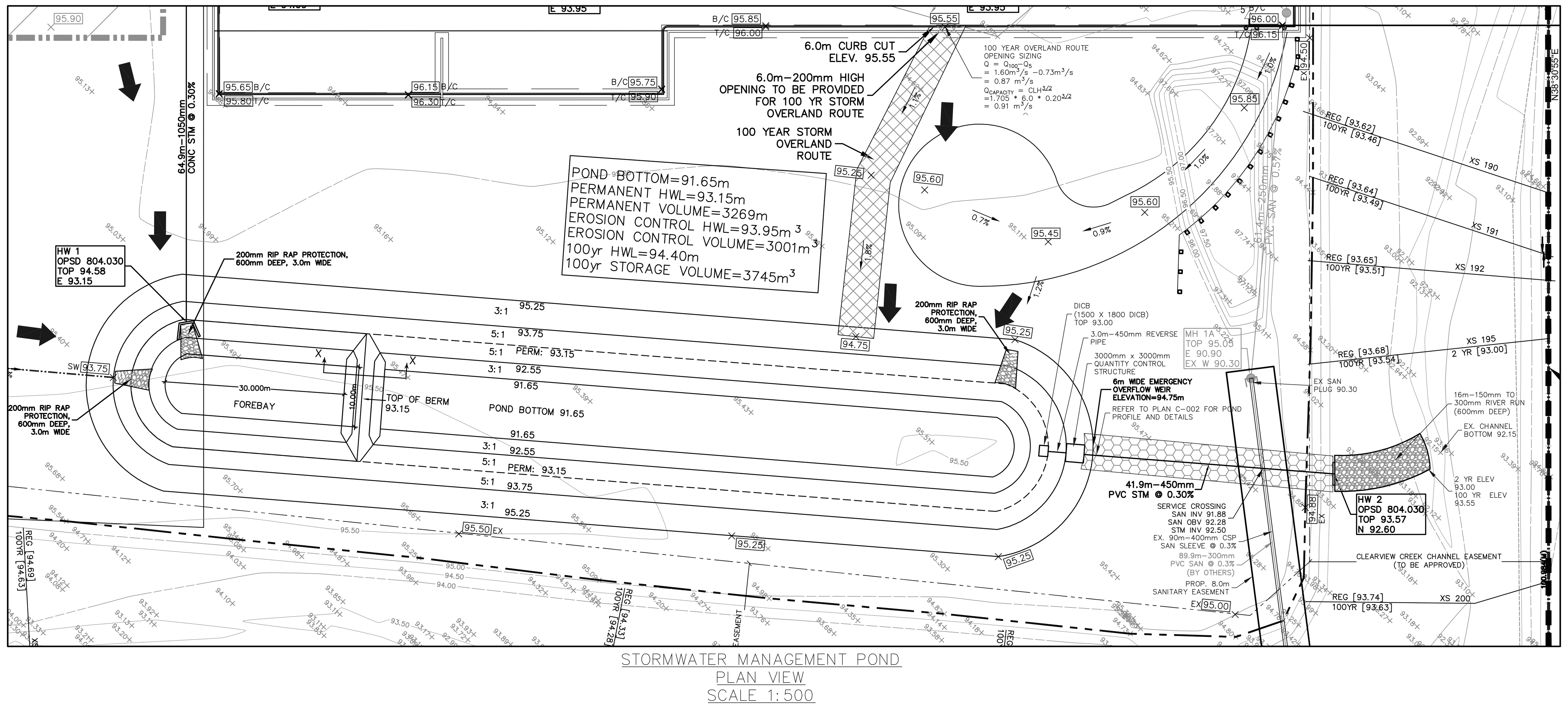
Scale:	1:600
Project Number:	1507
Drawing Number:	C-002

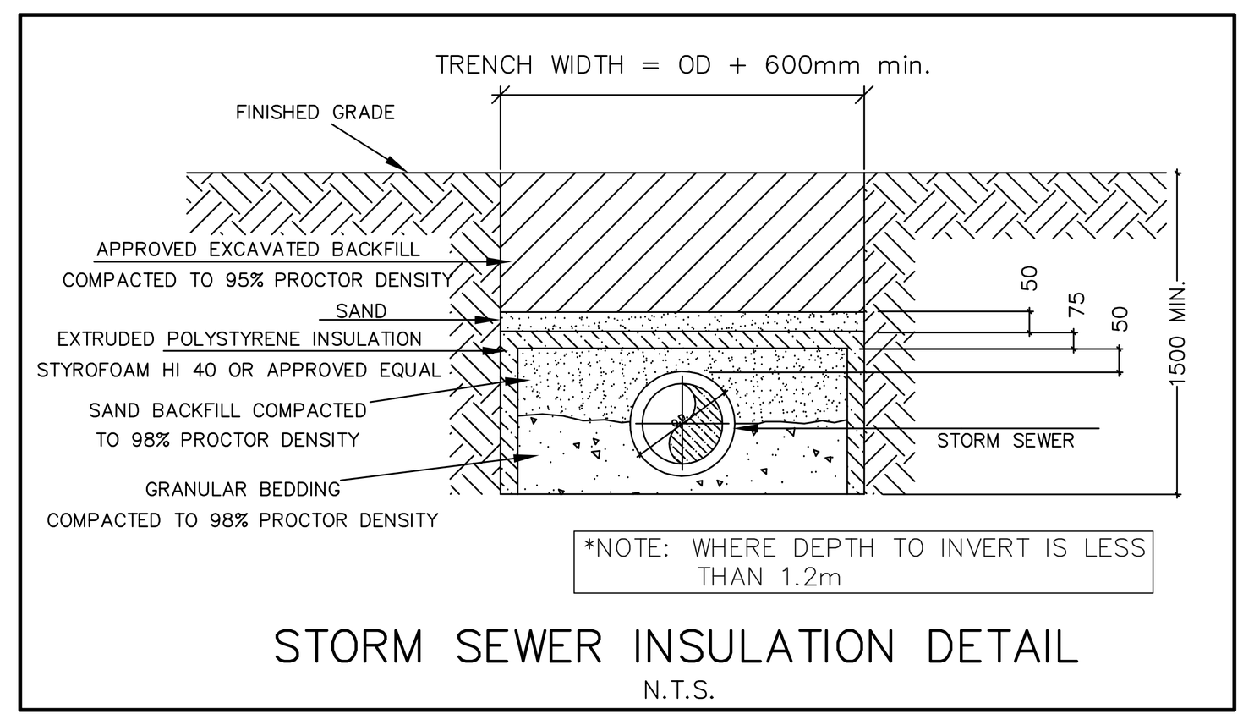


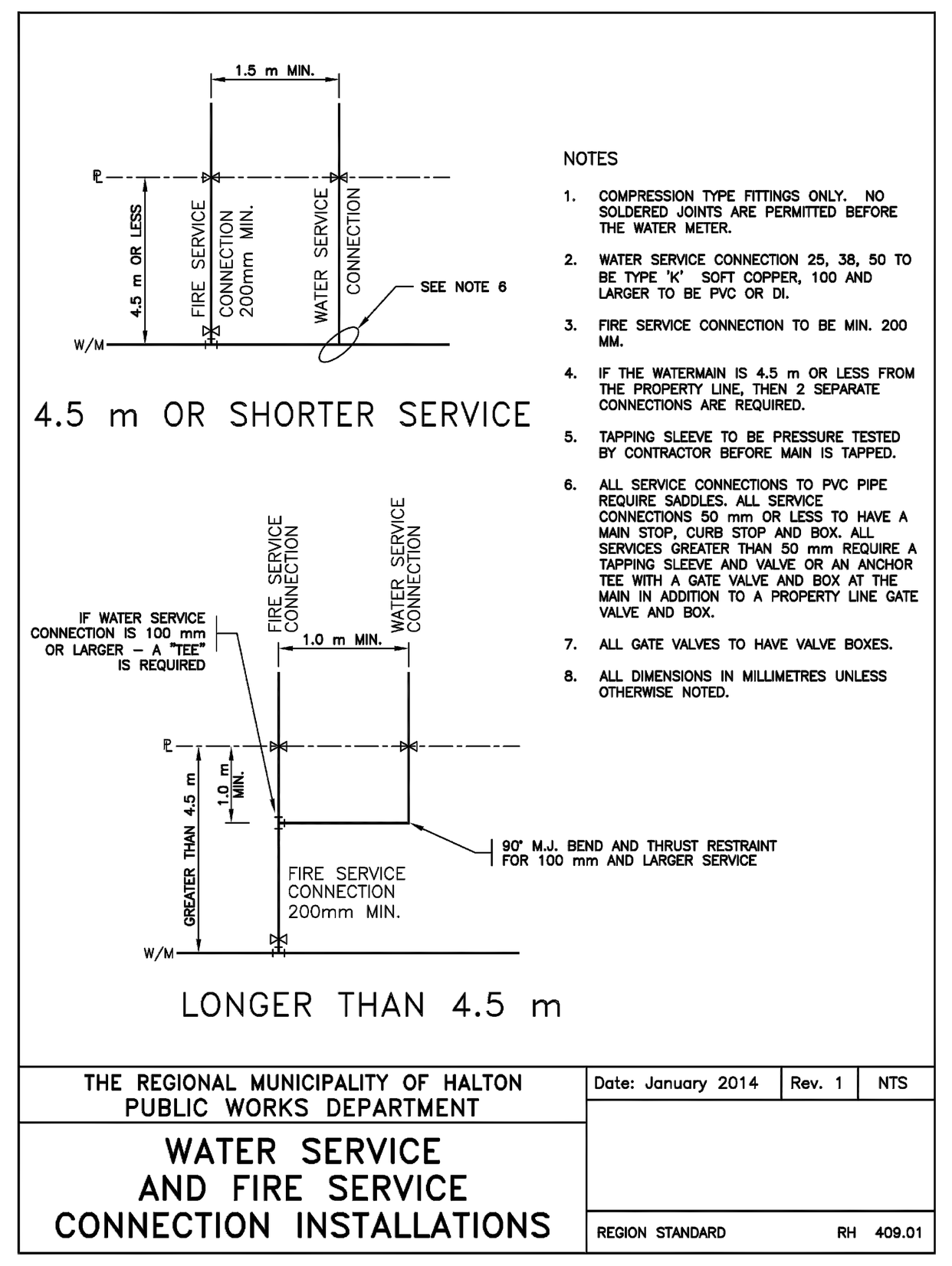


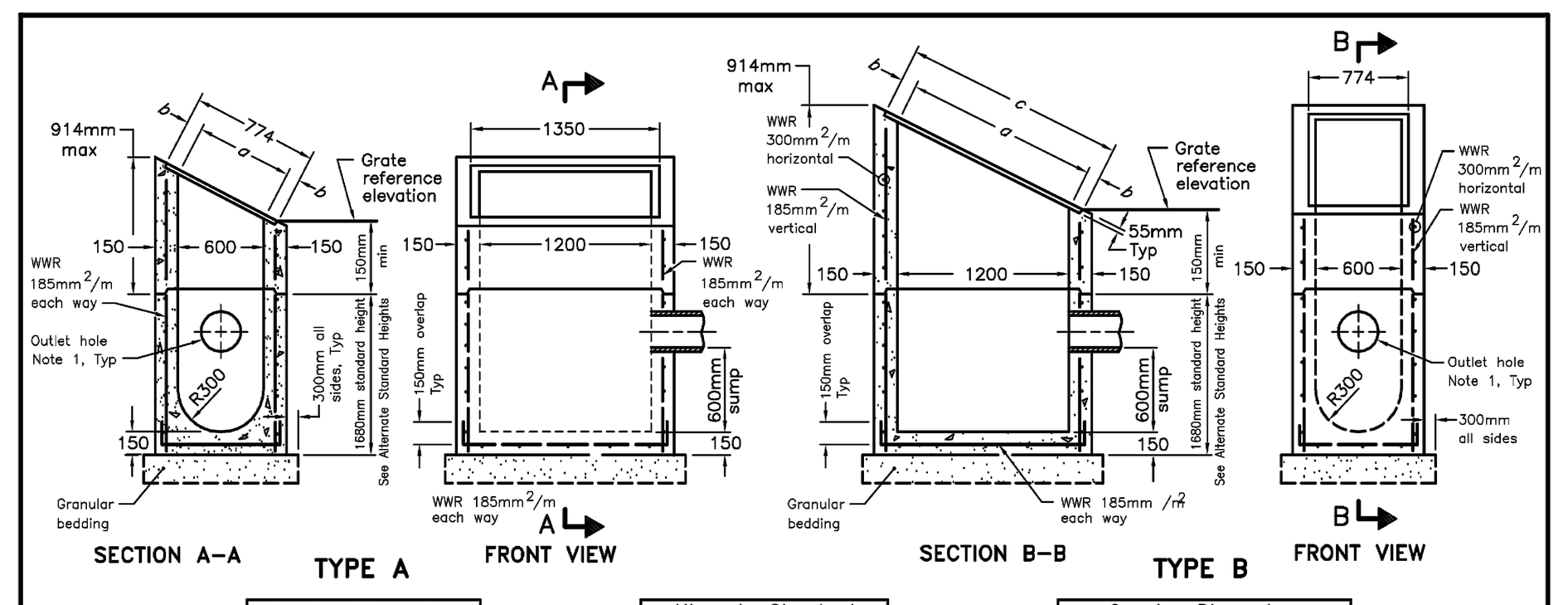












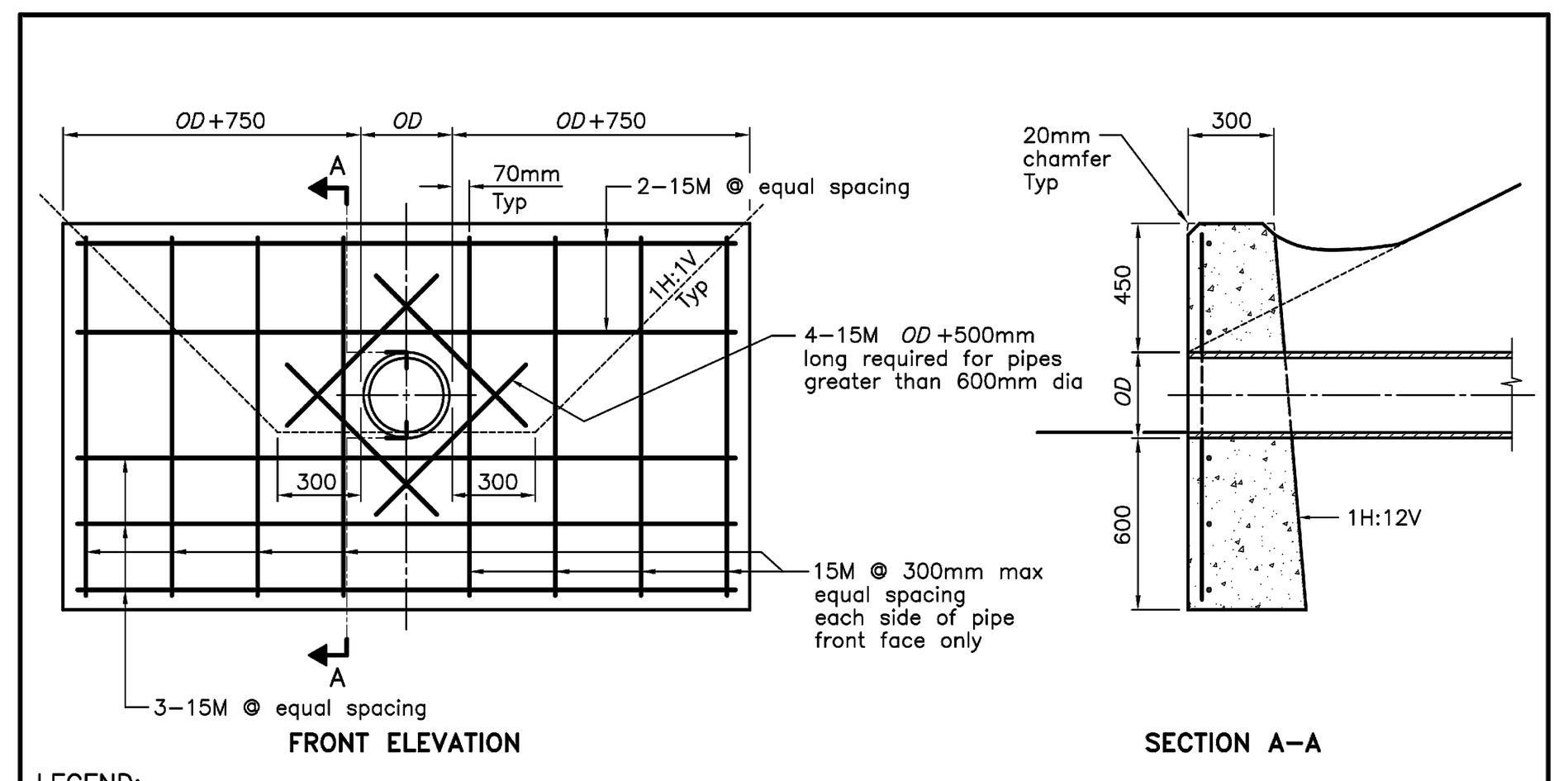
Opening Dimensions			
Grate Type	Slope	a	b
B	2H:1V	670	52
	3H:1V	632	71
	4H:1V	618	78
	HOR	600	87

Alternate Standard Heights	
Alternate	Dimension
A	1980
B	1520
C	1380

Opening Dimensions				
Grate Type	Slope	a	b	c
C	2H:1V	1341	66	1473
	3H:1V	1265	104	1473
	4H:1V	1237	118	1473
B	6H:1V	1216	65	1346
	HOR	1200	73	1346

NOTES:
1 Outlet hole size 525mm max diameter.
A Where inlet is placed across ditch and is accessible to vehicular traffic, grating slope shall be 6H:1V or flatter.
B Center reinforcing in wall and base slab ±25mm.
C Lap riser horizontal wires 300mm. Laps shall be placed at corners.
D Granular backfill shall be placed to a minimum thickness of 300mm all around the ditch inlet.
E Grating shall be according to OPSD 403.010.
F Pipe support shall be according to OPSD 708.020.
G All dimensions are nominal.
H All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 — Rev 3
PRECAST CONCRETE DITCH INLETS
600 x 1200mm
OPSD 705.040



LEGEND:
OD – Outside diameter of pipe

NOTES:
A This OPSD to be read in conjunction with OPSD 3940.150.
B If a steel grate is required, refer to OPSD 804.05.
C Class of concrete: 30MPa.
D Cover to reinforcing bars 75mm ± 20mm.
E All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2006 — Rev 1
CONCRETE HEADWALL
FOR PIPE LESS THAN 900mm DIAMETER
OPSD 804.030

STORM SEWER DESIGN SHEET

Q = C · A · I · N
Where
Q = PEAK FLOW (L/s)
A = AREA (ha)
I = RAINFALL INTENSITY (mm/hr)
C = RUNOFF COEFFICIENT

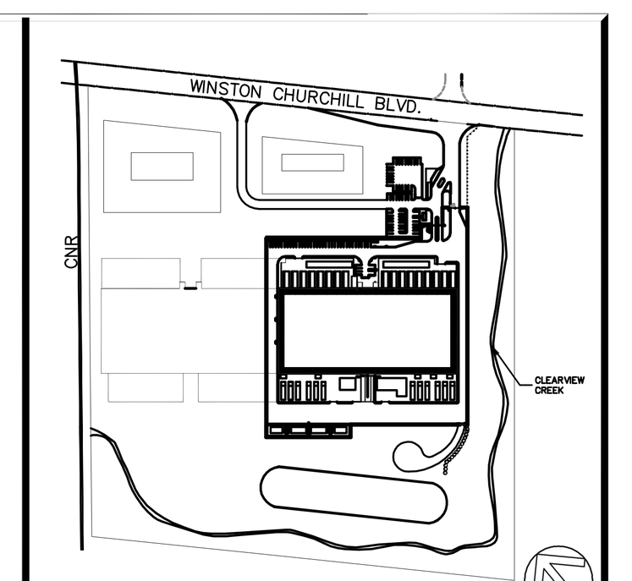
a.m.candaras associates inc.
consulting engineers
8551 Weston rd., suite 203
Woodbridge ont. L4L 9R4
905-850-8020 Fax 905-850-8099
Email: civil@amcai.com

