PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT

Southern Portion of 40 Beechcliffe Street
Ottawa, Ontario

CO986.00

FINAL REPORT

April 2, 2025

Prepared for:

CITY OF OTTAWA

TERRAPEX
20 Gurdwara Road, Unit 1
Ottawa, Ontario K2E 8B3
Telephone: (613) 745-6471
environment@terrapex.com
www.terrapex.com

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1.0 EXECUTIVE SUMMARY

Terrapex was retained by the City of Ottawa (the City) to conduct a Phase Two Environmental Site Assessment (ESA) on the southern portion of the property located at 40 Beechcliffe Street, Ottawa, Ontario (the Phase Two Property, hereinafter also referred to as the Site).

It is understood that the Client is proposing to develop portions of the Site with a housing development. The Site has never been developed. However, instances of possible fill placement were identified in 1965 and during construction work associated with the installation of a sanitary sewer in 2012 which crosses the Site. The proposed change from a vacant property to residential development does not require the filing of a Record of Site Condition (RSC), per Ontario Regulation (O. Reg. 153/04) under the Environmental Protection Act (*Records of Site Condition – Part XV.1 of the Act*).

A Phase One ESA was completed by Terrapex in January 2025 in accordance with the requirements of O. Reg. 153/04; the date of last work being January 17, 2025. The Phase One ESA identified two areas of potential environmental concern (APECs) at the Site, resulting from importation of fill at the Site and the presence of a former garage and current retail fuel outlet located to the east of the Site.

The Phase Two ESA was subsequently conducted by Terrapex to investigate the environmental quality of soil and groundwater at and within the APECs identified at the Site. The Phase Two ESA consisted of the completion of eight boreholes to a maximum depth of 4.5 m below ground surface (bgs), installation of three groundwater monitoring wells, and the collection of soil and groundwater samples for laboratory analysis to augment previous sampling and analysis of contaminants of potential concern (COPCs) identified for the Site. Note that replacement monitoring wells (MW109D, MW110D and MW111D) were installed with deeper screened intervals as a replacement for the former wells as they were found to be dry during initial monitoring. An additional 13 test pits were excavated for delineation purposes.

A summary of the COPC sampling locations for each APEC and potentially affected media is provided in the table below.

SUMMARY OF SAMPLING LOCATIONS

APEC	MEDIA POTENTIALLY IMPACTED	CONTAMINANTS OF POTENTIAL CONCERN	SAMPLING LOCATIONS	
			SOIL	GROUNDWATER
APEC 1	Soil	Metals & Inorganics	BH107-1B. BH108-1A, MW109-1A, MW111-B, BH112-1B.	

APEC	MEDIA POTENTIALLY IMPACTED	CONTAMINANTS OF POTENTIAL CONCERN	SAMPLING LOCATIONS	
			SOIL	GROUNDWATER
(Fill)	(Fill Material)	PAHs	BH107-1B. BH108-1A, MW109-1A, MW111-B, MW111-2C, MW111D-5, BH112-1B, BH113-1, BH114-1 TP103-2, TP103-4, TP104-2, TP106-3, TP107-2, TP107-4, TP108-2, TP109-1, TP110-2 and TP11-3.	
		PHCs F1-F4	MW107-1B. BH108-1A, MW109-1A, MW111-B, MW111-2C and BH112-1B.	
		BTEX	MW107-1B. BH108-1A, MW109-1A, MW111-B, MW111-2C and BH112-1B.	
APEC 2 (Former garage and current retail fuel outlet)	Soil & Groundwater	Metals (including HFM metals)	MW109-3A and MW111-2C	MW109 and MW111
		PHCs F1-F4	MW109-3A and MW111-2C	MW109 and MW111
		BTEX	MW109-3A and MW111-2C	MW109 and MW111
		VOCs	MW109-3A and MW111-2C	MW109 and MW111
Supplemental Analysis*	N/A	PHCs F1-F4	BH107-3A	MW110
		BTEX	BH107-3A	MW110
		VOCs	BH107-3A	MW110
		ORPs		MW111
		PAHs		MW111