5 Year Storm
a= 1170.0
b= 5.8
c= 0.843

$$I = \frac{a}{(t+b)^c}$$

LOCATION			AREAS @ C							SEWER DATA						
SUBCATCHMENT ID	FROM	TO	0.25	0.90	INDIV. 2.778*AC	ACCUM. 2.778*AC	TIME OF CONC.	RAINFALL INTENSITY I	PEAK FLOW (L/s)	DIAMETER (mm)	SLOPE (%)	LENGTH (m)	CAPACITY (L/s) n=	VELOCITY (m/s)	TIME OF FLOW (min)	% FULL
WEST PORTION																
	DCB 10	MH 6		0.35	0.88	0.88	10.00	112.65	98.58	450	0.30	30.1	156.2	0.98	0.51	63.1%
(1)	STM PLUG 1	MH 6		0.62					156.00	375	1.00	28.5	175.3	1.59	0.30	89.0%
	DCB 9	PIPE		0.27	0.68	0.68	10.00	112.65	76.04	300	1.00	3.5	96.7	1.37	0.04	78.6%
	CB 8	PIPE		0.20	0.50	0.50	10.00	112.65	56.33	250	1.00	5.9	59.5	1.21	0.08	94.7%
	MH 6	MH 5				2.05	10.51	109.65	380.80	675	0.30	98.1	460.4	1.29	1.27	82.7%
	CB 7	PIPE		0.02	0.05	0.05	10.00	112.65	5.63	250	1.00	2.7	59.5	1.21	0.04	9.5%
	CB 6	PIPE		0.05	0.13	0.13	10.00	112.65	14.08	250	1.00	2.8	59.5	1.21	0.04	23.7%
	MH 5	MH 4				2.23	11.78	102.89	384.95	675	0.30	58.5	460.4	1.29	0.76	83.6%
	CB 5	PIPE		0.02	0.05	0.05	10.00	112.65	5.63	250	1.00	2.6	59.5	1.21	0.04	9.5%
	MH 4	MH 3				2.28	12.54	99.27	381.87	675	0.30	75.7	460.4	1.29	0.98	82.9%
	DCB 4	PIPE		0.39	0.98	0.98	10.00	112.65	200.00	450	0.75	7.4	246.9	1.55	0.08	81.0%
	MH 3	MH 2				3.25	13.52	94.98	464.72	750	0.30	91.1	609.8	1.38	1.10	76.2%
(2)	TRENCH DRAIN 3	MH 2		0.03	0.08	0.08	10.00	112.65	8.45	375	0.30	28.5	96.0	0.87	0.55	8.8%
(1)	STM PLUG 2	MH 2		0.62					156.00	375	1.00	28.8	175.3	1.59	0.30	89.0%
	DCB 2	PIPE		0.32	0.80	0.80	10.00	112.65	90.13	375	0.50	6.3	124.0	1.12	0.09	72.7%
	DCB 1	PIPE		0.32	0.80	0.80	10.00	112.65	90.13	375	0.50	6.2	124.0	1.12	0.09	72.7%
	MH 2	MH 1				4.93	14.62	90.63	758.37	900	0.30	88.2	991.5	1.56	0.94	76.5%
(3)	INTERIM DICB	MH 1	1.93	0.13	1.67	1.67	10.00	112.65	187.61	525	0.50	32.0	304.1	1.40	0.38	61.7%
	MH 1	HW 1				6.59	15.56	87.22	886.86	1050	0.30	64.9	1495.7	1.73	0.63	59.3%
	DCB 19	MH 12		0.25	0.63	0.63	10.00	112.65	70.41	375	0.30	30.1	96.0	0.87	0.58	73.3%
(1)	STM PLUG 3	MH 12		0.62					156.00	375	1.00	28.2	175.3	1.59	0.30	89.0%
	DCB 18	PIPE		0.27	0.68	0.68	10.00	112.65	76.04	300	1.00	3.3	96.7	1.37	0.04	78.6%
	MH 12	MH 11				1.30	10.58	109.27	298.07	675	0.30	98.5	460.4	1.29	1.28	64.7%
	DCB 17	MH 11		0.22	0.55	0.55	10.00	112.65	61.96	300	1.00	3.6	96.7	1.37	0.04	64.1%
	MH 11	MH 10				1.85	11.85	102.54	345.71	675	0.30	58.0	460.4	1.29	0.75	75.1%
	CB 16	MH 10		0.05	0.13	0.13	10.00	112.65	14.08	250	1.00	1.7	59.5	1.21	0.02	23.7%
	CB 15	PIPE		0.02	0.05	0.05	10.00	112.65	5.63	250	1.00	1.7	59.5	1.21	0.02	9.5%
	MH 10	MH 9				2.03	12.60	98.98	356.44	675	0.30	76.0	460.4	1.29	0.98	77.4%
	CB 14	PIPE		0.10	0.25	0.25	10.00	112.65	28.16	250	1.00	4.7	59.5	1.21	0.06	47.4%
	DCB 13	PIPE		0.24	0.60	0.60	10.00	112.65	67.59	300	1.00	7.5	96.7	1.37	0.09	69.9%
	MH 9	MH 8				2.88	13.59	94.70	428.28	750	0.30	99.6	609.8	1.38	1.20	70.2%
	CB 12	MH 8		0.08	0.20	0.20	10.00	112.65	22.53	250	0.30	30.0	32.6	0.66	0.75	69.2%
(1)	STM PLUG 4	MH 8		0.62					156.00	375	1.00	28.8	175.3	1.59	0.30	89.0%
	CB 11	PIPE		0.18	0.45	0.45	10.00	112.65	50.70	250	1.00	6.3	59.5	1.21	0.09	85.2%
	MH 8	MH 1				3.53	14.79	89.99	629.23	825	0.30	47.6	786.2	1.47	0.54	80.0%
	MH 1	HW 1				8.45	15.56	87.22	1361.09	1050	0.30	64.9	1495.7	1.73	0.63	91.0%
SOUTHEAST PORTION																
	CB 22	MH 18		0.20	0.50	0.50	10.00	112.65	56.33	250	1.00	13.0	59.5	1.21	0.18	94.7%
	CB 21	MH 18		0.10	0.25	0.25	10.00	112.65	28.16	250	1.00	34.4	59.5	1.21	0.47	47.4%
(4)	MH 18	MH 17				0.75	10.47	109.86	82.40	375	0.50	29.9	124.0	1.12	0.44	66.5%
(5)	MH 17	MH 16 (STC 1500)							56.00	250	2.00	6.0	84.1	1.71	0.06	66.6%
	MH 16	MH 15							56.00	250	1.00	21.2	59.5	1.21	0.29	94.2%
(6)	INTERIM DICB 2	MH 19	3.25						139.00	450	0.30	38.8	156.2	0.98	0.66	89.0%
	MH 19	MH 15							139.00	450	0.30	68.9	156.2	0.98	1.17	89.0%
	MH 15	HW 3							195.00	525	0.30	8.1	235.6	1.09	0.12	82.8%

REMARKS:
(1) Controlled roof flow of 156 l/s **(2)** Trench drain for loading dock area **(3)** Interim DICB to be used until Module 2 is built **(4)** Parking area catch basins to be controlled to 56 l/s by 150mm orifice tube
(5) 100 year controlled flow from SWMHYMO is 48 l/s **(6)** Interim DICB to convey flows from vacant lands at a pre-development 100 year flow rate of 139 l/s as per SWMHYMO output



Key Plan

Item	Description	Date
2	RESUBMISSION FOR SPA	MAR.4/16
1	ISSUED FOR SITE PLAN APPROVAL	NOV.11/15

ISSUES/REVISIONS

LICENSED PROFESSIONAL ENGINEER — MAR.4/16 — A. M. CANDARAS — PROVINCE OF ONTARIO

PROJECT NORTH

Check and verify all dimensions and report any discrepancies to the Consultant whose seal is affixed to this drawing. This drawing is not to be scaled for the purpose of verifying dimensions.

This drawing shall not be used for construction purposes until signed and dated in the space below by the above mentioned Consultant.

Issued For Construction .... Date ....

HHAngus
HHAngus & Associates Limited Consulting Engineers
1127 Leslie Street, Toronto, ON, M3C 2J6 Canada
www.hhangus.com | T 416 443 8200 | F 416 443 8290

PROJECT OMEGA

772 WINSTON CHURCHILL BLVD.
OAKVILLE, ONTARIO

Sheet Title:
CONSTRUCTION NOTES AND DETAILS PLAN

Scale: 1:500
Project Number: 1507
Drawing Number: C–003

Appendix C – Qualifications of Assessors

Amanda Catenaro, M.E.Sc., P.Geo., QP_{ESA} (Project Manager)

Amanda Catenaro graduated from McMaster University in 2012 with a Bachelor of Science degree in Environmental Science, specialized in Hydrogeology and Climatology. She completed her Master of Environmental Science Degree from the University of Toronto in 2013. Ms. Catenaro has worked on a number of Phase One and Two environmental site assessments, delineation programs, ex-situ and in-situ remediation projects, and peer reviews since joining EXP Services Inc. in 2013. Ms. Catenaro is a Professional Geologist (P.Geo.) in Ontario and is a Qualified Person (QP) for environmental site assessments under Ontario Regulation 153/04.

Ms. Catenaro has international experience working on environmental projects in the United Kingdom and United States of America, including undertaking desk studies, risk assessments, and remediation projects (strategy development, design, implementation and validation). She has closed-out projects in a variety of specialized sectors such as transportation, highway, rail, and water schemes.

Jon Keates, B.Sc, AdvDip (Environmental Technician)

Jon Keates graduated from the University of Waterloo in 2019 with a Bachelor of Science in Environmental Science and obtained an Advanced Diploma in Environmental Technology from Durham College in 2020. Since starting at EXP January 18, 2021, he has been involved in groundwater monitoring, borehole logging, test pitting, well installations, and Phase One and Two Environmental Site Assessments.

Sarah DiBattista, B.Sc, M.E.Sc. (Environmental Technician)

Sarah DiBattista graduated from the University of Toronto with an Honours Bachelor of Science, double majoring in Nutrition and Environment and Health and minoring in Environmental Studies. Following her graduation in 2019, Ms. DiBattista earned her Master of Environmental Science from the University of Toronto in 2021. Since joining EXP in January 2021, her fieldwork experiences have included overseeing the drilling of boreholes and installation of monitoring wells, the development and monitoring of said wells, conducting Phase One and Two Environmental Site Assessments, and aiding in project reporting efforts.

Appendix D – Sampling and Analysis Plan

Memorandum

Date: October 19, 2021

To: Mike Luong

From: Amanda Catenaro

CC:

RE: Soil and Sediment Sampling Program, 722-772 Winston Churchill Boulevard, Oakville, Ontario

Project Number:	**GTR-00258896-E0-C100**
Date(s) of Field Work:	October 19, 2021
Site Address:	**722-772 Winston Churchill Boulevard, Oakville, Ontario**
PM Contact:	**Amanda Catenaro, 905-695-3217 x 3684 or cell 647-937-700**
Laboratory:	**AGAT Laboratories, Michael Conversano, 905-712-5074**

LOCK BOX CODE FOR SITE ENTRY - 0000

PROJECT OBJECTIVES:

In order to upgrade the current work for the site to O.Reg. 153/04 Standards, additional delineation sampling and duplicate samples must be obtained. The following outstanding work is required:

- Horizontally delineate an organochlorine (OC) pesticides previously identified in stockpile #2, as shown on the attached figure. Also – resample this location to determine if the exceedance is present.
- Assess off-site concentrations of metals in the sediment (upstream and downstream) as well as at the central portion of the on-site creek.
- Collect field duplicates for groundwater for metals and OC pesticides in any of the on-site wells (any of MW101, MW102, MW103, MW110) (we just need duplicate samples for QA/QC purposes)

Prior to Attending Site

1) Complete the Covid-19 screening form found at the following website:
https://covid-19.ontario.ca/screening/worker/

Email the completed form to samiya.tabassum@exp.com .

2) Complete the EXP ENV - Field Level Risk Assessment (office.com)

…2

3) Sign the project specific HASP form and save in the project folder

SCOPE OF WORK:

Soil and Sediment Sampling

All samples obtained will be "grab" samples, directly obtained from an auger, shovel, or hand trowel. Given that the proposed depth of excavation is ideally 0.3 -0.6 metres below ground surface (mbgs), please do your best to get as deep as possible. This information is summarized in tabular form below.

Table 1: Soil and Sediment Sampling Summary

Sampling Location (Grab Sample)	Depth of Sample	Sampling Analysis
Soil Samples		
GS1 + duplicate	1 sample from 0.3-0.6 mbgs 1 duplicate from 0.3-0.6 mbgs	OCPs
GS2	1 sample from 0.3-0.6 mbgs	OCPs
GS3	1 sample from 0.3-0.6 mbgs	OCPs
SP2-2021	1 sample from 0.3-0.6 mbgs (put on separate chain on hold)	OCPs
Sediment Samples		
SED101	1 sample from surficial soil (0.1-0.5 mbgs)	Metals
SED102 + duplicate	1 sample from surficial soil (0.1-0.5 mbgs) 1 duplicate from surficial soil	Metals
SED103	1 sample from surficial soil (0.1-0.5 mbgs)	Metals

Groundwater Sampling

- One of the following wells will be sampled using **low flow techniques**; MW101, MW102, MW103, MW110. Please record stabilized field parameters for each monitor on sample form. Groundwater samples will be retrieved from each of the newly installed monitors, using either a peristaltic pump or bladder pump. Use proper sampling techniques to avoid introducing contaminants into the groundwater sample. Use proper decontamination techniques between monitors.

- If no obvious impacts are noted, purged water can be disposed onto a paved area of the site away from any catch basins.

- Groundwater samples will be collected from the groundwater monitoring wells using new clean tubing. Collected groundwater samples will be submitted to AGAT for analysis of metals and OC Pesticides,

- Please communicate with the PM to arrange the sample pickup details for the groundwater samples. Groundwater samples should be submitted on a **regular** turn-around time. Please ensure samples are properly preserved with ice in a storage cooler maintained below 10ºC.

Table 2: Groundwater Sampling Summary

Monitor ID	Screen Interval	Purpose	Parameters
MW101, MW102, MW103, MW110 (whichever you can find, if any) Any 1 of these is okay	0.89 to 3.89 mbgs at MW110, 1.48 to 4.48 mbgs at MW101, 1.44 to 4.44 mbgs at MW102 and 0.99 to 3.99 mbgs at MW103	- Collect duplicates for update to O.Reg 153/04 Standards	Metals, OCPs

Chain of Custody Information

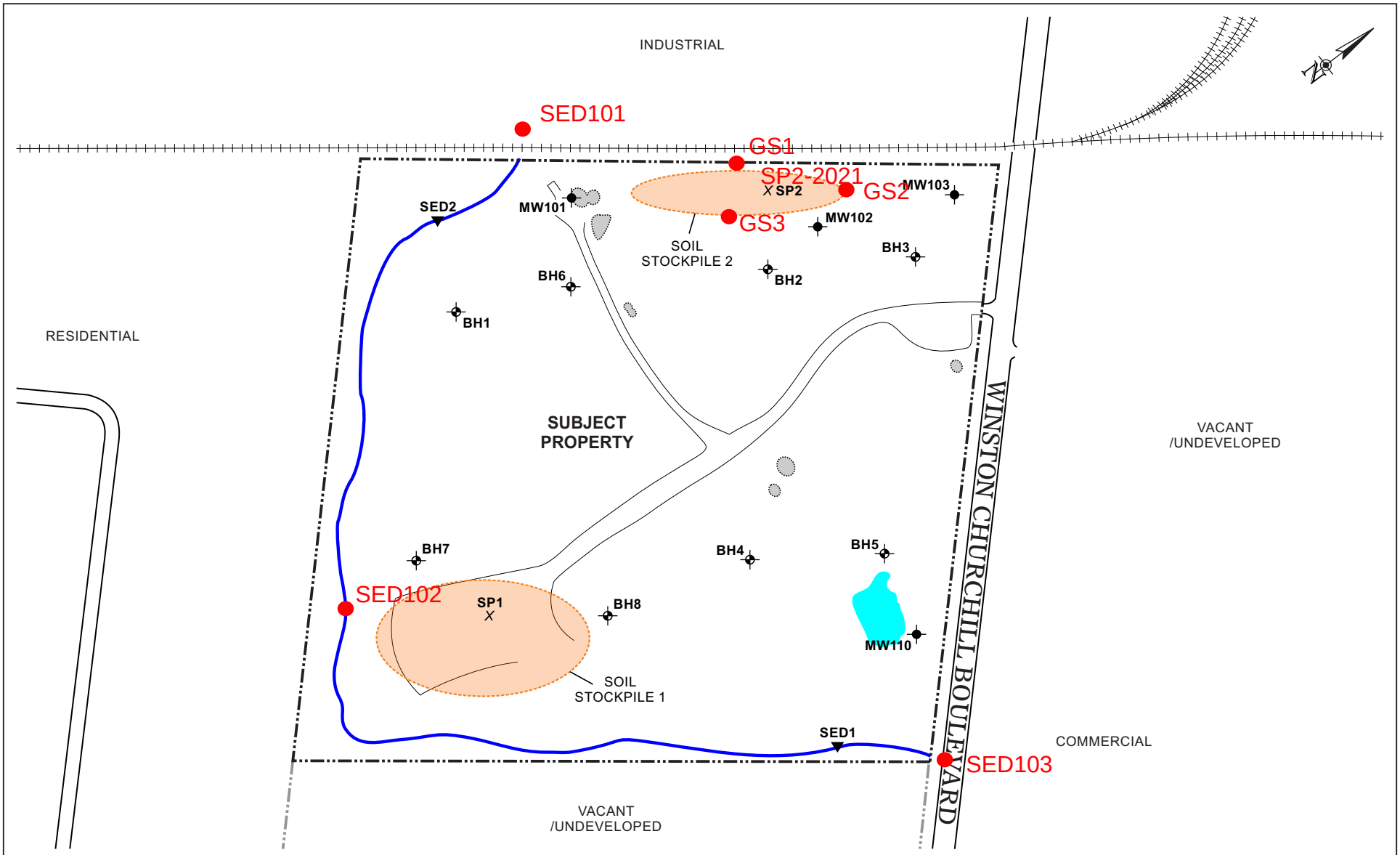
- Project number **GTR-00258896-E0-C100**
- Soil Analysis – OCPs
- Sediment Analysis – Metals
- Groundwater Analysis – Metals and OCPs
- Table 8 SCS – RPI and medium to fine textured soils
- Regular 4 day TAT
- Please drop off samples at AGAT after sampling.

Health and Safety

- Review attached HASP
- Report any incidents, including near misses, to PM.

References

EXP Standard Operating Procedure, *Decontamination, version 2.0*, revision date June 22, 2017
EXP Standard Operating Procedure, *Field Screening, version 2.0*, revision date June 22, 2017
EXP Standard Operating Procedure, *Field QA/QC Programs, version 2.0*, revision date June 22, 2017
EXP Standard Operating Procedure, *Soil Descriptions, version 2.0*, revision date June 22, 2017
EXP Standard Operating Procedure, *Subsurface Soil Sampling, version 2.0*, revision date June 22, 2017



SCALE:

0 50 100m

SOURCE:

BASED ON GOOGLE EARTH IMAGE, DATED AUG. 6, 2018 AND FIELD MEASUREMENTS BY EXP STAFF

LEGEND:

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- RAILWAYS
- TEST HOLE WITH MONITOR (FORWARD ENGINEERING, 2016)
- TEST HOLE (EXP, 2020)
- SEDIMENT SAMPLES (EXP, 2020)
- STOCKPILE SAMPLES (EXP, 2020)
- STOCKPILE LOCATION
- GRAVEL/AGGREGATE STOCKPILE
- CLEARVIEW CREEK

DRAWN BY	CHECKED BY
J.D.H.	T.T.

SITE PLAN

FIGURE 2

772 WINSTON CHURCHILL BOULEVARD
OAKVILLE , ONTARIO

PROJECT NUMBER: 258896 | DATE: APRIL 2020

258896-SITE PLAN-APR20

Appendix E – Borehole Logs

Log of Borehole BH1

Project No. MRK-00258896-A0 Drawing No. 1

Project: Due Diligence Phase II Environmental Site Assessment/Preliminary Geotechnical Investigation Sheet No. 1 of 1

Location: 772 Winston Churchill Boulevard, Oakville, Ontario

4816098.051 m N, 609739.501 m E

Date Drilled: March 16, 2020

Drill Type: CME 75, track mount

Datum:

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
			95.45	0
		Brown clayey silt **TOPSOIL**, some gravel and sand, rootlets, moist, no odour, no staining.	~95.4	
		Brown clayey **SILT**, some gravel and sand, moist, no odour, no staining.	~94.7	1
		Brown **SAND**, some silt, trace gravel, moist, no odour, no staining.	~94.2	
		Grey to brown sandy **SILT**, some gravel, some clay from 1.52 mbgs, trace cobbles from 1.52 mbgs, moist, no odour, no staining.	~93.6	2
		Grey to brown sandy silt **TILL**, some clay, trace to some gravel, trace cobbles, grey shale cobbles from 2.85 mbgs, moist, wet from 2.29 to 2.37 mbgs, no odour, no staining.	~92.4	3
		Grey weathered **SHALE** bedrock.	~92.1	
		End of test hole at 3.35 mbgs.		4
		NOTE: All vapour readings taken using an RKI Eagle 2 petroleum hydrocarbon detector.		5
				6
				7
				8
				9
				10
				11
				12

N Value: 20, 40, 60

Combustible Vapour Reading (ppm): 25, 50, 75

0PPM

0PPM

0PPM

50-3"

0PPM

50-5"

SAMPLES	% RECOV	SAMPLE ID	ANALYSIS
	30	SS1	PAH PEST
	55	SS2	ING
	60	SS3	
	30	SS4	PHC VOC
	10	SS5	

ENVIRONMENTAL-EXP MRK-00258896-A0_OAKVILLE, 772 WINSTON CHURCHILL BLVD.GPJ 4/3/20

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

exp Services Inc.
Markham, Ontario
Telephone: 905.695.3217

Log of Borehole BH2

Project No. MRK-00258896-A0 Drawing No. 2

Project: Due Diligence Phase II Environmental Site Assessment/Preliminary Geotechnical Investigation Sheet No. 1 of 1

Location: 772 Winston Churchill Boulevard, Oakville, Ontario

4816276.444 m N, 609813.041 m E

Date Drilled: March 16, 2020

Drill Type: CME 75, track mount

Datum:

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
▼			94.60	0
		8 cm of brown sand **TOPSOIL**, trace gravel, rootlets, wet, no odour, no staining.	~94.5	
		Brown **SAND**, some gravel, wet, no odour, no staining.	~94.1	
		Grey sandy silt **TILL**, some gravel, trace cobbles, shale cobbles from 2.29 mbgs, moist, no odour, no staining.	~93.4	1
				2
		Grey weathered **SHALE** bedrock.	~91.9 ~91.7	3
		End of test hole at 2.90 mbgs.		4
		NOTE: All vapour readings taken using an RKI Eagle 2 petroleum hydrocarbon detector.		5
				6
				7
				8
				9
				10
				11
				12

N Value: 20, 40, 60

Combustible Vapour Reading (ppm): 25, 50, 75

SAMPLES	% RECOV	SAMPLE ID	ANALYSIS
	60	SS1	PAH PEST ING
	70	SS2	PHC VOC
	50	SS3	
	30	SS4	
	10	SS5	

0PPM

0PPM

36; 50-5"

0PPM

50-2"

50-3"

0PPM

ENVIRONMENTAL-EXP MRK-00258896-A0_OAKVILLE, 772 WINSTON CHURCHILL BLVD.GPJ 4/3/20

Time	Water Level (m)	Depth to Cave (m)
on completion	0.46	

exp Services Inc.
Markham, Ontario
Telephone: 905.695.3217

Log of Borehole BH3

Project No. MRK-00258896-A0 Drawing No. 3

Project: Due Diligence Phase II Environmental Site Assessment/Preliminary Geotechnical Investigation Sheet No. 1 of 1

Location: 772 Winston Churchill Boulevard, Oakville, Ontario

4816887.024 m N, 609886.353 m E

Date Drilled: March 16, 2020

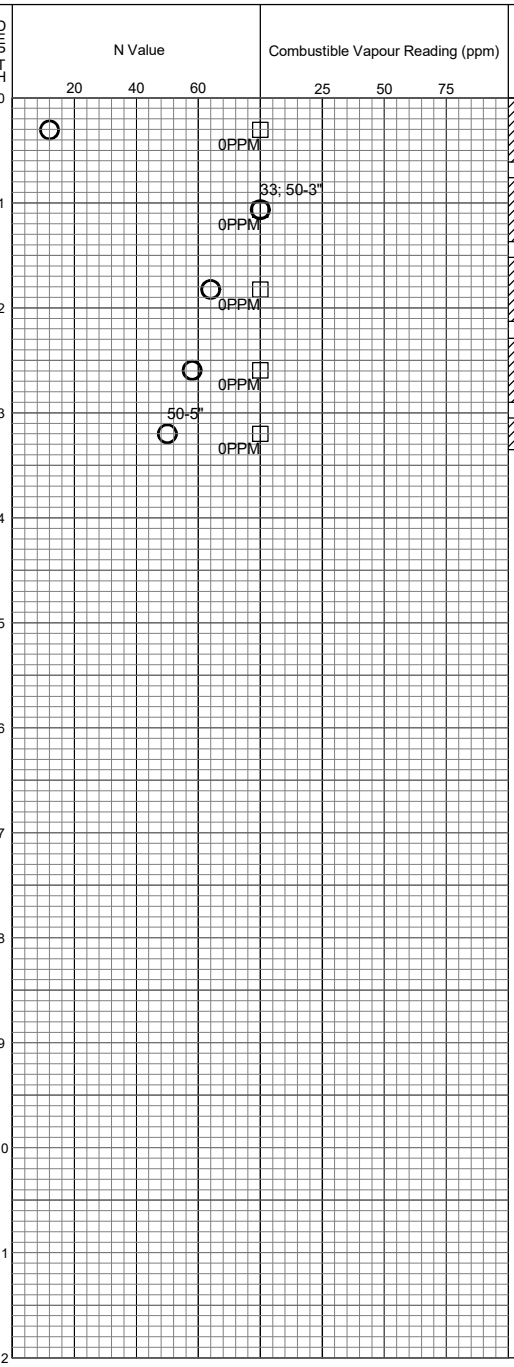
Drill Type: CME 75, track mount

Datum:

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
			94.47	0
		8 cm of brown sand **TOPSOIL**, some silt and gravel, rootlets, wet, no odour, no staining.	~94.4	
		Brown to grey sandy **SILT**, trace gravel, moist, no odour, no staining.	~93.7	1
		Brown **SAND** turning grey at 1.57 mbgs, some silt, trace to some gravel, trace cobbles from 0.76 to 1.57 mbgs, moist, no odour, no staining.		2
		Seam of grey sandy silt **TILL** from 1.68 to 1.98 mbgs, trace gravel, moist, no odour, no staining.	~91.9	
		Grey sandy silt **TILL**, trace gravel and cobbles, grey shale cobbles from 2.85 mbgs, moist, no odour, no staining.	~91.1	3
		End of test hole at 3.35 mbgs.		4
		NOTE: All vapour readings taken using an RKI Eagle 2 petroleum hydrocarbon detector.		5
				6
				7
				8
				9
				10
				11
				12



SAMPLES	% RECOV	SAMPLE ID	ANALYSIS
	70	SS1	PAH PEST ING
	60	SS2	
	80	SS3	PHC VOC
	60	SS4	
	30	SS5	

ENVIRONMENTAL-EXP MRK-00258896-A0_OAKVILLE, 772 WINSTON CHURCHILL BLVD.GPJ 4/3/20

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

exp Services Inc.
Markham, Ontario
Telephone: 905.695.3217

Log of Borehole BH4

Project No. MRK-00258896-A0 Drawing No. 4

Project: Due Diligence Phase II Environmental Site Assessment/Preliminary Geotechnical Investigation Sheet No. 1 of 1

Location: 772 Winston Churchill Boulevard, Oakville, Ontario

4816144.263 m N, 609951.906 m E

Date Drilled: March 17, 2020

Drill Type: CME 75, track mount

Datum:

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
			94.34	0
		5 cm of grey clayey silt **TOPSOIL**, some sand and gravel, rootlets, wet, no odour, no staining.	~94.3	
		Brown to grey sandy **SILT**, some clay and gravel, moist, no odour, no staining.		1
			~92.4	2
		Brown to grey sandy silt **TILL**, some clay and gravel, moist, no odour, no staining.		
			~90.8	3
		Grey weathered **SHALE** bedrock.	~90.7	
		End of test hole at 3.66 mbgs.		4
		NOTE: All vapour readings taken using an RKI Eagle 2 petroleum hydrocarbon detector.		5
				6
				7
				8
				9
				10
				11
				12

N Value: 20, 40, 60

Combustible Vapour Reading (ppm): 25, 50, 75

SAMPLES	% RECOV	SAMPLE ID	ANALYSIS	Combustible Vapour Reading (ppm)
	70	SS1	PAH PEST ING	0PPM
	80	SS2		0PPM
	70	SS3		0PPM
	70	SS4		0PPM
	60	SS5	PHC VOC	12; 50-4" 50-3 0PPM
	5	SS6		

ENVIRONMENTAL-EXP MRK-00258896-A0_OAKVILLE, 772 WINSTON CHURCHILL BLVD.GPJ 4/3/20

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

exp Services Inc.
Markham, Ontario
Telephone: 905.695.3217

Log of Borehole BH5

Project No. MRK-00258896-A0 Drawing No. 5

Project: Due Diligence Phase II Environmental Site Assessment/Preliminary Geotechnical Investigation Sheet No. 1 of 1

Location: 772 Winston Churchill Boulevard, Oakville, Ontario

4816263.507 m N, 610025.785 m E

Date Drilled: March 17, 2020

Drill Type: CME 75, track mount

Datum:

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
			93.76	0
		8 cm of brown clayey silt **TOPSOIL**, some sand and gravel, rootlets, wet, no odour, no staining.	~93.7	
		Brown to grey sandy **SILT**, some clay and gravel, moist, no odour, no staining.		1
				2
			~91.3	
		Grey sandy silt **TILL**, some weathered shale and shale cobbles, some gravel from 3.05 to 3.66 mbgs, moist, no odour, no staining.		3
			~89.8	4
		End of test hole at 3.96 mbgs.		5
		NOTE: All vapour readings taken using an RKI Eagle 2 petroleum hydrocarbon detector.		6
				7
				8
				9
				10
				11
				12

N Value: 20, 40, 60

Combustible Vapour Reading (ppm): 25, 50, 75

0PPM

SAMPLES	% RECOV	SAMPLE ID	ANALYSIS
	20	SS1	
	85	SS2	
	70	SS3	
	45	SS4	
	55	SS5	
	40	SS6	

ENVIRONMENTAL-EXP MRK-00258896-A0_OAKVILLE, 772 WINSTON CHURCHILL BLVD.GPJ 4/3/20

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

exp Services Inc.
Markham, Ontario
Telephone: 905.695.3217

Log of Borehole BH6

Project No. MRK-00258896-A0 Drawing No. 6

Project: Due Diligence Phase II Environmental Site Assessment/Preliminary Geotechnical Investigation Sheet No. 1 of 1

Location: 772 Winston Churchill Boulevard, Oakville, Ontario

4816191.842 m N, 609707.063 m E

Date Drilled: March 16, 2020

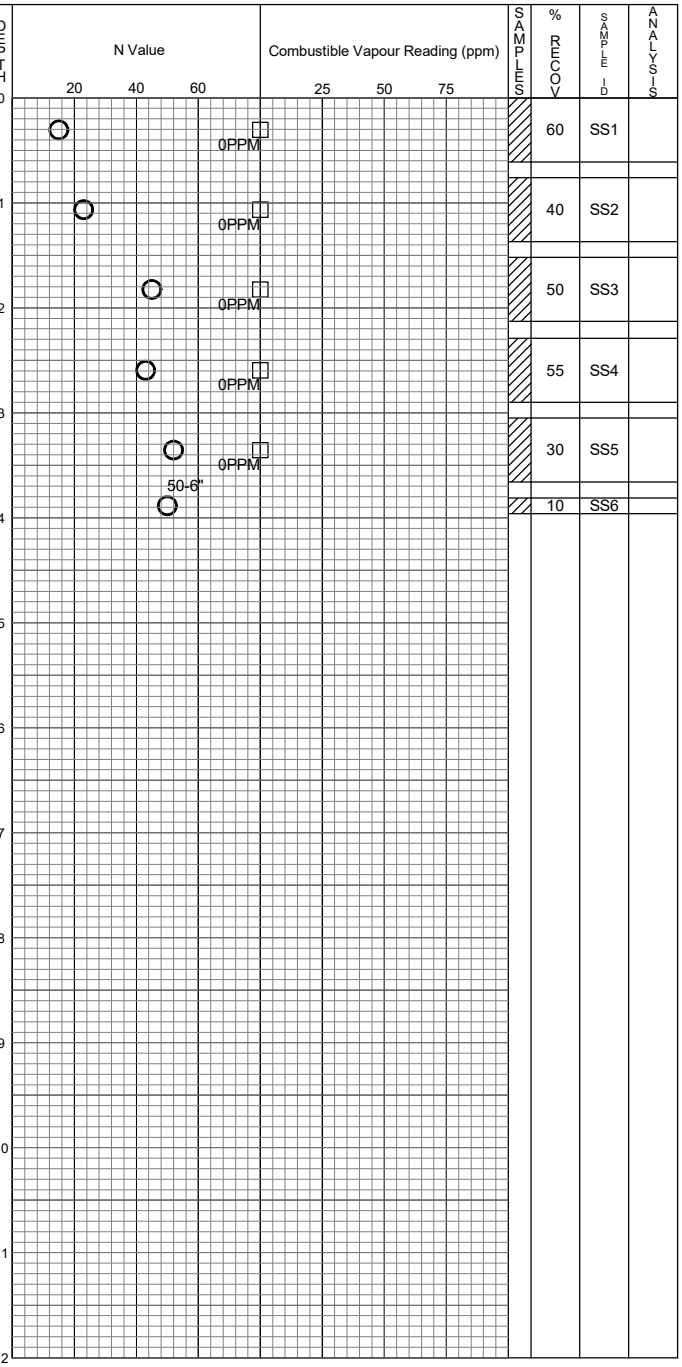
Drill Type: CME 75, track mount

Datum:

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
			94.80	0
		5 cm of grey to brown clayey silt **TOPSOIL**, some gravel, rootlets, wet, no odour, no staining.	~94.8	
		Grey to brown clayey **SILT**, some sand, trace gravel, moist, no odour, no staining.	~94.3	
		Brown **SAND**, trace to some gravel, moist, no odour, no staining.	~93.9	1
		Brown sandy silt **TILL** turning grey at 1.67 mbgs, trace to some gravel and cobbles, grey boulder fragments from 1.52 to 1.57 mbgs, grey shale cobbles from 2.85 mbgs, moist, no odour, no staining.		2
▼				3
		Grey weathered **SHALE** bedrock.	~91.0 / ~90.8	4
		End of test hole at 3.96 mbgs.		5
		NOTE: All vapour readings taken using an RKI Eagle 2 petroleum hydrocarbon detector.		6
				7
				8
				9
				10
				11
				12



SAMPLES	% RECOV	SAMPLE ID	ANALYSIS
	60	SS1	
	40	SS2	
	50	SS3	
	55	SS4	
	30	SS5	
	10	SS6	

ENVIRONMENTAL-EXP MRK-00258896-A0_OAKVILLE, 772 WINSTON CHURCHILL BLVD.GPJ 4/3/20

Time	Water Level (m)	Depth to Cave (m)
on completion	3.81	

exp Services Inc.
Markham, Ontario
Telephone: 905.695.3217

Log of Borehole BH7

Project No. MRK-00258896-A0 Drawing No. 7

Project: Due Diligence Phase II Environmental Site Assessment/Preliminary Geotechnical Investigation Sheet No. 1 of 1

Location: 772 Winston Churchill Boulevard, Oakville, Ontario

4815998.685 m N, 609857.653 m E

Date Drilled: March 17, 2020

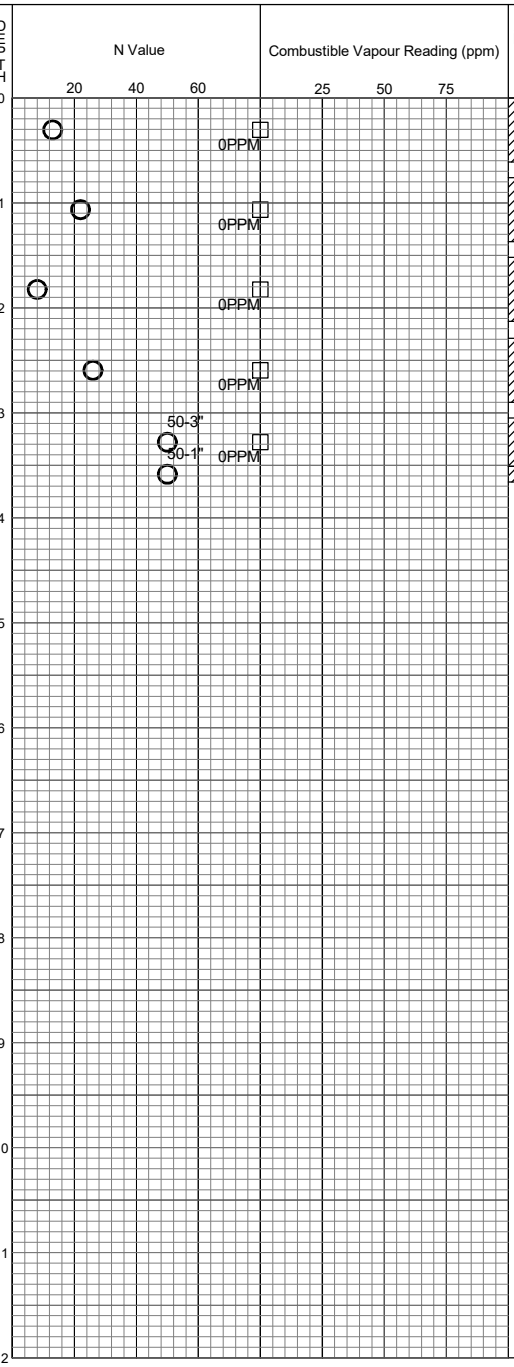
Drill Type: CME 75, track mount

Datum:

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
			95.36	0
		5 cm of brown to grey clayey silt **TOPSOIL**, some gravel, rootlets, wet, no odour, no staining.	~95.3	
		Brown to grey sandy **SILT**, some gravel, moist, no odour, no staining.	~94.5	1
		Brown **SAND**, trace gravel, some silt from 1.29 mbgs, moist, no odour, no staining.	~93.5	2
		Brown to grey sandy **SILT**, some clay, trace to some gravel, moist, no odour, no staining.	~92.5	3
		Grey to brown sandy silt **TILL**, trace to some gravel, some clay from 3.46 mbgs, moist, no odour, no staining.	~91.9	4
		Grey weathered **SHALE** bedrock.	~91.7	5
		End of test hole at 3.66 mbgs.		6
		NOTE: All vapour readings taken using an RKI Eagle 2 petroleum hydrocarbon detector.		7
				8
				9
				10
				11
				12



SAMPLES	% RECOV	SAMPLE ID	ANALYSIS
	30	SS1	
	50	SS2	
	40	SS3	
	80	SS4	
	30	SS5	
	5	SS6	

ENVIRONMENTAL-EXP MRK-00258896-A0_OAKVILLE, 772 WINSTON CHURCHILL BLVD.GPJ 4/3/20

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

exp Services Inc.
Markham, Ontario
Telephone: 905.695.3217

Log of Borehole BH8

Project No. MRK-00258896-A0 Drawing No. 8

Project: Due Diligence Phase II Environmental Site Assessment/Preliminary Geotechnical Investigation Sheet No. 1 of 1

Location: 772 Winston Churchill Boulevard, Oakville, Ontario

4816048.414 m N, 609946.679 m E

Date Drilled: March 17, 2020

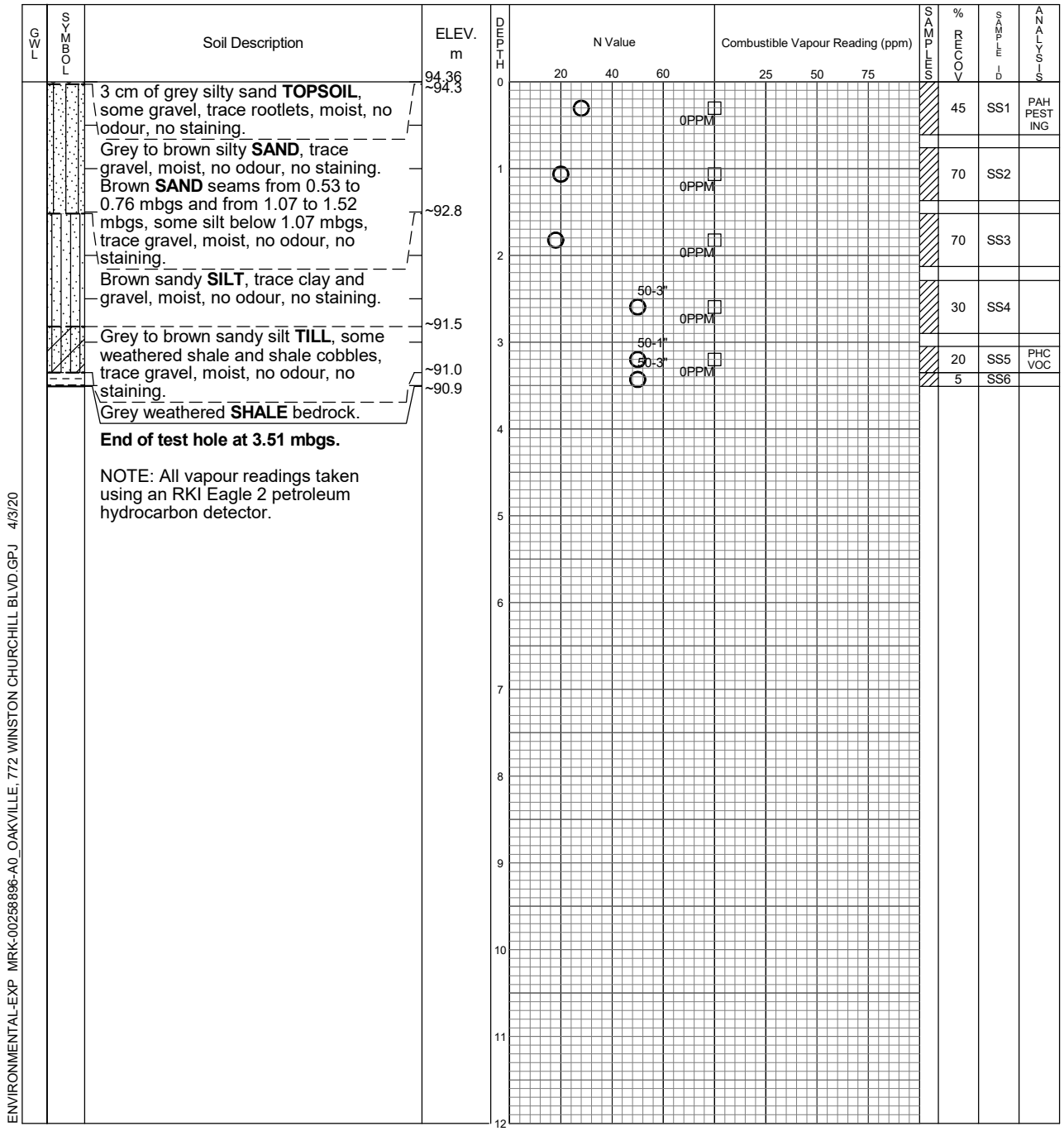
Drill Type: CME 75, track mount

Datum:

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
			94.36	0
		3 cm of grey silty sand **TOPSOIL**, some gravel, trace rootlets, moist, no odour, no staining.	~94.3	
		Grey to brown silty **SAND**, trace gravel, moist, no odour, no staining. Brown **SAND** seams from 0.53 to 0.76 mbgs and from 1.07 to 1.52 mbgs, some silt below 1.07 mbgs, trace gravel, moist, no odour, no staining.	~92.8	1
		Brown sandy **SILT**, trace clay and gravel, moist, no odour, no staining.	~91.5	2
		Grey to brown sandy silt **TILL**, some weathered shale and shale cobbles, trace gravel, moist, no odour, no staining.	~91.0	3
		Grey weathered **SHALE** bedrock.	~90.9	4
		End of test hole at 3.51 mbgs.		5
		NOTE: All vapour readings taken using an RKI Eagle 2 petroleum hydrocarbon detector.		6
				7
				8
				9
				10
				11
				12



SAMPLES	% RECOV	SAMPLE ID	ANALYSIS
	45	SS1	PAH PEST ING
	70	SS2	
	70	SS3	
	30	SS4	
	20	SS5	PHC VOC
	5	SS6	

Time	Water Level (m)	Depth to Cave (m)
dry on completion		

exp Services Inc.
Markham, Ontario
Telephone: 905.695.3217

Appendix F – Quality Assurance Quality Control (QAQC)

Quality Management, Control and Assurance

Project Quality Management

Sample collection was performed using generally accepted principles and with appropriate sampling equipment. Written field sampling procedures for groundwater developed by EXP Services Inc. (EXP) were used to ensure consistency in sample collection and preparation of samples for submission to the laboratory. The Ministry of Environment, Conservation and Parks (MECP) document entitled Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, December 1996, was used as a reference.

The staff involved in the field sampling have participated in regular, ongoing EXP training programs and were qualified and experienced in collecting, describing, and preparing environmental samples for laboratory analysis.

Laboratory analysis was performed using generally accepted principles in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (Protocol).

Data quality objectives for the parameters of concern were set to meet acceptable Reporting Detection Limits (RDLs) to achieve the goal of defining areas where such parameters are present at levels in excess of applicable generic Standards, as defined in Ontario Regulation (O. Reg.) 153/04, as amended to date, under the Environmental Protection Act. This included providing written instruction to the participating analytical laboratory describing the required analyses on the Chain of Custody prepared and delivered with the samples.

Field Quality Assurance/Quality Control

The Sampling and Analysis Plan was prepared and executed based on the findings of previous investigations, including the needs of the client during future site redevelopment activities, and on professional judgment at the time of the investigation.

Field observations were made and documented in a field book in accordance with generally accepted practices and with the procedures developed and utilized by EXP.

EXP field sampling Quality Assurance/ Quality Control (QA/QC) protocols are tailored to the investigation and include, where appropriate:

- the collection of at least one duplicate sample per site for groundwater (where three or more such samples are collected);
- where volatile organic chemical (VOC) analysis of groundwater is required, one trip blank shall be submitted for laboratory analysis with each submission;
- where VOC analysis is required, the collection of discrete samples directly into sample bottles with teflon-lined lids and immediate placement into a cooler with free ice to maintain the temperature at less than 10°C for transport to the laboratory;
- the use of dedicated equipment for groundwater sampling at different monitors and the thorough cleaning of soil sampling equipment between sample sites; and,
- where sampling for trace organics (organic chemicals with a criterion value of less than 1 µg/g and/or samples collected for determination of background trace organic concentrations), ensuring that neither the bare hand or latex glove comes into contact with the water as it is being placed into the laboratory sample container.