BTEX: *Benzene, toluene, ethylbenzene, xylene*
PHCs: *Petroleum hydrocarbons (fractions F1 to F4)*
PAHs: *Polycyclic aromatic hydrocarbons*
VOCs: *Volatile Organic Compounds*
HFM: *hydride forming metals*
ORPs *Other regulated parameters including Hexavalent Chromium (Cr (VI)), Mercury (Hg), Methyl Mercury, Cyanide (CN-), and the following media-specific parameters:*

- *Soil: hot water soluble Boron (B-HWS), Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), pH*
- *Groundwater: Sodium (Na), Chloride (Cl-)*

Due to the proposed development of the Site for residential property use, the generic full-depth Ministry of the Environment, Conservation and Parks (MECP) site condition standards (SCS) applicable to residential property use in a non-potable groundwater condition with coarse-textured soil (Table 3 SCS) was selected to evaluate soil and groundwater quality at the Site.

Based on field observations and an evaluation of soil and groundwater quality data, the following conclusions are provided:

- The soil stratigraphy encountered in the boreholes and test pits at the Site generally consisted of a fill material consisting of sand containing varying gravel fractions ranging from some gravel to gravelly, trace silt, organics and trace amount of asphalt and/or brick. The fill materials were underlain by a deposit of native brownish olive silty clay, overlying

grey sand soil. The colour of the native sand becomes brownish grey or grey at depths between 3 and 4 m bgs, and the boreholes were terminated within the sand deposit at depths between 4.5 to 6.1 m bgs, which represents the maximum depth of investigation.

- In December 2024, monitoring wells MW109D, MW110D, and MW111D were monitored. During the December 2024 monitoring event, the depth to groundwater was measured between 4.62 m bgs (MWMW109D) and 4.89 m bgs (MW111D).
- The findings of the December 11, 2024 monitoring event indicated that the groundwater flow is towards the northeast. The groundwater flow direction was likely influenced by the presence of nearby storm and sanitary sewer which transverse the southern portion of the Site. The groundwater monitoring data is summarised in Table 4 (appended) and the interpreted groundwater elevation contours are shown on Figure 7.
- No evidence of non aqueous phase liquids (i.e., NAPL) or free-product was encountered during monitoring, purging, or sampling of the monitoring wells.
- Comparison of the soil analytical results identified concentrations of PAH parameters greater than the Table 3 SCS specifically present within the fill layer at the southeastern portion of the Site. All other parameters did not exhibit any concentrations greater than the Table 3 SCS.
- Comparison of the laboratory results to the Table 3 SCS did not identify any groundwater contaminants at the Site.

Based on the findings of the Phase Two ESA, the environmental quality of soil at the Site does not meet the Table 3 SCS. For due diligence purposes or prior to site redevelopment a full-depth soil remediation and/or a risk assessment should be completed in accordance with the requirements of O. Reg. 153/04.

2.0 INTRODUCTION

Terrapex was retained by the City of Ottawa (the City) to conduct a Phase Two Environmental Site Assessment (ESA) on the southern portion of the property located at 40 Beechcliffe Street in Ottawa, Ontario (the Phase Two Property, hereinafter also referred to as the Site).

It is understood that the Client is proposing to develop portions of the Site with a housing development. The Site has never been developed. However, instances of likely fill placement were identified in the Phase One ESA. The proposed change from a vacant property to residential development does not require the filing of a Record of Site Condition (RSC), per Ontario Regulation (O. Reg. 153/04) under the Environmental Protection Act (*Records of Site Condition – Part XV.1 of the Act*).

The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified by a Phase One ESA (Terrapex, 2025).

2.1 SITE DESCRIPTION

The Site is located in a neighbourhood comprised of mixed residential and commercial land uses as shown on Figure 1 (Site Location Plan) and Figure 2 (Site Features).

Information regarding the location, identification, and geometry of the Phase Two Property is provided in the table below. Refer to Figure 1 for the location of the Site, and to Figure 2 for the general layout of the Site at the time of the site reconnaissance.