The results of the duplicate samples are presented along with the tabulated data in the report. Tabulated data are presented to a maximum of three significant digits where reported by the laboratory.

Laboratory Quality Assurance/Quality Control

All laboratory analyses were completed by AGAT laboratories (AGAT) an accredited laboratory for these tests. AGAT performed the work following formal written methods and procedures. These methods include all the minimum requirements as specified in the Protocol.

EXP has accepted the data provided by AGAT based on the assurance from AGAT that as a minimum, the following requirements have been met and documentation to demonstrate compliance can be produced on request:

- the method performance criteria identified in the Protocol were met;
- sample storage requirements, pre-analysis processing techniques, and holding times for all sample types as identified in the Protocol were met;
- the results of all laboratory QC samples were within statistically determined control limits and if not, reasons were provided;
- surrogate recoveries (for organic analyses) were monitored and recorded;
- details on the precision and accuracy of the data have been recorded and retained and are available from the laboratory should they be required as a result of an MECP audit;
- the analytical data were reported without blank correction (unless the correction was clearly identified on the Certificate of Analysis(COA)); and,
- a COA with all QA/QC sample data, including surrogate recoveries, has been received from the laboratory and is appended.

A total of one (1) duplicate soil sample (GS1-0), one (1) groundwater duplicate sample (MW1030), and one (1) sediment duplicate sample (SED102-0) were collected during the Site investigation. A summary of the sample and field duplicate samples collected are provided below.

The following soil sample/field duplicate sample pairs were collected and analyzed for the specified parameters:

- GS1/GS1-0 for Organochlorine Pesticides (OCs).

The following groundwater sample/field duplicate sample pair was collected and analyzed for the specified parameters:

- MW103/MW1030 for OCs and metals.

The following sediment sample/field duplicate sample pair was collected and analyzed for the specified parameters:

- SED102/SED102-0 for metals.

The relative percent differences (RPDs) for the original and field duplicate sample sets is provided in the Table F-1A, attached at the end of this Appendix. It should be noted that meaningful RPDs cannot be calculated if one or both of the analytical results are less than the reporting detection limits (RDLs) or if the average of the two sample concentrations are less than 5x the RDL.

The field duplicate sample results were quantitatively evaluated by calculating the RPD. For soil samples, the alert limit criteria for the field duplicate RPD is >30% for metals and OCs. The calculated RPD between the duplicate sample and the original sample for soil was below the applicable alert limit criteria for all of the parameters analyzed.

For groundwater samples, the alert limit criteria for the field duplicate RPD is >30% for OCs and metals. The calculated RPD between the duplicate sample and the original sample for groundwater was below the applicable alert limit criteria for all of the parameters analyzed.

For sediment samples, the alert limit criteria for the field duplicate RPD is >30% for metals. The calculated RPD between the duplicate sample and the original sample for sediment was below the applicable alert limit criteria for all of the parameters analyzed.

There were no comments/remarks on the COAs regarding the validity of the results for any of the samples analyzed.

No laboratory data quality issues were identified that would have a material effect on the interpretation of results presented in this report.

TABLE F-1A: SOIL FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES

Organochlorine Pesticides

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample ID	MDL*	Hand Pit GS1	Duplicate of GS-1 GS1-0	RPD	Alert Limit
Depth (mbgs)		0.4	0.4		
Date Sampled		19-Oct-21	19-Oct-21		
Date Analyzed		25-Oct-21	25-Oct-21		
Lab Job Number		21T817791	21T817791		
Lab Identifier		3106243	3106246		
Aldrin	0.005	<0.005	<0.005	nc	>30%
Chlordane	0.007	<0.007	<0.007	nc	>30%
DDD	0.007	0.023	0.027	nc	>30%
DDE	0.007	**0.145**	**0.193**	28	>30%
DDT	0.007	0.067	0.088	27	>30%
Dieldrin	0.005	<0.005	<0.005	nc	>30%
Endosulfan	0.005	<0.005	<0.005	nc	>30%
Endrin	0.005	<0.005	<0.005	nc	>30%
Gamma-Hexachlorocyclohexane	0.005	<0.005	<0.005	nc	>30%
Heptachlor	0.005	<0.005	<0.005	nc	>30%
Heptachlor Epoxide	0.005	<0.005	<0.005	nc	>30%
Hexachlorobenzene	0.005	<0.005	<0.005	nc	>30%
Hexachlorobutadiene	0.01	<0.01	<0.01	nc	>30%
Hexachloroethane	0.01	<0.01	<0.01	nc	>30%
Methoxychlor	0.005	<0.005	<0.005	nc	>30%

NOTES:

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

'nc' means "not calculable", since one (or both) of the results are less than the RDL or the results are <5x the RDL.

Exceedences of alert limits are shown in **bold**.

TABLE F-1A: GROUND WATER FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES
Metals, Hydride-Forming Metals, and Other Regulated Parameters

772 Winston Churchill Boulevard, Oakville, Ontario
October 2021

Sample ID	MDL*	Monitor MW103	Duplicate of MW103 MW103-0	RPD	Alert Limit
Screen Interval (mbgs)		0.99 - 3.99	0.99 - 3.99		
Date Sampled		19-Oct-21	19-Oct-21		
Date Analyzed		25-Oct-21	25-Oct-21		
Lab Job Number		21T817791	21T817791		
Lab Identifier		3106300	3106302		
Dissolved Antimony	1.0	<1.0	<1.0	nc	>30%
Dissolved Arsenic	1.0	1.9	1.9	nc	>30%
Dissolved Barium	2.0	92.1	90.9	1	>30%
Dissolved Beryllium	0.50	<0.50	<0.50	nc	>30%
Dissolved Boron	10.0	338	341	1	>30%
Dissolved Cadmium	0.20	<0.20	<0.20	nc	>30%
Dissolved Chromium	2.0	4.8	4.9	nc	>30%
Dissolved Cobalt	0.50	0.85	0.92	nc	>30%
Dissolved Copper	1.0	1.5	1.5	nc	>30%
Dissolved Lead	0.50	2.2	1.3	nc	>30%
Dissolved Molybdenum	0.50	<0.50	<0.50	nc	>30%
Dissolved Nickel	3.0	<3.0	<3.0	nc	>30%
Dissolved Selenium	1.0	2.9	2.4	nc	>30%
Dissolved Silver	0.20	<0.20	<0.20	nc	>30%
Dissolved Thallium	0.30	<0.30	<0.30	nc	>30%
Dissolved Uranium	0.50	1.67	1.7	nc	>30%
Dissolved Vanadium	0.40	<0.40	<0.40	nc	>30%
Dissolved Zinc	5.0	6	<5.0	nc	>30%

NOTES:

All results in ppb (µg/L).

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

'nc' means "not calculable", since one (or both) of the results are less than the RDL or the results are <5x the RDL.

Exceedences of alert limits are shown in **bold**.

TABLE F-1A: GROUND WATER FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES

Organochlorine Pesticides

772 Winston Churchill Boulevard, Oakville, Ontario

October 2021

Sample ID	MDL*	Monitor MW103	Duplicate of MW103 MW103-0	RPD	Alert Limit
Depth (mbgs)		0.99 - 3.99	0.99 - 3.99		
Date Sampled		44488	44488		
Date Analyzed		25-Oct-21	25-Oct-21		
Lab Job Number		21T817791	21T817791		
Lab Identifier		3106300	3106302		
Aldrin	0.005	<0.01	<0.01	nc	>30%
Chlordane	0.007	<0.04	<0.04	nc	>30%
DDD	0.007	<0.05	<0.05	nc	>30%
DDE	0.007	<0.01	<0.01	nc	>30%
DDT	0.007	<0.04	<0.04	nc	>30%
Dieldrin	0.005	<0.02	<0.02	nc	>30%
Endosulfan	0.005	<0.05	<0.05	nc	>30%
Endrin	0.005	<0.05	<0.05	nc	>30%
Gamma-Hexachlorocyclohexane	0.005	<0.01	<0.01	nc	>30%
Heptachlor	0.005	<0.01	<0.01	nc	>30%
Heptachlor Epoxide	0.005	<0.01	<0.01	nc	>30%
Hexachlorobenzene	0.005	<0.01	<0.01	nc	>30%
Hexachlorobutadiene	0.01	<0.01	<0.01	nc	>30%
Hexachloroethane	0.01	<0.01	<0.01	nc	>30%
Methoxychlor	0.005	<0.04	<0.04	nc	>30%

NOTES:

All results in ppm (µg/g) and based on dry weight basis.

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

'nc' means "not calculable", since one (or both) of the results are less than the RDL or the results are <5x the RDL.

Exceedences of alert limits are shown in **bold**.

TABLE F-1A: SEDIMENT FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES
Metals, Hydride-Forming Metals, and Other Regulated Parameters

772 Winston Churchill Boulevard, Oakville, Ontario
October 2021

Sample ID	MDL*	Grab Sample SED 102	Duplicate of SED 102 SED 102-0	RPD	Alert Limit
Date Sampled		19-Oct-21	19-Oct-21		
Date Analyzed		25-Oct-21	25-Oct-21		
Lab Job Number		21T817791	21T817791		
Lab Identifier		3106281	3106282		
Antimony	0.8	<0.8	<0.8	nc	>30%
Arsenic	1	18	19	5	>30%
Barium	2	53	53.3	1	>30%
Beryllium	0.5	<0.4	0.4	nc	>30%
Boron	5	<5	5	nc	>30%
Boron (Hot Water Extractable)	0.10	-	-	nc	>30%
Cadmium	0.5	<0.5	<0.5	nc	>30%
Chromium	5	17	16	nc	>30%
Cobalt	0.5	4	4.4	10	>30%
Copper	1	22.2	22.1	0	>30%
Lead	1	79	72	9	>30%
Molybdenum	0.5	<0.5	<0.5	nc	>30%
Nickel	1	10	10	0	>30%
Selenium	0.4	0.8	<0.8	nc	>30%
Silver	0.2	<0.5	<0.5	nc	>30%
Thallium	0.4	<0.5	<0.5	nc	>30%
Uranium	0.5	0.57	0.5	nc	>30%
Vanadium	1	20.8	21.7	4	>30%
Zinc	5	48	47	2	>30%

NOTES:

All results in ppb (µg/L).

* Minimum Analytical Reporting Detection Limit (MDL) is listed. Refer to individual Certificate of Analyses for sample-specific Reporting Detection Limit (RDL) value.

'nc' means "not calculable", since one (or both) of the results are less than the RDL or the results are <5x the RDL.

Exceedences of alert limits are shown in **bold**.

Appendix G – Certificates of Analysis

AGAT Laboratories

5835 COOPERS AVENUE
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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: **EXP Services Inc**
220 Commerce Valley Drive West,Suite 500
Markham, ON, ON L3T0A8
(905) 695-3217

ATTENTION TO: **Corey Ferguson**

PROJECT: **MRK-00258896-A0**

AGAT WORK ORDER: **20T586004**

TRACE ORGANICS REVIEWED BY: **Neli Popnikolova, Senior Chemist**

DATE REPORTED: **Mar 26, 2020**

PAGES (INCLUDING COVER): **9**

VERSION*: **1**

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

Notes

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20T586004

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		MW110	MW101	MW102	MW103
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2020-03-18	2020-03-18	2020-03-18	2020-03-18
Parameter	**Unit**	**G / S**	**RDL**	**1036268**	**1036270**	**1036271**	**1036272**
F1 (C6 - C10)	µg/L		25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA	NA	NA
Surrogate	**Unit**	**Acceptable Limits**					
Terphenyl	%	60-140		99	73	74	69

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Ground Water - All Types of Property Uses
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.

1036268-1036272 The C6-C10 fraction is calculated using Toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
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, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowich

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20T586004

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		MW110	MW101	MW102	MW103
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2020-03-18	2020-03-18	2020-03-18	2020-03-18
Parameter	Unit	G / S	RDL	1036268	1036270	1036271	1036272
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	50	0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	5	0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	5	0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5	0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	16	0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	22	0.20	<0.20	<0.20	<0.20	<0.20
Dibromochloromethane	µg/L	25	0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	30	0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	2.4	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

Certified By: N Popnikolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20T586004

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		MW110	MW101	MW102	MW103
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2020-03-18	2020-03-18	2020-03-18	2020-03-18
Parameter	**Unit**	**G / S**	**RDL**	**1036268**	**1036270**	**1036271**	**1036272**
Bromoform	µg/L	25	0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L	5.4	0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L	300	0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**					
Toluene-d8	% Recovery	50-140		94	95	104	104
4-Bromofluorobenzene	% Recovery	50-140		84	83	85	77

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Ground Water - All Types of Property Uses
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.

1036268-1036272 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586004

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Mar 26, 2020			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	1031357		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	96%	50%	140%	100%	50%	140%
Vinyl Chloride	1031357		< 0.17	< 0.17	NA	< 0.17	73%	50%	140%	100%	50%	140%	83%	50%	140%
Bromomethane	1031357		< 0.20	< 0.20	NA	< 0.20	74%	50%	140%	71%	50%	140%	85%	50%	140%
Trichlorofluoromethane	1031357		< 0.40	< 0.40	NA	< 0.40	90%	50%	140%	96%	50%	140%	78%	50%	140%
Acetone	1031357		< 1.0	< 1.0	NA	< 1.0	104%	50%	140%	116%	50%	140%	97%	50%	140%
1,1-Dichloroethylene	1031357		< 0.30	< 0.30	NA	< 0.30	92%	50%	140%	106%	60%	130%	90%	50%	140%
Methylene Chloride	1031357		< 0.30	< 0.30	NA	< 0.30	116%	50%	140%	114%	60%	130%	87%	50%	140%
trans- 1,2-Dichloroethylene	1031357		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	106%	60%	130%	76%	50%	140%
Methyl tert-butyl ether	1031357		< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	97%	60%	130%	115%	50%	140%
1,1-Dichloroethane	1031357		< 0.30	< 0.30	NA	< 0.30	113%	50%	140%	114%	60%	130%	82%	50%	140%
Methyl Ethyl Ketone	1031357		< 1.0	< 1.0	NA	< 1.0	70%	50%	140%	97%	50%	140%	84%	50%	140%
cis- 1,2-Dichloroethylene	1031357		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	106%	60%	130%	105%	50%	140%
Chloroform	1031357		< 0.20	< 0.20	NA	< 0.20	88%	50%	140%	114%	60%	130%	85%	50%	140%
1,2-Dichloroethane	1031357		< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	106%	60%	130%	116%	50%	140%
1,1,1-Trichloroethane	1031357		< 0.30	< 0.30	NA	< 0.30	100%	50%	140%	118%	60%	130%	113%	50%	140%
Carbon Tetrachloride	1031357		< 0.20	< 0.20	NA	< 0.20	94%	50%	140%	87%	60%	130%	92%	50%	140%
Benzene	1031357		< 0.20	< 0.20	NA	< 0.20	78%	50%	140%	93%	60%	130%	99%	50%	140%
1,2-Dichloropropane	1031357		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	78%	60%	130%	83%	50%	140%
Trichloroethylene	1031357		< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	99%	60%	140%	105%	50%	140%
Bromodichloromethane	1031357		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	79%	60%	130%	82%	50%	140%
Methyl Isobutyl Ketone	1031357		< 1.0	< 1.0	NA	< 1.0	102%	50%	140%	120%	50%	140%	97%	50%	140%
1,1,2-Trichloroethane	1031357		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	105%	60%	130%	105%	50%	140%
Toluene	1031357		< 0.20	< 0.20	NA	< 0.20	111%	50%	140%	107%	60%	130%	105%	50%	140%
Dibromochloromethane	1031357		< 0.10	< 0.10	NA	< 0.10	83%	50%	140%	73%	60%	130%	92%	50%	140%
Ethylene Dibromide	1031357		< 0.10	< 0.10	NA	< 0.10	94%	50%	140%	98%	60%	130%	95%	50%	140%
Tetrachloroethylene	1031357		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	106%	60%	130%	106%	50%	140%
1,1,1,2-Tetrachloroethane	1031357		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	100%	60%	130%	101%	50%	140%
Chlorobenzene	1031357		< 0.10	< 0.10	NA	< 0.10	116%	50%	140%	119%	60%	130%	86%	50%	140%
Ethylbenzene	1031357		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	110%	60%	130%	116%	50%	140%
m & p-Xylene	1031357		< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	113%	60%	130%	107%	50%	140%
Bromoform	1031357		< 0.10	< 0.10	NA	< 0.10	90%	50%	140%	81%	60%	130%	83%	50%	140%
Styrene	1031357		< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	104%	60%	130%	102%	50%	140%
1,1,2,2-Tetrachloroethane	1031357		< 0.10	< 0.10	NA	< 0.10	94%	50%	140%	103%	60%	130%	101%	50%	140%
o-Xylene	1031357		< 0.10	< 0.10	NA	< 0.10	112%	50%	140%	106%	60%	130%	106%	50%	140%
1,3-Dichlorobenzene	1031357		< 0.10	< 0.10	NA	< 0.10	97%	50%	140%	109%	60%	130%	107%	50%	140%
1,4-Dichlorobenzene	1031357		< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	105%	60%	130%	101%	50%	140%
1,2-Dichlorobenzene	1031357		< 0.10	< 0.10	NA	< 0.10	82%	50%	140%	88%	60%	130%	88%	50%	140%
1,3-Dichloropropene	1031357		< 0.30	< 0.30	NA	< 0.30	110%	50%	140%	96%	60%	130%	106%	50%	140%
n-Hexane	1031357		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	87%	60%	130%	86%	50%	140%

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Quality Assurance

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586004

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Mar 26, 2020			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 - C10)	1036270	1036270	< 25	< 25	NA	< 25	103%	60%	140%	104%	60%	140%	102%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	100%	60%	140%	110%	60%	140%	84%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	94%	60%	140%	99%	60%	140%	102%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	89%	60%	140%	95%	60%	140%	106%	60%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
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: 20T586004**

PROJECT: MRK-00258896-A0 | **ATTENTION TO: Corey Ferguson**

SAMPLING SITE: | **SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
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
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
Dichlorodifluoromethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586004

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Dibromochloromethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS

AGAT Laboratories

IL Black

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Mississauga, Ontario L4Z 1Y2
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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 #: 20T586004

Cooler Quantity:

Arrival Temperatures: 3.5 | 3.6 | 4.2 (Ice)

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: EXP Services Inc.
Contact: Corey Ferguson
Address: 220 Commerce Valley Dr W Suite 110, Markham
Phone: 905 695 3217 Fax:
Reports to be sent to:
1. Email: corey.ferguson@exp.com
2. Email: andrea.fernandes@exp.com

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

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

Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm

Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ 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: MRK-00255896-A0
Site Location:
Sampled By: AF & CF
AGAT Quote #: PO:
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 (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides))	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☒ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use							Potentially Hazardous or High Concentration (Y/N)
MW110	18/3/20	PM	7	GW								X	X															
MW101	↓	↓	4	↓								X	X															
MW102												X	X															
MW103												X	X															

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Andrea Fernandes Andrea	18/3/20	5:00pm	SIMRAN S		

'20MAR18 5:09PM

Page 1 of 1

N°: T101193

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CLIENT NAME: **EXP Services Inc**
220 Commerce Valley Drive West,Suite 500
Markham, ON, ON L3T0A8
(905) 695-3217

ATTENTION TO: **Corey Ferguson**

PROJECT: **MRK-00258896-A0**

AGAT WORK ORDER: **20T586006**

SOIL ANALYSIS REVIEWED BY: **Nivine Basily, Inorganics Report Writer**

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

DATE REPORTED: **Mar 26, 2020**

PAGES (INCLUDING COVER): **22**

VERSION*: **2**

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

Notes

VERSION 2:Revised report issued March 26, 2020.

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Certificate of Analysis

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		BH3-SS1	BH2-SS1	BH1-SS2	BH8-SS1	BH4-SS1	SP1-1-20cm	SP2-3-0.5-0.7m
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-03-16	2020-03-16	2020-03-16	2020-03-17	2020-03-17	2020-03-17	2020-03-18
Parameter	**Unit**	**G / S**	**RDL**	**1036314**	**1036316**	**1036320**	**1036322**	**1036324**	**1036326**	**1036327**
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	7	6	4	5	5	6	9
Barium	µg/g	220	2	80	45	45	34	45	98	76
Beryllium	µg/g	2.5	0.5	0.7	<0.5	<0.5	0.8	<0.5	1.0	0.7
Boron	µg/g	36	5	12	5	<5	15	8	21	11
Boron (Hot Water Extractable)	µg/g	1.5	0.10	0.39	0.27	0.15	1.17	0.40	0.51	0.54
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	5	22	15	15	21	15	26	26
Cobalt	µg/g	22	0.5	12.1	4.9	6.3	11.6	6.9	13.2	8.9
Copper	µg/g	92	1	36	29	15	24	18	31	34
Lead	µg/g	120	1	10	12	8	4	9	12	31
Molybdenum	µg/g	2	0.5	0.8	<0.5	<0.5	<0.5	<0.5	1.1	0.7
Nickel	µg/g	82	1	25	14	14	25	15	28	20
Selenium	µg/g	1.5	0.4	<0.4	0.5	<0.4	<0.4	<0.4	<0.4	0.7
Silver	µg/g	0.5	0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	0.3
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	2.5	0.5	<0.5	<0.5	<0.5	0.5	<0.5	1.2	0.9
Vanadium	µg/g	86	1	32	24	27	30	24	41	32
Zinc	µg/g	290	5	64	43	35	57	41	72	113
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	**0.994**	0.165	0.182	0.389	0.414	0.286	0.199
Sodium Adsorption Ratio	NA	5	NA	2.14	1.08	0.279	1.43	1.11	1.02	0.122
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.70	7.23	7.40	7.91	7.35	7.74	7.49

Certified By:

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2020-03-18 **DATE REPORTED: 2020-03-26**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

1036314-1036327 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 prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Vivine Basily

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		BH3-SS1	BH2-SS1	BH1-SS1	BH8-SS1	BH4-SS1	SP1-1-20cm	SP2-3-0.5-0.7m
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-03-16	2020-03-16	2020-03-16	2020-03-17	2020-03-17	2020-03-17	2020-03-18
Parameter	**Unit**	**G / S**	**RDL**	**1036314**	**1036316**	**1036319**	**1036322**	**1036324**	**1036326**	**1036327**
Hexachloroethane	µg/g	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.05	0.007	<0.007	0.010	<0.007	<0.007	0.010	<0.007	**0.28**
DDD	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	**0.056**
DDT	µg/g	1.4	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.15
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.02	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	14.6	13.8	16.7	7.8	10.8	17.8	17.8
Surrogate	**Unit**	**Acceptable Limits**								
TCMX	%	50-140		102	95	75	95	83	108	88
Decachlorobiphenyl	%	50-140		117	102	93	107	94	108	94

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

1036314-1036327 Results are based on the dry weight of the soil.
DDT total is a calculated parameter. The calculated value is the sum of op'DDT and pp'DDT.
DDD total is a calculated parameter. The calculated value is the sum of op'DDD and pp'DDD.
DDE total is a calculated parameter. The calculated value is the sum of op'DDE and pp'DDE.
Endosulfan total is a calculated parameter. The calculated value is the sum of Endosulfan I and Endosulfan II.
Chlordane total is a calculated parameter. The calculated value is the sum of Alpha-Chlordane and Gamma-Chlordane.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		BH3-SS1	BH2-SS1	BH1-SS1	BH8-SS1	BH4-SS1	SP1-1-20cm	SP2-3-0.5-0.7m
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-03-16	2020-03-16	2020-03-16	2020-03-17	2020-03-17	2020-03-17	2020-03-18
Parameter	**Unit**	**G / S**	**RDL**	**1036314**	**1036316**	**1036319**	**1036322**	**1036324**	**1036326**	**1036327**
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.19	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.22	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
Benz(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	14.6	14.8	16.7	7.8	10.8	17.8	17.8
Surrogate	**Unit**	**Acceptable Limits**								
Naphthalene-d8	%	50-140		95	93	85	90	100	90	65
Acenaphthene-d10	%	50-140		104	106	95	99	109	99	72
Chrysene-d12	%	50-140		109	114	104	101	113	110	77

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

1036314-1036327 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:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		BH3-SS3	BH2-SS2	BH1-SS4	BH8-SS5	BH4-SS5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-03-16	2020-03-16	2020-03-16	2020-03-17	2020-03-17
Parameter	**Unit**	**G / S**	**RDL**	**1036315**	**1036317**	**1036321**	**1036323**	**1036325**
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA	NA
Moisture Content	%		0.1	9.5	14.2	18.7	10.3	10.1
Surrogate	**Unit**	**Acceptable Limits**						
Terphenyl	%	60-140		88	95	100	108	91

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

1036315-1036325 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
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 without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		SP1-1-20cm	SP2-3-0.5-0.7m
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-03-17	2020-03-18
Parameter	**Unit**	**G / S**	**RDL**	**1036326**	**1036327**
F1 (C6 to C10)	µg/g		5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA
Moisture Content	%		0.1	17.8	17.8
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		103	102

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

1036326-1036327 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		BH3-SS3	BH2-SS2	BH1-SS4	BH8-SS5	BH4-SS5	SP1-1-20cm	SP2-3-0.5-0.7m
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-03-16	2020-03-16	2020-03-16	2020-03-17	2020-03-17	2020-03-17	2020-03-18
Parameter	Unit	G / S	RDL	1036315	1036317	1036321	1036323	1036325	1036326	1036327
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		BH3-SS3	BH2-SS2	BH1-SS4	BH8-SS5	BH4-SS5	SP1-1-20cm	SP2-3-0.5-0.7m
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-03-16	2020-03-16	2020-03-16	2020-03-17	2020-03-17	2020-03-17	2020-03-18
Parameter	**Unit**	**G / S**	**RDL**	**1036315**	**1036317**	**1036321**	**1036323**	**1036325**	**1036326**	**1036327**
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**								
Toluene-d8	% Recovery	50-140		102	101	101	103	103	100	102
4-Bromofluorobenzene	% Recovery	50-140		83	85	84	85	85	84	83

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

1036315-1036327 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

Guideline Violation

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

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CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1036314	BH3-SS1	ON T8 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	0.994
1036327	SP2-3-0.5-0.7m	ON T8 S RPI/ICC	O. Reg. 153(511) - OC Pesticides (Soil)	DDD	µg/g	0.05	0.056
1036327	SP2-3-0.5-0.7m	ON T8 S RPI/ICC	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	µg/g	0.05	0.28

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Quality Assurance

CLIENT NAME: EXP Services Inc
AGAT WORK ORDER: 20T586006
PROJECT: MRK-00258896-A0
ATTENTION TO: Corey Ferguson
SAMPLING SITE:
SAMPLED BY:

Soil Analysis

RPT Date: Mar 26, 2020			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 & Inorganics (Soil)															
Antimony	1036314	1036314	<0.8	<0.8	NA	< 0.8	146%	70%	130%	99%	80%	120%	87%	70%	130%
Arsenic	1036314	1036314	7	7	0.0%	< 1	113%	70%	130%	105%	80%	120%	101%	70%	130%
Barium	1036314	1036314	80	82	2.5%	< 2	113%	70%	130%	104%	80%	120%	96%	70%	130%
Beryllium	1036314	1036314	0.7	0.7	NA	< 0.5	101%	70%	130%	94%	80%	120%	93%	70%	130%
Boron	1036314	1036314	12	12	NA	< 5	99%	70%	130%	105%	80%	120%	100%	70%	130%
Boron (Hot Water Extractable)	1036314	1036314	0.39	0.39	NA	< 0.10	96%	60%	140%	97%	70%	130%	94%	60%	140%
Cadmium	1036314	1036314	<0.5	<0.5	NA	< 0.5	109%	70%	130%	99%	80%	120%	96%	70%	130%
Chromium	1036314	1036314	22	23	NA	< 5	106%	70%	130%	98%	80%	120%	95%	70%	130%
Cobalt	1036314	1036314	12.1	12.1	0.0%	< 0.5	96%	70%	130%	101%	80%	120%	93%	70%	130%
Copper	1036314	1036314	36	36	0.0%	< 1	90%	70%	130%	99%	80%	120%	80%	70%	130%
Lead	1036314	1036314	10	10	0.0%	< 1	108%	70%	130%	90%	80%	120%	86%	70%	130%
Molybdenum	1036314	1036314	0.8	0.8	NA	< 0.5	97%	70%	130%	101%	80%	120%	97%	70%	130%
Nickel	1036314	1036314	25	25	0.0%	< 1	96%	70%	130%	103%	80%	120%	91%	70%	130%
Selenium	1036314	1036314	<0.4	<0.4	NA	< 0.4	97%	70%	130%	102%	80%	120%	97%	70%	130%
Silver	1036314	1036314	<0.2	<0.2	NA	< 0.2	106%	70%	130%	101%	80%	120%	91%	70%	130%
Thallium	1036314	1036314	<0.4	<0.4	NA	< 0.4	93%	70%	130%	99%	80%	120%	94%	70%	130%
Uranium	1036314	1036314	<0.5	<0.5	NA	< 0.5	99%	70%	130%	101%	80%	120%	101%	70%	130%
Vanadium	1036314	1036314	32	32	0.0%	< 1	105%	70%	130%	102%	80%	120%	100%	70%	130%
Zinc	1036314	1036314	64	65	1.6%	< 5	101%	70%	130%	104%	80%	120%	95%	70%	130%
Chromium, Hexavalent	1035803		< 0.2	< 0.2	NA	< 0.2	89%	70%	130%	89%	80%	120%	82%	70%	130%
Cyanide, Free	1035801		<0.040	<0.040	NA	< 0.040	87%	70%	130%	103%	80%	120%	97%	70%	130%
Mercury	1036314	1036314	<0.10	<0.10	NA	< 0.10	112%	70%	130%	100%	80%	120%	104%	70%	130%
Electrical Conductivity (2:1)	1036314	1036314	0.994	0.986	0.8%	< 0.005	116%	80%	120%						
Sodium Adsorption Ratio	1036314	1036314	2.14	2.15	0.5%	NA									
pH, 2:1 CaCl2 Extraction	1037342		7.51	7.48	0.4%	NA	101%	80%	120%						

Comments: NA signifies Not Applicable.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Antimony Reference recovery is outside method's acceptance limit by more than an absolute maximum of 10% however, all other QCs i.e. duplicate, blank, blank spike and matrix spike are within method's QC acceptance criteria.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Mar 26, 2020			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	1014992		<0.05	<0.05	NA	< 0.05	116%	50%	140%	97%	50%	140%	101%	50%	140%
Acenaphthylene	1014992		<0.05	<0.05	NA	< 0.05	112%	50%	140%	96%	50%	140%	99%	50%	140%
Acenaphthene	1014992		<0.05	<0.05	NA	< 0.05	119%	50%	140%	96%	50%	140%	96%	50%	140%
Fluorene	1014992		<0.05	<0.05	NA	< 0.05	114%	50%	140%	97%	50%	140%	95%	50%	140%
Phenanthrene	1014992		<0.05	<0.05	NA	< 0.05	106%	50%	140%	95%	50%	140%	91%	50%	140%
Anthracene	1014992		<0.05	<0.05	NA	< 0.05	101%	50%	140%	86%	50%	140%	84%	50%	140%
Fluoranthene	1014992		<0.05	<0.05	NA	< 0.05	112%	50%	140%	95%	50%	140%	92%	50%	140%
Pyrene	1014992		<0.05	<0.05	NA	< 0.05	111%	50%	140%	96%	50%	140%	93%	50%	140%
Benz(a)anthracene	1014992		<0.05	<0.05	NA	< 0.05	110%	50%	140%	82%	50%	140%	83%	50%	140%
Chrysene	1014992		<0.05	<0.05	NA	< 0.05	119%	50%	140%	97%	50%	140%	95%	50%	140%
Benzo(b)fluoranthene	1014992		<0.05	<0.05	NA	< 0.05	99%	50%	140%	92%	50%	140%	74%	50%	140%
Benzo(k)fluoranthene	1014992		<0.05	<0.05	NA	< 0.05	115%	50%	140%	95%	50%	140%	101%	50%	140%
Benzo(a)pyrene	1014992		<0.05	<0.05	NA	< 0.05	117%	50%	140%	92%	50%	140%	88%	50%	140%
Indeno(1,2,3-cd)pyrene	1014992		<0.05	<0.05	NA	< 0.05	118%	50%	140%	89%	50%	140%	87%	50%	140%
Dibenz(a,h)anthracene	1014992		<0.05	<0.05	NA	< 0.05	111%	50%	140%	85%	50%	140%	89%	50%	140%
Benzo(g,h,i)perylene	1014992		<0.05	<0.05	NA	< 0.05	112%	50%	140%	86%	50%	140%	84%	50%	140%
O. Reg. 153(511) - OC Pesticides (Soil)															
Hexachloroethane	1025827		< 0.01	< 0.01	NA	< 0.01	93%	50%	140%	94%	50%	140%	90%	50%	140%
Gamma-Hexachlorocyclohexane	1025827		< 0.005	< 0.005	NA	< 0.005	104%	50%	140%	98%	50%	140%	102%	50%	140%
Heptachlor	1025827		< 0.005	< 0.005	NA	< 0.005	92%	50%	140%	102%	50%	140%	103%	50%	140%
Aldrin	1025827		< 0.005	< 0.005	NA	< 0.005	102%	50%	140%	104%	50%	140%	106%	50%	140%
Heptachlor Epoxide	1025827		< 0.005	< 0.005	NA	< 0.005	103%	50%	140%	103%	50%	140%	105%	50%	140%
Endosulfan	1025827		< 0.005	< 0.005	NA	< 0.005	102%	50%	140%	99%	50%	140%	103%	50%	140%
Chlordane	1025827		< 0.007	< 0.007	NA	< 0.007	100%	50%	140%	104%	50%	140%	108%	50%	140%
DDE	1025827		< 0.007	< 0.007	NA	< 0.007	103%	50%	140%	105%	50%	140%	107%	50%	140%
DDD	1025827		< 0.007	< 0.007	NA	< 0.007	104%	50%	140%	102%	50%	140%	103%	50%	140%
DDT	1025827		< 0.007	< 0.007	NA	< 0.007	102%	50%	140%	103%	50%	140%	108%	50%	140%
Dieldrin	1025827		< 0.005	< 0.005	NA	< 0.005	97%	50%	140%	102%	50%	140%	102%	50%	140%
Endrin	1025827		< 0.005	< 0.005	NA	< 0.005	102%	50%	140%	98%	50%	140%	108%	50%	140%
Methoxychlor	1025827		< 0.005	< 0.005	NA	< 0.005	94%	50%	140%	97%	50%	140%	102%	50%	140%
Hexachlorobenzene	1025827		< 0.005	< 0.005	NA	< 0.005	100%	50%	140%	102%	50%	140%	98%	50%	140%
Hexachlorobutadiene	1025827		< 0.01	< 0.01	NA	< 0.01	93%	50%	140%	98%	50%	140%	102%	50%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	1035936		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	84%	50%	140%	72%	50%	140%
Vinyl Chloride	1035936		< 0.02	< 0.02	NA	< 0.02	93%	50%	140%	100%	50%	140%	93%	50%	140%
Bromomethane	1035936		< 0.05	< 0.05	NA	< 0.05	74%	50%	140%	71%	50%	140%	86%	50%	140%
Trichlorofluoromethane	1035936		< 0.05	< 0.05	NA	< 0.05	83%	50%	140%	96%	50%	140%	83%	50%	140%
Acetone	1035936		< 0.50	< 0.50	NA	< 0.50	102%	50%	140%	97%	50%	140%	91%	50%	140%

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Quality Assurance

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Mar 26, 2020			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
1,1-Dichloroethylene	1035936		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	112%	60%	130%	73%	50%	140%
Methylene Chloride	1035936		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	113%	60%	130%	111%	50%	140%
Trans- 1,2-Dichloroethylene	1035936		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	93%	60%	130%	110%	50%	140%
Methyl tert-butyl Ether	1035936		< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	97%	60%	130%	106%	50%	140%
1,1-Dichloroethane	1035936		< 0.02	< 0.02	NA	< 0.02	113%	50%	140%	106%	60%	130%	111%	50%	140%
Methyl Ethyl Ketone	1035936		< 0.50	< 0.50	NA	< 0.50	82%	50%	140%	99%	50%	140%	89%	50%	140%
Cis- 1,2-Dichloroethylene	1035936		< 0.02	< 0.02	NA	< 0.02	99%	50%	140%	106%	60%	130%	115%	50%	140%
Chloroform	1035936		< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	93%	60%	130%	118%	50%	140%
1,2-Dichloroethane	1035936		< 0.03	< 0.03	NA	< 0.03	112%	50%	140%	107%	60%	130%	94%	50%	140%
1,1,1-Trichloroethane	1035936		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	115%	60%	130%	90%	50%	140%
Carbon Tetrachloride	1035936		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	87%	60%	130%	106%	50%	140%
Benzene	1035936		< 0.02	< 0.02	NA	< 0.02	78%	50%	140%	93%	60%	130%	78%	50%	140%
1,2-Dichloropropane	1035936		< 0.03	< 0.03	NA	< 0.03	85%	50%	140%	78%	60%	130%	72%	50%	140%
Trichloroethylene	1035936		< 0.03	< 0.03	NA	< 0.03	103%	50%	140%	99%	60%	130%	100%	50%	140%
Bromodichloromethane	1035936		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	79%	60%	130%	97%	50%	140%
Methyl Isobutyl Ketone	1035936		< 0.50	< 0.50	NA	< 0.50	104%	50%	140%	87%	50%	140%	93%	50%	140%
1,1,2-Trichloroethane	1035936		< 0.04	< 0.04	NA	< 0.04	105%	50%	140%	105%	60%	130%	98%	50%	140%
Toluene	1035936		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	107%	60%	130%	100%	50%	140%
Dibromochloromethane	1035936		< 0.05	< 0.05	NA	< 0.05	83%	50%	140%	73%	60%	130%	95%	50%	140%
Ethylene Dibromide	1035936		< 0.04	< 0.04	NA	< 0.04	94%	50%	140%	98%	60%	130%	117%	50%	140%
Tetrachloroethylene	1035936		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	113%	60%	130%	87%	50%	140%
1,1,1,2-Tetrachloroethane	1035936		< 0.04	< 0.04	NA	< 0.04	104%	50%	140%	100%	60%	130%	112%	50%	140%
Chlorobenzene	1035936		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	119%	60%	130%	84%	50%	140%
Ethylbenzene	1035936		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	110%	60%	130%	106%	50%	140%
m & p-Xylene	1035936		< 0.05	< 0.05	NA	< 0.05	110%	50%	140%	107%	60%	130%	96%	50%	140%
Bromoform	1035936		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	81%	60%	130%	100%	50%	140%
Styrene	1035936		< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	104%	60%	130%	70%	50%	140%
1,1,2,2-Tetrachloroethane	1035936		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	103%	60%	130%	86%	50%	140%
o-Xylene	1035936		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	113%	60%	130%	79%	50%	140%
1,3-Dichlorobenzene	1035936		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	109%	60%	130%	105%	50%	140%
1,4-Dichlorobenzene	1035936		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	105%	60%	130%	94%	50%	140%
1,2-Dichlorobenzene	1035936		< 0.05	< 0.05	NA	< 0.05	82%	50%	140%	88%	60%	130%	89%	50%	140%
1,3-Dichloropropene (Cis + Trans)	1035936		< 0.04	< 0.04	NA	< 0.04	102%	50%	140%	108%	60%	130%	89%	50%	140%
n-Hexane	1035936		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	94%	60%	130%	103%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	1037345		< 5	< 5	NA	< 5	96%	60%	140%	101%	60%	140%	104%	60%	140%
F2 (C10 to C16)	1033535		< 10	< 10	NA	< 10	108%	60%	140%	99%	60%	140%	107%	60%	140%
F3 (C16 to C34)	1033535		< 50	< 50	NA	< 50	103%	60%	140%	94%	60%	140%	101%	60%	140%
F4 (C34 to C50)	1033535		< 50	< 50	NA	< 50	90%	60%	140%	91%	60%	140%	113%	60%	140%

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Quality Assurance

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Mar 26, 2020			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

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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QA Violation

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

RPT Date: Mar 26, 2020			REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Sample Id	Sample Description	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
				Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)											
Antimony	1036314	BH3-SS1	146%	70%	130%	99%	80%	120%	87%	70%	130%

Comments: NA signifies Not Applicable.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Antimony Reference recovery is outside method's acceptance limit by more than an absolute maximum of 10% however, all other QCs i.e. duplicate, blank, blank spike and matrix spike are within method's QC acceptance criteria.

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Method Summary

CLIENT NAME: EXP Services Inc | **AGAT WORK ORDER: 20T586006**

PROJECT: MRK-00258896-A0 | **ATTENTION TO: Corey Ferguson**

SAMPLING SITE: | **SAMPLED BY:**

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
Boron (Hot Water Extractable)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
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
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015 and SM 4500-CN- I	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	modified from MSA PART 3, CH 14 and SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER

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Method Summary

CLIENT NAME: EXP Services Inc | **AGAT WORK ORDER: 20T586006**

PROJECT: MRK-00258896-A0 | **ATTENTION TO: Corey Ferguson**

SAMPLING SITE: | **SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Hexachloroethane	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Gamma-Hexachlorocyclohexane	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE
Naphthalene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS

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Method Summary

CLIENT NAME: EXP Services Inc | **AGAT WORK ORDER: 20T586006**

PROJECT: MRK-00258896-A0 | **ATTENTION TO: Corey Ferguson**

SAMPLING SITE: | **SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Moisture Content	ORG-91-5106	Tier 1 Method	BALANCE
Naphthalene-d8	ORG-91-5106	modified from EPA SW-846 3541 & 8270E50	GC/MS
Acenaphthene-d10	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Chrysene-d12	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method, SW846 5035	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method, SW846 5035	P&T GC/FID
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
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F1 (C6 to 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
F2 (C10 to C16) minus Naphthalene	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
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS

AGAT Laboratories

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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586006

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Xylenes (Total)	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS

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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 #: 20T586006

Cooler Quantity:

Arrival Temperatures: 1.6 | 1.8 | 1.4 (Online)

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: Exp Services Inc.
Contact: Corey Ferguson
Address: 220 Commerce Valley Dr W Suite 110, Markham
Phone: 905-695-3217 Fax:
Reports to be sent to:
1. Email: corey.ferguson@exp.com
2. Email: andrea.fernandes@exp.com

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

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

Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ 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: MRK-00258896-A0
Site Location:
Sampled By: AF
AGAT Quote #: PO:
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 (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	O. Reg 153: Full Metals Scan	O. Reg 153: Regulation/Custom Metals	O. Reg 153: Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	O. Reg 153: Volatiles: ☒ VOC ☐ BTEX ☐ THM	O. Reg 153: PHCs F1 - F4	O. Reg 153: ABNs	O. Reg 153: PAHs	O. Reg 153: PCBs: ☐ Total ☐ Aroclors	O. Reg 153: Organochlorine Pesticides	O. Reg 153: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 153: Sewer Use	Potentially Hazardous or High Concentration (Y/N)
BH3-SS1	16/3/20	AM	3	S			X					X			X		X		
BH3-SS3	"	"	2	"								X	X						
BH2-SS1			3				X								X		X		
BH2-SS2		↓	2									X	X						
BH4-SS1		PM	2												X		X		
BH1-SS2		"	1				X												
BH1-SS4	↓	↓	2									X	X						
BH8-SS1	17/3/20	AM	3				X								X		X		
BH8-SS5	"	"	2									X	X						
BH4-SS1			3				X								X		X		
BH4-SS5	↓	↓	2	↓								X	X						

'20MAR18 5:11PM

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Andrea Fernandes Andrea	18/3/20	5:10 pm	SIMRAN		
Samples Relinquished By (Print Name and Sign):	Date	Time	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 1 of 2

N°: T101192

Document ID: DW-78-1511-010

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Date Issued: March 22, 2019

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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 #: 20T586006

Cooler Quantity:

Arrival Temperatures: 2.1 | 2.2 | (on ice)

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: EXP Services Inc.