PHASE TWO PROPERTY INFORMATION

Address:	40 Beechcliffe Street, Ottawa, Ontario (Southern Portion)
Current Plan of Survey:	No plan of survey was available at the time of the report as part of the subdivision of the 40 Beechcliffe Street property into a northern (i.e., the Site) and southern parcel to facilitate the development.
Property Identification Number:	04657-0598
Legal Description:	40 Beechcliffe Street, Ottawa, Ontario PTS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 & 14, PL 4D-70
UTM Coordinates (centre of site, NAD83):	18T East: 440958.45 m North: 50200406.44 m
Approximate Site Area:	8,410.3 m^2
Structures:	None
Occupants (current):	Vacant
Other facilities of note:	None

The Site is irregular in shape with a total area of approximately 8,410.3 m^2. The Site is currently vacant undeveloped land. The Site has the property identification number (PIN) 04657-0598. The general site layout is provided in Figure 2.

A Plan of Survey was not available from the City. As an RSC will not be filed, the requirement for a legal survey was excluded from the work program. The City did provide a topographic map which includes the Site. The topographic map is provided in Appendix I.

2.2 PROPERTY OWNERSHIP

Contact information for the registered owner of the Site and the party authorizing this Phase Two ESA is provided in the table below.

Name and Address of Registered Owner:	City of Ottawa 110 Laurier Avenue West Ottawa, ON K1P 1J1
Name and Address of Authorizing Party:	Vahid Arasteh City of Ottawa 110 Laurier Avenue West Ottawa, ON K1P 1J1

2.3 CURRENT AND PROPOSED FUTURE USES

The Site has never been developed and is currently a vacant field. The City is proposing developing the Site with housing, which is a residential use per O. Reg. 153/04.

2.4 APPLICABLE SITE CONDITION STANDARDS

Generic Site Condition Standards (SCS) for evaluating laboratory analytical results for soil and groundwater were determined on the basis of site-specific criteria specified in O. Reg. 153/04, and are summarized below:

SITE-SPECIFIC CRITERIA TO DETERMINE APPLICABLE SITE CONDITION STANDARDS

Environmental Sensitivity:	pH of surface soil less than 5 or greater than 9? pH of subsurface soil less than 5 or greater than 11?	No (7.35- 7.50) No (7.38)
	Includes, or within 30 m of, an area of natural significance?	No
	Includes, or within 30 m of, a body of water?	No
Stratigraphy and Hydrogeology:	Is bedrock shallower than 2 m beneath the Site?	No
	Does the Site lend itself to the application of stratified SCS?	No
	Is the Site located in an area designated in the municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of groundwater?	No
	Is potable water at the Site, and all other properties wholly or partially within 250 m radius of the Site, supplied by municipal drinking water system as defined in the *Safe Drinking Water Act, 2002*?	Yes
	Is the Site, or any other property wholly or partially within 250 m radius of the Site, equipped with a well that is used or intended for use as a source of water for human consumption or for agriculture?	No
	Has appropriate tier municipalities consented to the use of non-potable site condition standards?	Yes
	Is at least ⅓ of the volume of soil beneath the property coarse textured?	Yes (refer to section 6.4)
Proposed Land Use:	Agricultural or Other; Residential; Parkland; Institutional; Industrial; Commercial; Community use?	Residential

Based on the above, the full depth generic SCS applicable to residential/parkland/institutional land use that are listed in Table 3 of the April 15, 2011 MECP *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* are considered appropriate for evaluating laboratory analytical results.

In accordance with the requirements of Section 35 of O. Reg. 153/04, notification of the intent to use standards corresponding to a non-potable groundwater condition was provided to the Senior Hydrogeologist of the City of Ottawa on January 14, 2025. In a letter dated February 13, 2025, the municipality confirmed it did not object to the application of non potable groundwater site condition standards at the Site. A copy of the notification correspondence is provided in Appendix II.

3.0 BACKGROUND INFORMATION

3.1 PHYSICAL SETTING

3.1.1 Water Bodies & Areas of Natural Significance

Based on the review of the aerial photographs, satellite images, and topographic maps completed as part of the previous Phase One ESA, a summary of water bodies, areas of natural significance, and groundwater sensitivity information within the Phase One Study Area is provided in the table below, and on Figure 3.