Contact: Corey Ferguson

Address: 220 Commerce Valley Dr W Suite 110, Markham

Phone: 905-695-3217 Fax:

Reports to be sent to:

1. Email: corey.ferguson@exp.com
2. Email: andrea.fernandes@exp.com

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☒ Regulation 153/04 — Table 3 (Indicate One): ☒ Ind/Com ☐ Res/Park ☐ Agriculture

Soil Texture (Check One): ☒ Coarse ☐ Fine

☐ Sewer Use: ☐ Sanitary ☐ Storm

Region ______ (Indicate One)

☐ MISA

☐ Regulation 558

☐ CCME

☐ 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: MRK-0025896-A0

Site Location:

Sampled By: AF & CF

AGAT Quote #: PO:

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 (Y/N)	Metals and Inorganics	☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides)	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3 ☐ NO2 ☐ NO3+NO2	Volatiles: ☒ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use						Potentially Hazardous or High Concentration (Y/N)
SP1-1-20cm	17/3/20	PM	5	S			X						X	X		X		X									
SP2-3-0.5-0.7m	18/3/20	PM	5	S			X						X	X		X		X									

O. Reg 153

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Andrea Fernandes [signature]	18/3/20	5:40pm	SIMRAN [signature]		
Samples Relinquished By (Print Name and Sign):	Date	Time	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

'20 MAR 18 5:11PM

Page 2 of 2

Nº: T101186

Document ID: DIV-78-1511.010

Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT

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http://www.agatlabs.com

CLIENT NAME: **EXP Services Inc**
220 Commerce Valley Drive West,Suite 500
Markham, ON, ON L3T0A8
(905) 695-3217

ATTENTION TO: **Corey Ferguson**

PROJECT: **MRK-00258896-A0**

AGAT WORK ORDER: **20T586007**

SOIL ANALYSIS REVIEWED BY: **Nivine Basily, Inorganics Report Writer**

TRACE ORGANICS REVIEWED BY: **Inga Kuzmina, Trace Organics Lab Manager**

DATE REPORTED: **Mar 26, 2020**

PAGES (INCLUDING COVER): **13**

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 following analysis, unless expressly agreed otherwise in writing. Please contact your Client Project Manager if you require additional sample storage time.*
- *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 report shall not be reproduced or distributed, in whole or in part, without the prior written consent of AGAT Laboratories.*
- *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 information contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

		SAMPLE DESCRIPTION:		SED 1	SED 2
		SAMPLE TYPE:		Sediment	Sediment
		DATE SAMPLED:		2020-03-18	2020-03-18
Parameter	Unit	G / S	RDL	1036282	1036283
Antimony	µg/g	NV	0.8	<0.8	<0.8
Arsenic	µg/g	6	1	6	5
Barium	µg/g	NV	2	67	36
Beryllium	µg/g	NV	0.5	0.8	0.9
Boron	µg/g	NV	5	13	17
Boron (Hot Water Extractable)	µg/g	NA	0.10	0.64	0.61
Cadmium	µg/g	0.6	0.5	<0.5	<0.5
Chromium	µg/g	26	5	23	25
Cobalt	µg/g	50	0.5	13.3	13.4
Copper	µg/g	16	1	**29**	**31**
Lead	µg/g	31	1	14	7
Molybdenum	µg/g	NV	0.5	<0.5	<0.5
Nickel	µg/g	16	1	**28**	**30**
Selenium	µg/g	NV	0.4	<0.4	<0.4
Silver	µg/g	0.5	0.2	<0.2	<0.2
Thallium	µg/g	NV	0.4	<0.4	<0.4
Uranium	µg/g	NV	0.5	0.6	0.7
Vanadium	µg/g	NV	1	32	33
Zinc	µg/g	120	5	80	92
Chromium, Hexavalent	µg/g	NV	0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.1	0.040	<0.040	<0.040
Mercury	µg/g	0.2	0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	NA	0.005	0.508	1.46
Sodium Adsorption Ratio	NA	NA	NA	3.22	20.8
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.71	7.62

Certified By: Nivine Basily

AGAT Laboratories

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CANADA L4Z 1Y2
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FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2020-03-18 **DATE REPORTED: 2020-03-26**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Sediment - All Types of Property Uses
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.

1036282-1036283 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 prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Nivine Basily

AGAT Laboratories

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FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

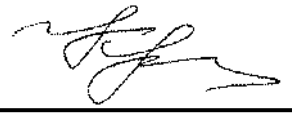
		SAMPLE DESCRIPTION:		SED 1	SED 2
		SAMPLE TYPE:		Sediment	Sediment
		DATE SAMPLED:		2020-03-18	2020-03-18
Parameter	Unit	G / S	RDL	1036282	1036283
Hexachloroethane	µg/g		0.01	<0.01	<0.01
Gamma-Hexachlorocyclohexane	µg/g		0.005	<0.005	<0.005
Heptachlor	µg/g		0.005	<0.005	<0.005
Aldrin	µg/g	0.002	0.002	<0.002	<0.002
Heptachlor Epoxide	µg/g	0.005	0.005	<0.005	<0.005
Endosulfan	µg/g		0.005	<0.005	<0.005
Chlordane	µg/g	0.007	0.007	<0.007	<0.007
DDE	µg/g	0.005	0.005	<0.005	<0.005
DDD	µg/g	0.008	0.007	<0.007	<0.007
DDT	µg/g	0.007	0.007	<0.007	<0.007
Dieldrin	µg/g	0.002	0.002	<0.002	<0.002
Endrin	µg/g	0.003	0.003	<0.003	<0.003
Methoxychlor	µg/g		0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.02	0.002	<0.002	<0.002
Hexachlorobutadiene	µg/g		0.01	<0.01	<0.01
Moisture Content	%		0.1	17.2	16.7
Surrogate	**Unit**	**Acceptable Limits**			
TCMX	%	50-140		98	90
Decachlorobiphenyl	%	50-140		101	97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Sediment - All Types of Property Uses
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.

1036282-1036283 Results are based on the dry weight of the soil.
DDT total is a calculated parameter. The calculated value is the sum of op'DDT and pp'DDT.
DDD total is a calculated parameter. The calculated value is the sum of op'DDD and pp'DDD.
DDE total is a calculated parameter. The calculated value is the sum of op'DDE and pp'DDE.
Endosulfan total is a calculated parameter. The calculated value is the sum of Endosulfan I and Endosulfan II.
Chlordane total is a calculated parameter. The calculated value is the sum of Alpha-Chlordane and Gamma-Chlordane.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-03-18

DATE REPORTED: 2020-03-26

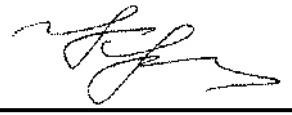
		SAMPLE DESCRIPTION:		SED 1	SED 2
		SAMPLE TYPE:		Sediment	Sediment
		DATE SAMPLED:		2020-03-18	2020-03-18
Parameter	Unit	G / S	RDL	1036282	1036283
Naphthalene	µg/g	NV	0.05	<0.05	<0.05
Acenaphthylene	µg/g	NV	0.05	<0.05	<0.05
Acenaphthene	µg/g	NV	0.05	<0.05	<0.05
Fluorene	µg/g	0.19	0.05	<0.05	<0.05
Phenanthrene	µg/g	0.56	0.05	0.07	0.13
Anthracene	µg/g	0.22	0.05	<0.05	<0.05
Fluoranthene	µg/g	0.75	0.05	0.15	0.24
Pyrene	µg/g	0.49	0.05	0.11	0.20
Benz(a)anthracene	µg/g	0.32	0.05	0.05	0.08
Chrysene	µg/g	0.34	0.05	0.08	0.12
Benzo(b)fluoranthene	µg/g	NV	0.05	0.06	0.11
Benzo(k)fluoranthene	µg/g	0.24	0.05	0.06	0.11
Benzo(a)pyrene	µg/g	0.37	0.05	0.05	0.08
Indeno(1,2,3-cd)pyrene	µg/g	0.2	0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.06	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.17	0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	NV	0.05	<0.05	<0.05
Moisture Content	%		0.1	17.2	16.7
Surrogate	**Unit**	**Acceptable Limits**			
Naphthalene-d8	%	50-140		101	109
Acenaphthene-d10	%	50-140		113	111
Chrysene-d12	%	50-140		112	114

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Sediment - All Types of Property Uses
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.

1036282-1036283 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:



AGAT Laboratories

Guideline Violation

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

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CLIENT NAME: EXP Services Inc

ATTENTION TO: Corey Ferguson

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1036282	SED 1	ON T8 SD	O. Reg. 153(511) - Metals & Inorganics (Soil)	Copper	µg/g	16	29
1036282	SED 1	ON T8 SD	O. Reg. 153(511) - Metals & Inorganics (Soil)	Nickel	µg/g	16	28
1036283	SED 2	ON T8 SD	O. Reg. 153(511) - Metals & Inorganics (Soil)	Copper	µg/g	16	31
1036283	SED 2	ON T8 SD	O. Reg. 153(511) - Metals & Inorganics (Soil)	Nickel	µg/g	16	30

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Quality Assurance

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Mar 26, 2020			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 & Inorganics (Soil)															
Antimony	1036314		<0.8	<0.8	NA	< 0.8	146%	70%	130%	99%	80%	120%	87%	70%	130%
Arsenic	1036314		7	7	1.9%	< 1	113%	70%	130%	105%	80%	120%	101%	70%	130%
Barium	1036314		80	82	2.7%	< 2	113%	70%	130%	104%	80%	120%	96%	70%	130%
Beryllium	1036314		0.7	0.7	NA	< 0.5	101%	70%	130%	94%	80%	120%	93%	70%	130%
Boron	1036314		12	12	NA	< 5	99%	70%	130%	105%	80%	120%	100%	70%	130%
Boron (Hot Water Extractable)	1036314		0.39	0.39	NA	< 0.10	96%	60%	140%	97%	70%	130%	94%	60%	140%
Cadmium	1036314		<0.5	<0.5	NA	< 0.5	109%	70%	130%	99%	80%	120%	96%	70%	130%
Chromium	1036314		22	23	NA	< 5	106%	70%	130%	98%	80%	120%	95%	70%	130%
Cobalt	1036314		12.1	12.1	0.0%	< 0.5	96%	70%	130%	101%	80%	120%	93%	70%	130%
Copper	1036314		36	36	0.7%	< 1	90%	70%	130%	99%	80%	120%	80%	70%	130%
Lead	1036314		10	10	3.3%	< 1	108%	70%	130%	90%	80%	120%	86%	70%	130%
Molybdenum	1036314		0.8	0.8	NA	< 0.5	97%	70%	130%	101%	80%	120%	97%	70%	130%
Nickel	1036314		25	25	0.4%	< 1	96%	70%	130%	103%	80%	120%	91%	70%	130%
Selenium	1036314		<0.4	<0.4	NA	< 0.4	97%	70%	130%	102%	80%	120%	97%	70%	130%
Silver	1036314		<0.2	<0.2	NA	< 0.2	106%	70%	130%	101%	80%	120%	91%	70%	130%
Thallium	1036314		<0.4	<0.4	NA	< 0.4	93%	70%	130%	99%	80%	120%	94%	70%	130%
Uranium	1036314		<0.5	<0.5	NA	< 0.5	99%	70%	130%	101%	80%	120%	101%	70%	130%
Vanadium	1036314		32	32	0.4%	< 1	105%	70%	130%	102%	80%	120%	100%	70%	130%
Zinc	1036314		64	65	0.7%	< 5	101%	70%	130%	104%	80%	120%	95%	70%	130%
Chromium, Hexavalent	1035803		< 0.2	< 0.2	NA	< 0.2	89%	70%	130%	89%	80%	120%	82%	70%	130%
Cyanide, Free	1035801		<0.040	<0.040	NA	< 0.040	87%	70%	130%	103%	80%	120%	97%	70%	130%
Mercury	1036314		<0.10	<0.10	NA	< 0.10	112%	70%	130%	100%	80%	120%	104%	70%	130%
Electrical Conductivity (2:1)	1036314		0.994	0.986	0.9%	< 0.005	116%	80%	120%						
Sodium Adsorption Ratio	1036314		2.14	2.15	0.2%	NA									
pH, 2:1 CaCl2 Extraction	1037342		7.51	7.48	0.4%	NA	101%	80%	120%						

Comments: NA signifies Not Applicable.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Antimony Reference recovery is outside method's acceptance limit by more than an absolute maximum of 10% however, all other QCs i.e. duplicate, blank, blank spike and matrix spike are within method's QC acceptance criteria.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Mar 26, 2020			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	1035907		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	107%	50%	140%	118%	50%	140%
Acenaphthylene	1035907		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	104%	50%	140%	116%	50%	140%
Acenaphthene	1035907		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	102%	50%	140%	115%	50%	140%
Fluorene	1035907		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	102%	50%	140%	114%	50%	140%
Phenanthrene	1035907		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	107%	50%	140%	108%	50%	140%
Anthracene	1035907		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	99%	50%	140%	94%	50%	140%
Fluoranthene	1035907		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	102%	50%	140%	113%	50%	140%
Pyrene	1035907		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	102%	50%	140%	112%	50%	140%
Benz(a)anthracene	1035907		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	94%	50%	140%	110%	50%	140%
Chrysene	1035907		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	103%	50%	140%	110%	50%	140%
Benzo(b)fluoranthene	1035907		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	94%	50%	140%	79%	50%	140%
Benzo(k)fluoranthene	1035907		< 0.05	< 0.05	NA	< 0.05	80%	50%	140%	99%	50%	140%	105%	50%	140%
Benzo(a)pyrene	1035907		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	101%	50%	140%	113%	50%	140%
Indeno(1,2,3-cd)pyrene	1035907		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	75%	50%	140%	80%	50%	140%
Dibenz(a,h)anthracene	1035907		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	86%	50%	140%	84%	50%	140%
Benzo(g,h,i)perylene	1035907		< 0.05	< 0.05	NA	< 0.05	89%	50%	140%	77%	50%	140%	74%	50%	140%
O. Reg. 153(511) - OC Pesticides (Soil)															
Hexachloroethane	1032618		< 0.01	< 0.01	NA	< 0.01	94%	50%	140%	90%	50%	140%	86%	50%	140%
Gamma-Hexachlorocyclohexane	1032618		< 0.005	< 0.005	NA	< 0.005	95%	50%	140%	92%	50%	140%	99%	50%	140%
Heptachlor	1032618		< 0.005	< 0.005	NA	< 0.005	102%	50%	140%	107%	50%	140%	104%	50%	140%
Aldrin	1032618		< 0.005	< 0.005	NA	< 0.005	102%	50%	140%	98%	50%	140%	90%	50%	140%
Heptachlor Epoxide	1032618		< 0.005	< 0.005	NA	< 0.005	105%	50%	140%	93%	50%	140%	104%	50%	140%
Endosulfan	1032618		< 0.005	< 0.005	NA	< 0.005	103%	50%	140%	97%	50%	140%	102%	50%	140%
Chlordane	1032618		< 0.007	< 0.007	NA	< 0.007	98%	50%	140%	99%	50%	140%	98%	50%	140%
DDE	1032618		< 0.007	< 0.007	NA	< 0.007	104%	50%	140%	102%	50%	140%	105%	50%	140%
DDD	1032618		< 0.007	< 0.007	NA	< 0.007	103%	50%	140%	89%	50%	140%	96%	50%	140%
DDT	1032618		< 0.007	< 0.007	NA	< 0.007	92%	50%	140%	95%	50%	140%	96%	50%	140%
Dieldrin	1032618		< 0.005	< 0.005	NA	< 0.005	101%	50%	140%	98%	50%	140%	97%	50%	140%
Endrin	1032618		< 0.005	< 0.005	NA	< 0.005	105%	50%	140%	97%	50%	140%	107%	50%	140%
Methoxychlor	1032618		< 0.005	< 0.005	NA	< 0.005	90%	50%	140%	98%	50%	140%	102%	50%	140%
Hexachlorobenzene	1032618		< 0.005	< 0.005	NA	< 0.005	106%	50%	140%	90%	50%	140%	90%	50%	140%
Hexachlorobutadiene	1032618		< 0.01	< 0.01	NA	< 0.01	98%	50%	140%	95%	50%	140%	89%	50%	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:

AGAT Laboratories

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QA Violation

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

RPT Date: Mar 26, 2020			REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Sample Id	Sample Description	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
				Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)											
Antimony		SED 1	146%	70%	130%	99%	80%	120%	87%	70%	130%

Comments: NA signifies Not Applicable.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Antimony Reference recovery is outside method's acceptance limit by more than an absolute maximum of 10% however, all other QCs i.e. duplicate, blank, blank spike and matrix spike are within method's QC acceptance criteria.

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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

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
Boron (Hot Water Extractable)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
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
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015 and SM 4500-CN- I	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	modified from MSA PART 3, CH 14 and SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER

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Method Summary

CLIENT NAME: EXP Services Inc | **AGAT WORK ORDER: 20T586007**

PROJECT: MRK-00258896-A0 | **ATTENTION TO: Corey Ferguson**

SAMPLING SITE: | **SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Hexachloroethane	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Gamma-Hexachlorocyclohexane	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE
Naphthalene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS

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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 20T586007

PROJECT: MRK-00258896-A0

ATTENTION TO: Corey Ferguson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Moisture Content	ORG-91-5106	Tier 1 Method	BALANCE
Naphthalene-d8	ORG-91-5106	modified from EPA SW-846 3541 & 8270E50	GC/MS
Acenaphthene-d10	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS
Chrysene-d12	ORG-91-5106	modified from EPA SW-846 3541 & 8270E	GC/MS

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 #: 20T586007

Cooler Quantity:

Arrival Temperatures: 5.6 | 5.7 | 1 (ambient)

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: EXP Services Inc.
Contact: Corey Ferguson
Address: 220 Commerce Valley Dr W Suite 110, Markham
Phone: 905 695 3217 Fax:
Reports to be sent to:
1. Email: corey.ferguson@exp.com
2. Email: andrea.fernandes@exp.com

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

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

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

☐ Sewer Use
☐ Sanitary
☐ Storm

Region _____ *Indicate One*
☐ MISA

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

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ 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: MRK-00258896-A0
Site Location:
Sampled By: AF + CF
AGAT Quote #: _____ PO: _____
Please note: If quotation number is not provided, client will be billed full price for analysis.

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

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

Invoice Information:

Bill To Same: Yes ☒ No ☐

Company:
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 (Y/N)	O. Reg 153: Metals and Inorganics	All Metals / 153 Metals (excl Hydrides) / Hydride Metals / 153 Metals (Incl. Hydrides)	ORPs: B-HWS, Cl, CN, Cr^{6+}, EC, FOC, Hg, pH, SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: TP, NH_3, TKN, NO_3, NO_2, NO_3+NO_2	Volatiles: VOC, BTEX, THM	PHCs F1 - F4	ABNs	PAHs	PCBs: Total, Aroclors	Organochlorine Pesticides	TCLP: M&I, VOCs, ABNs, B(a)P, PCBs	Sewer Use	OCPs					Potentially Hazardous or High Concentration (Y/N)
SED 1	18/3/20	PM	3	SD			X									X					X				
SED 2	↓	↓	↓	↓			X									X					X				

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Andrea Fernandes Andrea	18/3/20	5:00 pm	SIMRAN		

'20 MAR 18 5:11 PM

Page 1 of 1

N°: T 101191

Document ID: DW78 1511 016

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

AGAT Laboratories

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CLIENT NAME: EXP SERVICES INC
220 Commerce Valley Drive West,Suite 500
Markham, ON, ON L3T0A8
(905) 695-3217
ATTENTION TO: Amanda Catenaro
PROJECT: GTR-00258896-E0
AGAT WORK ORDER: 21T817791
SOIL ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Lab Manager
DATE REPORTED: Oct 25, 2021
PAGES (INCLUDING COVER): 17
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.*

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Certificate of Analysis

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill Blvd, Oakville

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

DATE RECEIVED: 2021-10-19

DATE REPORTED: 2021-10-25

				SAMPLE DESCRIPTION:	SED 101	SED 102	SED 102-0	SED 103
				SAMPLE TYPE:	Sediment	Sediment	Sediment	Sediment
				DATE SAMPLED:	2021-10-19 09:30	2021-10-19 08:45	2021-10-19 08:45	2021-10-19 08:15
Parameter	Unit	G / S	RDL		3106279	3106281	3106282	3106294
Antimony	µg/g	1.3	0.8		<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1		6	18	**19**	6
Barium	µg/g	220	2.0		48.6	53.0	53.3	63.0
Beryllium	µg/g	2.5	0.4		1.0	<0.4	0.4	0.8
Boron	µg/g	36	5		14	<5	5	13
Cadmium	µg/g	1.2	0.5		<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	5		22	17	16	23
Cobalt	µg/g	22	0.5		12.0	4.0	4.4	11.1
Copper	µg/g	92	1.0		33.2	22.2	22.1	29.2
Lead	µg/g	120	1		13	79	72	16
Molybdenum	µg/g	2	0.5		<0.5	<0.5	<0.5	0.7
Nickel	µg/g	82	1		28	10	10	26
Selenium	µg/g	1.5	0.8		<0.8	0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5		<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5		<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50		0.57	0.57	0.50	0.66
Vanadium	µg/g	86	0.4		29.6	20.8	21.7	31.0
Zinc	µg/g	290	5		77	48	47	120

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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 *)

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Certificate of Analysis

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill Blvd, Oakville

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2021-10-19

DATE REPORTED: 2021-10-25

		SAMPLE DESCRIPTION:		GS1	GS1-0	GS2	GS3
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-10-19 10:15	2021-10-19 10:15	2021-10-19 11:00	2021-10-19 10:00
Parameter	Unit	G / S	RDL	3106243	3106246	3106249	3106250
Hexachloroethane	µg/g	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan I	µg/g		0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan II	µg/g		0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005
Alpha-Chlordane	µg/g		0.005	<0.005	<0.005	<0.005	<0.005
gamma-Chlordane	µg/g		0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007
op'-DDE	ug/g		0.005	<0.005	<0.005	<0.005	<0.005
pp'-DDE	µg/g		0.005	0.145	0.193	0.007	<0.005
DDE	µg/g	0.05	0.007	**0.145**	**0.193**	0.007	<0.007
op'-DDD	µg/g		0.005	0.006	0.005	<0.005	<0.005
pp'-DDD	µg/g		0.005	0.017	0.022	<0.005	<0.005
DDD	µg/g	0.05	0.007	0.023	0.027	<0.007	<0.007
op'-DDT	µg/g		0.005	0.011	0.014	<0.005	<0.005
pp'-DDT	µg/g		0.005	0.056	0.074	0.005	<0.005
DDT (Total)	µg/g	1.4	0.007	0.067	0.088	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.02	0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	16.2	17.3	16.3	13.4
wet weight OC	g		0.01	10.67	10.85	10.76	10.80

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Certificate of Analysis

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill Blvd, Oakville

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2021-10-19

DATE REPORTED: 2021-10-25

		SAMPLE DESCRIPTION:	GS1	GS1-0	GS2	GS3
		SAMPLE TYPE:	Soil	Soil	Soil	Soil
		DATE SAMPLED:	2021-10-19 10:15	2021-10-19 10:15	2021-10-19 11:00	2021-10-19 10:00
Surrogate	Unit	Acceptable Limits	3106243	3106246	3106249	3106250
TCMX	%	50-140	96	108	75	92
Decachlorobiphenyl	%	50-140	115	109	92	97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

3106243-3106250 Results are based on the dry weight of the soil.
DDT total is a calculated parameter. The calculated value is the sum of op'DDT and pp'DDT.
DDD total is a calculated parameter. The calculated value is the sum of op'DDD and pp'DDD.
DDE total is a calculated parameter. The calculated value is the sum of op'DDE and pp'DDE.
Endosulfan total is a calculated parameter. The calculated value is the sum of Endosulfan I and Endosulfan II.
Chlordane total is a calculated parameter. The calculated value is the sum of Alpha-Chlordane and Gamma-Chlordane.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

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Certificate of Analysis

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill Blvd, Oakville

O. Reg. 153(511) - OC Pesticides (Water)

DATE RECEIVED: 2021-10-19

DATE REPORTED: 2021-10-25

		SAMPLE DESCRIPTION:		MW 103	MW 1030
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2021-10-19 12:00	2021-10-19 12:00
Parameter	**Unit**	**G / S**	**RDL**	**3106300**	**3106302**
Gamma-Hexachlorocyclohexane	µg/L	0.95	0.01	<0.01	<0.01
Heptachlor	µg/L	0.038	0.01	<0.01	<0.01
Aldrin	µg/L	0.35	0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	0.038	0.01	<0.01	<0.01
Endosulfan I	µg/L		0.05	<0.05	<0.05
Endosulfan II	µg/L		0.05	<0.05	<0.05
Endosulfan	µg/L	0.56	0.05	<0.05	<0.05
alpha - chlordane	µg/L		0.04	<0.04	<0.04
gamma-Chlordane	µg/L		0.04	<0.04	<0.04
Chlordane	µg/L	0.06	0.04	<0.04	<0.04
op'-DDE	µg/L		0.01	<0.01	<0.01
pp'-DDE	µg/L		0.01	<0.01	<0.01
DDE	µg/L	10	0.01	<0.01	<0.01
op'-DDD	µg/L		0.05	<0.05	<0.05
pp'-DDD	µg/L		0.05	<0.05	<0.05
DDD	µg/L	1.8	0.05	<0.05	<0.05
op'-DDT	µg/L		0.04	<0.04	<0.04
pp'-DDT	µg/L		0.05	<0.05	<0.05
DDT	µg/L	0.05	0.04	<0.04	<0.04
Dieldrin	µg/L	0.35	0.02	<0.02	<0.02
Endrin	µg/L	0.36	0.05	<0.05	<0.05
Methoxychlor	µg/L	0.3	0.04	<0.04	<0.04
Hexachlorobenzene	ug/L	1	0.01	<0.01	<0.01
Hexachlorobutadiene	ug/L	0.44	0.01	<0.01	<0.01
Hexachloroethane	ug/L	2.1	0.01	<0.01	<0.01
Surrogate	**Unit**	**Acceptable Limits**			
TCMX	%	50-140		88	85
Decachlorobiphenyl	%	60-140		112	115

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill Blvd, Oakville

O. Reg. 153(511) - OC Pesticides (Water)

DATE RECEIVED: 2021-10-19 **DATE REPORTED: 2021-10-25**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Ground Water - All Types of Property Uses
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.

3106300-3106302 DDT total is a calculated parameter. The calculated value is the sum of op'DDT and pp'DDT.
DDD total is a calculated parameter. The calculated value is the sum of op'DDD and pp'DDD.
DDE total is a calculated parameter. The calculated value is the sum of op'DDE and pp'DDE.
Endosulfan total is a calculated parameter. The calculated value is the sum of Endosulfan I and Endosulfan II.
Chlordane total is a calculated parameter. The calculated value is the sum of Alpha-Chlordane and Gamma-Chlordane.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill Blvd, Oakville

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

DATE RECEIVED: 2021-10-19

DATE REPORTED: 2021-10-25

		SAMPLE DESCRIPTION:		MW 103	MW 1030
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2021-10-19 12:00	2021-10-19 12:00
Parameter	Unit	G / S	RDL	3106300	3106302
Dissolved Antimony	µg/L	6	1.0	<1.0	<1.0
Dissolved Arsenic	µg/L	25	1.0	1.9	1.9
Dissolved Barium	µg/L	1000	2.0	92.1	90.9
Dissolved Beryllium	µg/L	4	0.50	<0.50	<0.50
Dissolved Boron	µg/L	5000	10.0	338	341
Dissolved Cadmium	µg/L	2.1	0.20	<0.20	<0.20
Dissolved Chromium	µg/L	50	2.0	4.8	4.9
Dissolved Cobalt	µg/L	3.8	0.50	0.85	0.92
Dissolved Copper	µg/L	69	1.0	1.5	1.5
Dissolved Lead	µg/L	10	0.50	2.20	1.30
Dissolved Molybdenum	µg/L	70	0.50	<0.50	<0.50
Dissolved Nickel	µg/L	100	3.0	<3.0	<3.0
Dissolved Selenium	µg/L	10	1.0	2.9	2.4
Dissolved Silver	µg/L	1.2	0.20	<0.20	<0.20
Dissolved Thallium	µg/L	2	0.30	<0.30	<0.30
Dissolved Uranium	µg/L	20	0.50	1.67	1.70
Dissolved Vanadium	µg/L	6.2	0.40	<0.40	<0.40
Dissolved Zinc	µg/L	890	5.0	6.0	<5.0

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Ground Water - All Types of Property Uses
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.

3106300-3106302 Metals analysis completed on a filtered sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Exceedance Summary

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Amanda Catenaro

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
3106243	GS1	ON T8 S RPI/ICC	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	µg/g	0.05	0.145
3106246	GS1-0	ON T8 S RPI/ICC	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	µg/g	0.05	0.193
3106282	SED 102-0	ON T8 S RPI/ICC	O. Reg. 153(511) - Metals (Including Hydrides) (Soil)	Arsenic	µg/g	18	19

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill

Soil Analysis

RPT Date: Oct 25, 2021			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	3102764		<0.8	<0.8	NA	< 0.8	130%	70%	130%	107%	80%	120%	107%	70%	130%
Arsenic	3102764		1	1	NA	< 1	113%	70%	130%	111%	80%	120%	111%	70%	130%
Barium	3102764		8.9	9.0	NA	< 2.0	98%	70%	130%	104%	80%	120%	93%	70%	130%
Beryllium	3102764		<0.4	<0.4	NA	< 0.4	116%	70%	130%	105%	80%	120%	109%	70%	130%
Boron	3102764		<5	<5	NA	< 5	83%	70%	130%	100%	80%	120%	98%	70%	130%
Cadmium	3102764		<0.5	<0.5	NA	< 0.5	115%	70%	130%	104%	80%	120%	110%	70%	130%
Chromium	3102764		<5	<5	NA	< 5	104%	70%	130%	98%	80%	120%	99%	70%	130%
Cobalt	3102764		1.7	1.7	NA	< 0.5	91%	70%	130%	100%	80%	120%	92%	70%	130%
Copper	3102764		6.7	6.9	1.8%	< 1.0	100%	70%	130%	100%	80%	120%	87%	70%	130%
Lead	3102764		2	2	NA	< 1	110%	70%	130%	97%	80%	120%	93%	70%	130%
Molybdenum	3102764		<0.5	<0.5	NA	< 0.5	109%	70%	130%	116%	80%	120%	116%	70%	130%
Nickel	3102764		2	2	NA	< 1	100%	70%	130%	110%	80%	120%	99%	70%	130%
Selenium	3102764		<0.8	<0.8	NA	< 0.8	125%	70%	130%	108%	80%	120%	104%	70%	130%
Silver	3102764		<0.5	<0.5	NA	< 0.5	97%	70%	130%	100%	80%	120%	99%	70%	130%
Thallium	3102764		<0.5	<0.5	NA	< 0.5	95%	70%	130%	113%	80%	120%	108%	70%	130%
Uranium	3102764		<0.50	<0.50	NA	< 0.50	99%	70%	130%	101%	80%	120%	99%	70%	130%
Vanadium	3102764		11.5	12.7	9.7%	< 0.4	96%	70%	130%	96%	80%	120%	99%	70%	130%
Zinc	3102764		9	9	NA	< 5	98%	70%	130%	98%	80%	120%	98%	70%	130%

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

Certified By:

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill

Trace Organics Analysis

RPT Date: Oct 25, 2021			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) - OC Pesticides (Soil)															
Hexachloroethane	3106075		< 0.01	< 0.01	NA	< 0.01	81%	50%	140%	101%	50%	140%	81%	50%	140%
Gamma-Hexachlorocyclohexane	3106075		< 0.005	< 0.005	NA	< 0.005	93%	50%	140%	83%	50%	140%	92%	50%	140%
Heptachlor	3106075		< 0.005	< 0.005	NA	< 0.005	83%	50%	140%	102%	50%	140%	108%	50%	140%
Aldrin	3106075		< 0.005	< 0.005	NA	< 0.005	93%	50%	140%	102%	50%	140%	84%	50%	140%
Heptachlor Epoxide	3106075		< 0.005	< 0.005	NA	< 0.005	94%	50%	140%	104%	50%	140%	87%	50%	140%
Endosulfan I	3106075		< 0.005	< 0.005	NA	< 0.005	92%	50%	140%	96%	50%	140%	80%	50%	140%
Endosulfan II	3106075		< 0.005	< 0.005	NA	< 0.005	94%	50%	140%	99%	50%	140%	82%	50%	140%
Alpha-Chlordane	3106075		< 0.005	< 0.005	NA	< 0.005	92%	50%	140%	101%	50%	140%	85%	50%	140%
gamma-Chlordane	3106075		< 0.005	< 0.005	NA	< 0.005	90%	50%	140%	99%	50%	140%	83%	50%	140%
op'-DDE	3106075		< 0.005	< 0.005	NA	< 0.005	87%	50%	140%	102%	50%	140%	87%	50%	140%
pp'-DDE	3106075		0.106	0.089	17.4%	< 0.005	91%	50%	140%	109%	50%	140%	82%	50%	140%
op'-DDD	3106075		< 0.005	< 0.005	NA	< 0.005	101%	50%	140%	114%	50%	140%	99%	50%	140%
pp'-DDD	3106075		< 0.005	< 0.005	NA	< 0.005	109%	50%	140%	110%	50%	140%	106%	50%	140%
op'-DDT	3106075		< 0.005	< 0.005	NA	< 0.005	97%	50%	140%	109%	50%	140%	101%	50%	140%
pp'-DDT	3106075		0.030	0.025	18.2%	< 0.005	85%	50%	140%	106%	50%	140%	107%	50%	140%
Dieldrin	3106075		< 0.005	< 0.005	NA	< 0.005	91%	50%	140%	104%	50%	140%	85%	50%	140%
Endrin	3106075		< 0.005	< 0.005	NA	< 0.005	85%	50%	140%	108%	50%	140%	108%	50%	140%
Methoxychlor	3106075		< 0.005	< 0.005	NA	< 0.005	81%	50%	140%	116%	50%	140%	104%	50%	140%
Hexachlorobenzene	3106075		< 0.005	< 0.005	NA	< 0.005	99%	50%	140%	95%	50%	140%	86%	50%	140%
Hexachlorobutadiene	3106075		< 0.01	< 0.01	NA	< 0.01	96%	50%	140%	98%	50%	140%	82%	50%	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).

O. Reg. 153(511) - OC Pesticides (Water)															
Gamma-Hexachlorocyclohexane	3096062		< 0.01	< 0.01	NA	< 0.01	92%	50%	140%	81%	50%	140%	75%	50%	140%
Heptachlor	3096062		< 0.01	< 0.01	NA	< 0.01	83%	50%	140%	108%	50%	140%	109%	50%	140%
Aldrin	3096062		< 0.01	< 0.01	NA	< 0.01	93%	50%	140%	104%	50%	140%	92%	50%	140%
Heptachlor Epoxide	3096062		< 0.01	< 0.01	NA	< 0.01	94%	50%	140%	107%	50%	140%	96%	50%	140%
Endosulfan I	3096062		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	96%	50%	140%	91%	50%	140%
Endosulfan II	3096062		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	102%	50%	140%	93%	50%	140%
alpha - chlordane	3096062		< 0.1	< 0.1	NA	< 0.04	90%	50%	140%	102%	50%	140%	97%	50%	140%
gamma-Chlordane	3096062		< 0.2	< 0.2	NA	< 0.04	91%	50%	140%	99%	50%	140%	94%	50%	140%
op'-DDE	3096062		< 0.01	< 0.01	NA	< 0.01	87%	50%	140%	100%	50%	140%	95%	50%	140%
pp'-DDE	3096062		< 0.01	< 0.01	NA	< 0.01	91%	50%	140%	108%	50%	140%	104%	50%	140%
op'-DDD	3096062		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	107%	50%	140%	109%	50%	140%
pp'-DDD	3096062		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	105%	50%	140%	112%	50%	140%
op'-DDT	3096062		< 0.04	< 0.04	NA	< 0.04	85%	50%	140%	101%	50%	140%	105%	50%	140%
pp'-DDT	3096062		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	104%	50%	140%	99%	50%	140%
Dieldrin	3096062		< 0.02	< 0.02	NA	< 0.02	91%	50%	140%	106%	50%	140%	97%	50%	140%
Endrin	3096062		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	106%	50%	140%	101%	50%	140%

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill

Trace Organics Analysis (Continued)

RPT Date: Oct 25, 2021			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
Methoxychlor	3096062		< 0.04	< 0.04	NA	< 0.04	82%	50%	140%	109%	50%	140%	105%	50%	140%
Hexachlorobenzene	3096062		< 0.01	< 0.01	NA	< 0.01	99%	50%	140%	96%	50%	140%	89%	50%	140%
Hexachlorobutadiene	3096062		< 0.01	< 0.01	NA	< 0.01	96%	50%	140%	108%	50%	140%	103%	50%	140%
Hexachloroethane	3096062		< 0.01	< 0.01	NA	< 0.01	82%	50%	140%	93%	50%	140%	83%	50%	140%

Certified By:

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Quality Assurance

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill

Water Analysis

RPT Date: Oct 25, 2021			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	3104953		<1.0	<1.0	NA	< 1.0	97%	70%	130%	100%	80%	120%	99%	70%	130%
Dissolved Arsenic	3104953		3.0	2.8	NA	< 1.0	97%	70%	130%	98%	80%	120%	106%	70%	130%
Dissolved Barium	3104953		44.5	45.2	1.6%	< 2.0	100%	70%	130%	98%	80%	120%	98%	70%	130%
Dissolved Beryllium	3104953		<0.50	<0.50	NA	< 0.50	99%	70%	130%	98%	80%	120%	103%	70%	130%
Dissolved Boron	3104953		171	175	2.3%	< 10.0	101%	70%	130%	102%	80%	120%	108%	70%	130%
Dissolved Cadmium	3104953		<0.20	<0.20	NA	< 0.20	99%	70%	130%	102%	80%	120%	102%	70%	130%
Dissolved Chromium	3104953		<2.0	<2.0	NA	< 2.0	100%	70%	130%	98%	80%	120%	103%	70%	130%
Dissolved Cobalt	3104953		<0.50	<0.50	NA	< 0.50	93%	70%	130%	97%	80%	120%	103%	70%	130%
Dissolved Copper	3104953		1.5	1.4	NA	< 1.0	99%	70%	130%	100%	80%	120%	104%	70%	130%
Dissolved Lead	3104953		<0.50	<0.50	NA	< 0.50	92%	70%	130%	97%	80%	120%	96%	70%	130%
Dissolved Molybdenum	3104953		2.40	2.50	NA	< 0.50	98%	70%	130%	98%	80%	120%	103%	70%	130%
Dissolved Nickel	3104953		<3.0	<3.0	NA	< 3.0	99%	70%	130%	101%	80%	120%	106%	70%	130%
Dissolved Selenium	3104953		1.1	<1.0	NA	< 1.0	96%	70%	130%	92%	80%	120%	100%	70%	130%
Dissolved Silver	3104953		<0.20	<0.20	NA	< 0.20	97%	70%	130%	100%	80%	120%	105%	70%	130%
Dissolved Thallium	3104953		<0.30	<0.30	NA	< 0.30	96%	70%	130%	102%	80%	120%	103%	70%	130%
Dissolved Uranium	3104953		0.65	0.60	NA	< 0.50	94%	70%	130%	95%	80%	120%	96%	70%	130%
Dissolved Vanadium	3104953		<0.40	<0.40	NA	< 0.40	93%	70%	130%	96%	80%	120%	99%	70%	130%
Dissolved Zinc	3104953		<5.0	<5.0	NA	< 5.0	99%	70%	130%	102%	80%	120%	109%	70%	130%

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

Certified By:

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill

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

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Hexachloroethane	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Gamma-Hexachlorocyclohexane	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Heptachlor	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Aldrin	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Heptachlor Epoxide	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Endosulfan I	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Endosulfan II	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Endosulfan	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	CALCULATION
Alpha-Chlordane	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
gamma-Chlordane	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Chlordane	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	CALCULATION
op'-DDE	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
pp'-DDE	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
DDE	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
op'-DDD	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
pp'-DDD	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
DDD	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	CALCULATION
op'-DDT	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
pp'-DDT	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
DDT (Total)	ORG-91-5113	modified from EPA 3570, 3620C & 8081B	CALCULATION
Dieldrin	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Endrin	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Methoxychlor	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Hexachlorobenzene	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Hexachlorobutadiene	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
TCMX	ORG-91-5112	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Decachlorobiphenyl	ORG-91-5113	modified from EPA 3570 & 3620C & 8081B	GC/ECD
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE

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Method Summary

CLIENT NAME: EXP SERVICES INC

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PROJECT: GTR-00258896-E0

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
wet weight OC	ORG-91-5113		BALANCE
Gamma-Hexachlorocyclohexane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Heptachlor	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Aldrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Heptachlor Epoxide	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan I	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan II	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endosulfan	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
alpha - chlordane	ORG-91-5112	modified from EPA SW846 3510C & 8081B	GC/ECD
gamma-Chlordane	ORG-91-5112	modified from EPA SW846 3510C & 8081B	GC/ECD
Chlordane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDE	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDD	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
op'-DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
pp'-DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
DDT	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	CALCULATION
Dieldrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Endrin	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Methoxychlor	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachlorobenzene	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachlorobutadiene	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Hexachloroethane	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
TCMX	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD
Decachlorobiphenyl	ORG-91-5112	modified from EPA SW-846 3510C & 8081B	GC/ECD

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Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 21T817791

PROJECT: GTR-00258896-E0

ATTENTION TO: Amanda Catenaro

SAMPLING SITE:

SAMPLED BY:M.L. 722-772 Winston Churchill

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

AGAT Laboratories
5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph. 905.712.5100 Fax. 905.712.5122
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 #: 21T817791
Cooler Quantity: Imed
Arrival Temperatures: 8.3 | 9.6 | 8.8
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes: Online

Report Information:
Company: Exp Services Inc
Contact: Amanda Catenaro
Address: 220 Commerce Valley Dr. W
Suite 110, Markham, ON
Phone: 905 695 3217 Fax:
Reports to be sent to:
1. Email: amanda.catenaro@exp.com
2. Email:

Regulatory Requirements:
(Please check all applicable boxes)
☒ Regulation 153/04 — Table 8 (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: GTR-00258896-E0
Site Location: 722-772 Winston Churchill Blvd, Oakville
Sampled By: M.L.
AGAT Quote #: PO:
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 — Analyze F4G if required ☐Yes ☐No	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: VOC	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	O. Reg 406: Salt - EC/SAR	OCPs							Potentially Hazardous or High Concentration (Y/N)
GS1	21/10/19	10:15 AM/PM	1	Soil													X							
GS1-0	"	10:15 AM/PM	1	"													X							
GS2	"	11:00 AM/PM	1	"													X							
GS3	"	10:00 AM/PM	1	"													X							
SED101	"	9:30 AM/PM	1	Sediment				X																
SED102	"	8:45 AM/PM	1	"				X																
SED102-0	"	8:45 AM/PM	1	"				X																
SED103	"	8:15 AM/PM	1	"				X																
MW103	"	12:00 AM/PM	8	GW		Y		X									X							
MW103 ⓓ	"	12:00 AM/PM	8	GW		Y		X									X							
		AM/PM																						

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Mike Luong	21/10/19	13:00	Joseph Xaim	10/19/21	1:05

Page 1 of 1
N°: 110735

Appendix H – Phase Two Conceptual Site Model

Appendix H: Phase Two Conceptual Site Model

Figure 1: Locality Plan

Figure 2: Site Plan

Figure 3: Groundwater Contour Plan

Figure 4A: Soil Analytical Results – BTEX and PHC Fractions F1 to F4

Figure 4B: Soil Analytical Results – VOCs

Figure 4C: Soil Analytical Results – PAHs

Figure 4D: Soil Analytical Results – Metals, Hydride-Forming Metals

Figure 4E: Soil Analytical Results – OCs

Figure 5A: Groundwater Analytical Results – BTEX and PHC Fractions F1 to F4

Figure 5B: Groundwater Analytical Results – VOC

Figure 5C: Groundwater Analytical Results – Metals, Hydride-Forming Metals

Figure 5D: Groundwater Analytical Results – OCs

Figure 6A: Sediment Analytical Results – PAHs

Figure 6B: Sediment Analytical Results – Metals, Hydride-Forming Metals

Figure 6C: Sediment Analytical Results – OCs

Figure 7: Cross Section Plan

Figure 7A: Cross Section A-A' and B-B': Soil Analytical Results – PHCs and BTEX

Figure 7B: Cross Section A-A' and B-B': Soil Analytical Results – VOCs

Figure 7C: Cross Section A-A' and B-B': Soil Analytical Results – PAHs

Figure 7D: Cross Section A-A' and B-B': Soil Analytical Results – Metals (including hydride-forming metals)

Figure 7E: Cross Section A-A' and B-B': Soil Analytical Results – OCs

Figure 8A: Cross Section A-A' and B-B': Groundwater Analytical Results – PHCs and BTEX

Figure 8B: Cross Section A-A' and B-B': Groundwater Analytical Results – VOCs

Figure 8C: Cross Section A-A' and B-B': Groundwater Analytical Results – Metals (including hydride-forming metals)

Figure 8D: Cross Section A-A' and B-B': Groundwater Analytical Results – OCs

The Site is located on the west side of Winston Churchill Boulevard in Oakville, Ontario, as shown on Figure 1. The subject property measures approximately 15.7 hectares (38.8 acres) in area. The Site was first developed prior to 1939 for agricultural purposes. A farmstead residence was located in the northeast corner from the 1970s until the 2000s. Earthwork activities were undertaken at the Site in 2012, including the removal of surficial topsoil and weathered subgrade soil and construction of a storm

water management pond (SWMP). Clearview Creek, which flowed centrally through the Site, was realigned to run along the west and south boundaries of the subject property. At the time of the Phase Two ESA, the Site was a vacant lot undergoing earthworks. The Phase Two Study Area included industrial properties to the northwest, vacant land to the east and south, and residential land to the west. The Phase Two Study Area and a Surrounding Land Use Plan are shown on Figure 2.

A Phase Two conceptual site model (CSM) was developed for the site using information collected during previous Phase I and II Environmental Site Assessments (ESA) and Phase Two ESA investigations. The CSM is a simplification of reality, which aims to identify the potentially contaminating activities (PCAs), areas of potential environmental concern (APECs), contaminant transport and exposure pathways, and receptors. The CSM is a compilation of narrative description, diagrams and figures illustrating the current condition of the Phase Two property as well as the intended future use.

1. Potentially Contaminating Activities and Areas of Potential Environmental Concern

According to the historical records, the Site was first developed prior to 1939 for agricultural purposes. A farmstead residence was located in the northeast corner from the 1970s until the 2000s. Earthwork activities were undertaken at the Site in 2012, including the removal of surficial topsoil and weathered subgrade soil and construction of a storm water management pond (SWMP). Clearview Creek, which flowed centrally through the Site, was realigned to run along the west and south boundaries of the subject property. At the time of the Phase Two ESA, the Site was a vacant lot undergoing earthworks.

The potential for each off-site PCA to result in an area of potential environmental concern (APEC) was evaluated based on proximity to the site and on its location relative to the calculated south groundwater flow direction. PCAs at properties located cross-gradient and upgradient of the site were considered to result in APECs at the Phase One property.

The potential contaminants of concern (PCOCs) in the media associated with the PCA were assessed, as summarized below:

Table 1a: PCAs resulting in APECs on-site

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
A1	Southwestern Corner of Site	Stockpile 1 - Fill of Unknown Quality	On-site	PHCs, VOCs, PAHs, Metals, OCs	Soil
A2	Northwestern corner of Site	Stockpile 2 - Fill of Unknown Quality	On-site	PHCs, VOCs, PAHs, Metals, OCs	Soil
A3	Majority of Site	Fill of Unknown Quality	On-site	PHCs, VOCs, PAHs, Metals, OCs	Soil
B	Majority of site	Historical Orchards	On-site	OCs	Soil
C	North and Northwestern Portion of the site	Various Industrial Activities	Off-site	PHCs and VOCs	Groundwater Sediment

PHCs – Petroleum hydrocarbons; VOC – volatile organic compounds; PAH – polycyclic aromatic hydrocarbons; OCs – Organochlorine Pesticides

2. Subsurface Structures and Utilities

The utilities and services were identified at the site based on information provided in environmental records, relevant utility infrastructure observed during the site reconnaissance, and public and private locates completed at the site. Given the depth of the static groundwater table, ranging from 0.249 to 1.222 mbgs, it possible for groundwater flow conditions to be influenced by the underground utilities at the site.

Utility	Source	Location	Site Entry
Natural Gas	Enbridge Gas	Unknown	Unknown
Sanitary Sewer	City of Oakville	Unknown	Unknown
Storm Sewer	City of Oakville	Unknown	Unknown
Water	City of Oakville	Unknown	Unknown
Electricity	HydroOne	Hydro is present along the northeastern to southeastern Site Boundary, along Winston Churchill Boulevard	The electricity utility does not appear to enter the Site

3. Physical Setting

3.1 Stratigraphy

The Site is located in a transition zone between the physiographic regions known as the Iroquois Plan and Shale Plains. The native surficial soils in this region are predominately composed of older glacial lake deposits, typically silty clay to silt till (Chapman and Putnam, 1984). The subject property is located in the Halton Till (Ontario-Erie lobe) quaternary region, which is an area with a silt to silty clay matrix, high in carbonate content and clast poor (Ontario Geological Survey, 2000).

According to the Geological Survey of Canada map of the area, the underlying geology comprises the Queenston Formation. Bedrock at the Site consists upper Ordovician shale, limestone, dolostone and siltstone (Ontario Geological Survey, 1991).

The topography in the vicinity of the Site is relatively flat with a gradual slope towards the south. Clearview Creek flows onto the subject property at the northwest corner of the Site. Clearview Creek was realigned to run south along the west boundary and east along the south boundary of the Site in 2012. A SWMP was also constructed at the southeast corner of the subject property, at this time.

3.2 Hydrogeological Characteristics

The monitoring well network advanced as part of this Phase Two ESA consisted of four (4) pre-exiting monitoring wells, installed in 2016. Screen depths ranged from approximately 0.89 to 3.89 mbgs at MW110, 1.48 to 4.48 mbgs at MW101, 1.44 to 4.44

mbgs at MW102, and 0.99 to 3.99 mbgs at BH103. Groundwater levels were measured between 0.25 (MW102) to 1.22 (MW101) mbgs on March 18, 2020.

Based on the groundwater elevations measured across the Site, local groundwater flow direction was calculated in the shallow aquifer in the south to southeasterly direction.

The horizontal gradient was calculated based on groundwater contours, provided in Figure 3. Results of groundwater monitoring activities indicate a localized on-site horizontal hydraulic gradient of approximately 0.006 m/m to the south/southeast based on groundwater monitoring data from March 18, 2020. The regional horizontal hydraulic gradient is estimated to be approximately 0.001 m/m towards the south based on topography and surface water features in the region.

Table 1 summarizes the environmental setting and Site characteristics. Using 1 x 10-6 cm/s for the hydraulic conductivity of silt (Freeze and Cherry, 1979), a hydraulic gradient of 0.006 m/m (estimated based on topography), and an effective porosity of 20% (McWhorter and Sunada, 1977), Darcy's Law calculations were made to determine the potential groundwater flow velocity at the Site, as shown in Table 2. The groundwater flow velocity was calculated to be approximately 9.46 x 10^{-3} metres per year (0.95 centimetres/year) in the native silt.

3.3 Considerations With Respect to Section 35, Section 41 or 43.1 of the Regulation and Applicable Site Condition Standards

Section 35 of O. Reg. 153/04 dictates restrictions or requirement in application of non-potable site condition standards. The Site and all properties within 250 m of the Site may be serviced by potable water wells.

Section 41 of O. Reg. 153/04 dictates certain restrictions in application of Site Condition Standards (SCS) for environmentally sensitive areas. The site is not identified as an environmentally sensitive area and, therefore, the restrictions identified in Section 41 do not apply.

According to the Ministry of Natural Resources and Forestry's "Make a Map: Natural Heritage Areas", Clearview Creek, located on-Site, is identified as a "Natural Heritage System".

The Table 8 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). Surface soil samples were submitted for pH analysis and were measured within the acceptable range of 5 to 9. Subsurface soils were measured between the acceptable pH range of 5 and 11.

Section 43.1 of O. Reg. 153/04 defines the restrictions when using the SCS for a shallow soil property or a Site located near a water body. As bedrock is not found at a depth of less than 2 mbgs on-site, the site is not considered to be a shallow soil property.

The site contains a surface water body.

Based on the information provided above, the generic Standards for the site and Phase Two CSM were determined to be the MECP Table 8 Site Condition Standards for Residential/Parkland/Institutional land use with medium/fine textured soils (herein referred to as Table 8 SCS), as listed in the MECP technical document Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act referenced by O. Reg. 153/04.

3.4 Areas where Soil Has Been Brought From Another Property

Fill material is typically brought to a property as a base for buildings and pavement areas. Fill can also be used to re-grade a property, and to backfill excavations.

Based on the Phase Two investigation, stockpiled fill was observed in two locations at the Site. Furthermore, previous investigations have identified fill across the majority of the Site.

3.5 Locations of Building and Structures

The site was vacant at the site of the Phase Two ESA. The Site is intended to be redeveloped for residential purposes. However, building design plans have not been completed, at this time.

4 Areas of Contamination and Distribution of Contaminants

Subsurface investigations were completed to assess the impact of the PCAs on soil and groundwater within APECs on the site. The screening of contaminants of concern (COC) was done by comparing the concentrations of PCOCs in soil and groundwater with the Table 8 SCS.

4.1 Soil

Soil was within the Table 8 SCS for all parameters analyzed, with the exception of EC at BH3-SS1 and OCs at SP2-3, GS1 and GS1-0.

Given the proximity of BH3 to the adjacent roadway, elevated levels of EC in soil are deemed to be associated with the application of de-icing and salting substances along Winston Churchill Boulevard. As per Section 2 of Ontario Regulation 339 of the Revised Regulations of Ontario, 1990 (Classes of Contaminants – Exceptions) and section 48 (3) of Ontario Regulation 153/04, it is the QP's opinion that the applicable Table 8 Standard for EC at the Site was exceeded solely because salt was used for the purpose of keeping adjacent roadways safe for traffic under conditions of snow or ice or both. Therefore, this parameter is not considered a contaminant of concern (COC) and is deemed to not be an exceedance of the Table 8 Standards.

4.2 Groundwater

Groundwater was within the Table 8 SCS for all parameters analyzed.

Monitoring programs, including monitoring for the presence of light non-aqueous phase liquid (LNAPL), have been conducted at the Site. LNAPL has not been encountered at the site during any monitoring events.

4.3 Sediment

Sediment was within the Table 8 SCS for all parameters analyzed with the following exceptions:

- SED1
    - Copper at 29 ug/g versus the SCS of 16 ug/g and Nickel at 28 ug/g versus the SCS 16 ug/g;
- SED 2
    - Copper at 31 ug/g versus the SCS of 16 ug/g and Nickel at 30 ug/g versus the SCS 16 ug/g.
- SED101
    - Copper at 33.2 ug/g versus the SCS of 16 ug/g and Nickel at 28 ug/g versus the SCS 16 ug/g.

- SED102
    - Arsenic at Copper at 18 ug/g versus the SCS of 6 ug/g, Copper at 22.2 ug/g versus the SCS of 16 ug/g, and Lead at 79 ug/g versus the SCS 31 ug/g.
- SED102-0 (duplicate of SED102)
    - Arsenic at Copper at 19 ug/g versus the SCS of 6 ug/g, Copper at 22.1 ug/g versus the SCS of 16 ug/g, and Lead at 72 ug/g versus the SCS 31 ug/g.
- SED103
    - Copper at 29.2 ug/g versus the SCS of 16 ug/g and Nickel at 26 ug/g versus the SCS 16 ug/g.

4.3 Mechanism of Discharge of Contaminants

The Table below summarizes the COCs associated with the areas of contamination (AOCs).

AOC	Location	COCs in Excess of Table 3 SCS	Medium
A2	Northwestern corner of Site	OCs (DDD and DDE)	Soil
B	Northern portion of Site	OCs (DDD and DDE)	Soil
C	North and Northwestern Portion of the site	Copper, Lead, Arsenic, Nickel	Sediment

It is noted that elevated levels of EC, present at BH3, are related to the application of salting and de-icing substances in the parking lot for the purpose of snow and ice removal during the winter months. As per Section 2 of Ontario Regulation 339 of the Revised Regulations of Ontario, 1990 (Classes of Contaminants – Exceptions), and Part IX, Subsection 49.1 of Ontario Regulation 153/04, the concentrations of EC are deemed not to be exceedances of the MECP Table 8 SCS.

4.4 Migration of Contaminants

No groundwater impacts were identified and thus no migration via this pathway is anticipated. The OC exceedances identified in soil are considered to be fairly immobile and are not anticipated to migrate off-site. The metal impacts identified in sediment are likely migrating from off-site and/or are representative of background conditions. Thus, it is not anticipated to act as a major source of contaminant migration.

4.5 Climatic and Meteorological Conditions Affecting Migration

No groundwater exceedances of the MECP Table 8 SCS were identified at the Site. Therefore, temporal variability in groundwater flow direction due to climatic and meteorological conditions is not expected to be a factor concerning the distribution and migration of contaminants.

4.6 Soil Vapour Intrusion

Given that there were no contaminants in exceedance of the MECP Table 8 SCS were identified in groundwater, soil vapour intrusion pathways are unlikely.

5 Receptors and Pathways

As a result of the identification of several exceedances of the Table 8 SCS in soil and sediment, a limited risk evaluation was completed to determine potential human health and ecological risks associated with leaving these impacts on-Site. Screening of the maximum concentrations of the COCs against the applicable MECP component values was completed. By way of background and context, as part of the derivation of the generic MECP SGWS Standards, the MECP has developed risk-based values deemed protective of the various human and ecological Site receptor/exposure pathway scenarios, which are referred to as component values. The various human receptors included in these scenarios include residential or commercial human receptors (*e.g.,* property resident, indoor workers, construction workers etc.). The various ecological receptors include plants, soil invertebrates, representative mammals and birds and various aquatic species. Some of the exposure pathways included in the scenarios comprise the dermal contact, ingestion, vapour inhalation, and the groundwater migration to surface water. Each of these scenarios is evaluated separately by the MECP for each contaminant regulated under O. Reg. 153/04.

Given the intended future residential land use, the relevant human receptors include Site residents and property visitors. Construction workers are also anticipated to be on-Site during redevelopment. Ecological receptors include various terrestrial vegetation, soil invertebrates, small mammals and birds. In addition, given the presence of Clearview Creek on-Site, aquatic receptors (various species of fish, invertebrates, amphibians, aquatic plant species and aquatic and semi aquatic mammals and birds) may also be present.

Further discussion on the relevant exposure pathways applicable to the above-noted receptors and a limited risk evaluation are provided for each media in the sections below.

5.1 Soil

The soil COCs identified for the Site are DDD and DDE. Based on the identified soil impacts, the relevant exposure pathways (i.e., component values) applicable to these receptors based on the use of the site include:

- S1 – human health soil dermal contact and incidental ingestion at a high frequency and high intensity in a residential/parkland/institutional setting.
- S3 – human health soil dermal contact, incidental ingestion and soil particulate inhalation protective of workers undertaking excavation works.
- S-GW1 – human health exposure pathway due to movement of a substance from the soil to groundwater then to a human receptor via drinking water.
- Plants & Soil Organisms – ecological exposure pathway due to direct contact of terrestrial plants and soil invertebrates.
- Mammals & Birds – ecological exposure pathway due to direct contact of terrestrial mammals and birds.
- S-GW3 – ecological exposure pathway due to movement of a substance from soil to groundwater then to aquatic receptors in a surface water body.
- Sediment Quality – Sediment quality guidelines for protection of sediment dwelling organisms, considered applicable to assess soil erosion/run-off pathway.

Screening of the maximum concentrations against the applicable component values noted above is summarized in the Table, below:

Parameter	Maximum Concentration (µg/g)	Component Values[1] (µg/g)						
		S1	S3	S-GW1	Plants and Soil Organisms	Mammals and Birds	S-GW3	Sediment Quality
OCPs								
DDD	0.056	3.3	110	1,800	8.5	NV	38,000,000	**0.008**
DDE	0.28	2.3	110	1,800	0.33	NV	350,000,000	**0.005**

[1] Component values obtained from MECP Table 8 component values (MECP, 2016). Table 8 component values defer to Table 2 component values. Table 2 component values for residential land use, with medium to fine textured soils in a potable groundwater condition were applied, where applicable. The S3 component value was obtained from the Table 2 component values for an industrial/commercial/community use.
Bold = concentration is exceeded by maximum on-Site concentration.
NV = No Value.

The maximum concentrations of DDD and DDE are within all applicable human health and ecological component values with the exception of sediment quality. However, based on the sediment samples collected, sediment concentrations of DDD and DDE are below sediment SCS, therefore soil erosion/run-off is not considered to be significant.

No MECP component values are available for mammal and bird exposure to DDD and DDE. However, given that only two (2) of ten (10) sampling locations exceeded the Table 8 SCS for either DDD or DDE, and exceedances were limited to a portion of one of the stockpiles present on-site, it is considered unlikely that these elevated concentrations of DDD and DDE will pose a significant concern to the overall populations of mammals and birds that may frequent the Site.

While DDE is considered volatile based on MECP's definition of volatility (Henry's Law constant greater than 1x10-5 atm-m^3/mol and/or the vapour pressure is greater than 1.0 Torr at the average groundwater temperature of 15 ^oC), no MECP component value is available for inhalation pathways. Vapour inhalation of DDE is likely to be insignificant given the following:

- DDE may be volatile in moist soils based on the Henry's Law constant (1.14E-05 atm-m^3/mol), but it is not expected to volatilize from dry soils based on its low vapor pressure (6.00E-06 Tor) (US EPA, 2008a);
- DDE volatilization is expected to be attenuated by adsorption to carbon sources. Due to a high adsorption coefficient, DDE is expected to strongly sorb onto soil particles (US EPA, 2008a); and,
- The estimated half-life of DDE is only 17 hours to 2-days as it reacts with photochemically-produced hydroxy radicals (US EPA, 2008b).

Overall, DDD and DDE in soil are not anticipated to pose a concern to human and ecological receptors that may be present on-Site.

5.2 Groundwater

Given that the minimum depth to groundwater was reported to be 0.25 mbgs, the depth to groundwater on the Site is not consistent with the assumptions applied by the MECP in the evaluation of the indoor air vapour intrusion pathway under the Table 8 SCS. The depth to groundwater reflects the distance and opportunity for potential contaminant biodegradation and natural attenuation to occur, which are considered in the modelling of the groundwater to indoor air exposure pathway. As such, as part of the risk evaluation volatile groundwater parameters were also compared to the Table 6 SCS for all types of property use (herein referred to as the Table 6 SCS). The Table 6 SCS is representative of a shallow groundwater scenario as it was derived as a conservative scenario where biodegradation cannot be assured and where soil may not be present to provide attenuation. In keeping with the MECP, a groundwater parameter was considered sufficiently volatile if the parameter has a

Henry's Law constant greater than 1x10-5 atm-m^3/mol and/or the vapour pressure is greater than 1.0 Torr at the average groundwater temperature of 15 ^oC. Based on the comparison of chemical concentrations in groundwater to the Table 6 SCS, no exceedances were identified. As such, groundwater is not considered further in the risk evaluation.

5.3 Sediment

Exceedances of the MECP Table 1 SCS for sediment was identified for arsenic, copper, lead and nickel.

Where a sediment SCS was not available, the data were compared to the MECP Table 1 background Standards for soil. The Table 1 soil Standards are considered applicable as sediment concentrations would be influenced by erosion of adjacent soil by wind/run-off and are based on Ontario background concentrations. All parameters without sediment SCS were within the Table 1 soil SCS. Therefore, no further consideration was given to these parameters.

As per Health Canada (2017), in the absence of applicable human health-based sediment guidelines, sediment concentrations may be screened against available human health-based residential/parkland soil quality guidelines (or criteria) for scenarios where only direct contact of contaminants from sediment is expected. Based on the above, and also taking into consideration ecological receptors, the relevant exposure pathways (i.e., component values) applicable to human and ecological receptors based on the intended residential use of the site include:

- S1 – human health soil dermal contact and incidental ingestion at a high frequency and high intensity in a residential/parkland/institutional setting.
- S3 – human health soil dermal contact, incidental ingestion and soil particulate inhalation protective of workers undertaking excavation works.
- Sediment Quality – Sediment quality guidelines for protection of sediment dwelling organisms, considered applicable to assess soil erosion/run-off pathway.

Consideration was also given to background sediment concentrations and sediment Severe Effect Levels (SELs) as provided by MECP (2008). The SEL indicates a level of contamination that is expected to be detrimental to the majority of sediment dwelling organisms. It is noted that the MECP Lowest Effect Level (LEL), that is, the level of contamination that can be tolerated by the majority of sediment-dwelling organisms are equivalent to the Sediment Quality values provided by MECP (2016).

Screening of the maximum concentrations against the applicable component values noted above is summarized in the Table, below:

Parameter	Maximum Concentration (µg/g)	Component Values[1] (µg/g)			MECP (2008) Background Sediment Concentrations (µg/g)	MECP (2008) Severe Effect Level (SEL) (µg/g)
		S1	S3	Sediment Quality		
Metals						
Arsenic	19	**0.15**	**7.4**	**6**	**4**	33
Copper	33.2	200	1,900	**16**	**25**	110
Lead	79	120	1,000	**31**	**23**	250
Nickel	30	46	310	**16**	31	75

[1] Component values obtained from MECP Table 8 component values (MECP, 2016). Table 8 component values defer to Table 2 component values. Table 2 component values for residential land use, with medium to fine textured soils in a potable groundwater condition were applied, where applicable. The S3 component value was obtained from the Table 2 component values for an industrial/commercial/community use.
Bold = concentration is exceeded by maximum on-Site concentration.

NV = No Value.

The maximum concentration of arsenic exceeds the relevant component values applicable to human and ecological health. The elevated levels of arsenic were identified at one (1) location in sediment (SED 102). The concentration of arsenic identified in sediment is almost equivalent to the background concentration in soil (18 µg/g). It is noted that the field duplicate sample collected from the location of the maximum concentration returned a concentration of 18 µg/g. As such, concentrations of arsenic in sediment are attributed to background levels in soil and is considered unlikely to pose a concern to users of the Site. From an ecological perspective, it is further noted that the maximum concentration is within the SEL, which would indicate heavy contamination.

The maximum concentrations of copper, lead and nickel in sediment are within the relevant human health component criteria (i.e. S1 and S2), however exceed the sediment quality component value, considered protective of aquatic life.

It is noted that the maximum concentration of nickel is below typical background sediment concentrations, as such unacceptable risk to sediment-dwelling organisms as a result of the nickel identified on-site is considered low. It is further noted that similar concentrations of nickel were identified in the upgradient sediment sample (SED 101), indicating the sources other than on-Site are responsible for the elevated concentrations or are typical background concentrations for the area.

While concentrations of copper and lead exceed typical sediment concentrations, the maximum concentrations are well below the SELs. Furthermore, the concentrations identified in sediment are well below soil background concentrations of 92 µg/g and 120 µg/g for copper and lead, respectively. For copper, it is additionally noted that similar concentrations were identified in upgradient sediment sample (SED 101). Therefore, concentrations are attributed to background levels in soil and is unlikely to significantly affect aquatic life.

Overall, the elevated levels of select metals in sediment on-Site are not anticipated to pose a concern to human and ecological receptors that may be present on-Site.