WATER BODIES AND AREAS OF NATURAL SIGNIFICANCE

Surface Water:	Pinecrest Creek, located approximately 1,935 m to the north of the Site, is the closest mapped waterbody. Pinecrest Creek flows north and ultimately discharges into the Ottawa River approximately 4,800 m from the Site.
Area of Natural Significance:	None
Wellhead and Intake Protection Zones	None
Municipal Drinking Water System	City of Ottawa

3.1.2 Topography & Surface Water Drainage

Based on a review of the site reconnaissance records, the topographic maps of the Site, and Phase One Study Area determined as part of the previous Phase One ESA, a summary of topography and surface water drainage is presented in the table below:

SUMMARY OF TOPOGRAPHY & SURFACE WATER DRAINAGE

Site & Regional Topography:	The regional topography at the Site slopes to the north (towards the Ottawa River). Woodroffe Avenue (located to the east of the Site with an approximate north-south orientation) descends to 4.0 m below the elevation of the Site due to the presence of a underpass.
Approximate Elevation:	The Site is at an elevation of approximately 89 m above mean sea level (amsl).
Surface Water Drainage:	Surface water drains into the ground at the Site through unpaved surfaces.

3.2 PAST INVESTIGATIONS

Terrapex was not provided with any previous pertinent environmental reports for review of the Site. Previous environmental reports related to an off-Site property (1545 Woodroffe Avenue, approximately 240 m southeast of the Site) were reviewed as part of the scope of the Phase One ESA. The review of these reports for 1545 Woodroffe Avenue resulted in an APEC for the Site.

3.2.1 Summary of Phase One ESA

A Phase One ESA of the Site was carried out by Terrapex in January 2025 in accordance with the requirements of O. Reg. 153/04, as amended, to support the redevelopment of the Site for residential purposes. The Phase One and Two Properties are identical.

The Phase One ESA identified one potentially contaminating activity (PCA) on the Phase One Property and seven off-site PCAs within the Phase One Study Area (refer to Table 2, appended). Through an evaluation of the information gathered from the records review, interviews, and the site reconnaissance, a total of two APECs were identified within the Phase One Property, as summarized in Table 3 (also appended). The PCAs are shown on Figure 4 and the APECs are shown in Figure 5A. The Phase One Conceptual Site Model (CSM) is presented in Section 4.3.

4.0 SCOPE OF INVESTIGATION

4.1 OVERVIEW OF SITE INVESTIGATION

The scope of Terrapex's assessment comprised the following:

- Preparation of Sampling and Analysis Plans (SAAP) was prepared that identified target sampling locations with associated rationale, a proposed laboratory analytical program, and the number and type of Quality Control (QC) samples. A second SAAP was prepared for the test pitting program specially to delineate the PAH-impacted fill.
- Drilling of six boreholes (BH107, BH108, MW109, MW110, MW111 and BH112) on November 21 and 22, 2025, to 4.6 m below ground surface (bgs), three of which were completed as groundwater monitoring wells (MW109, MW110 and MW111).
- Decommissioning of the three monitoring wells and reinstalling three deeper monitoring wells (MW109D, MW110D and MW111D) at a greater depth (6.1 m bgs) on December 6, 2024.
- Drilling of two additional shallow boreholes (BH113 and BH114) for delineation purposes in the vicinity of borehole MW111 on December 6, 2024 to a maximum depth of 1.5 m bgs.
- Excavating of thirteen test pits (TP101 to TP113) on January 15, 2025 to maximum depth of 2.1 m bgs.
- Collection of soil samples and logging of visual, olfactory and tactile soil characteristics.
- Screening of combustible soil vapour (CSV) concentrations in soil samples.
- Review and assessment of all available chemical data pertaining to the subject Site, including (but not necessarily limited to) the following contaminants of potential concern (COPCs):
    - Metals;
    - Hydride-Forming Metals (HFMs); namely antimony (Sb), arsenic (As), and selenium (Se);
    - Other Regulated Parameters (ORPs); including hexavalent chromium [Cr (VI)], mercury (Hg), methyl mercury, cyanide (CN-), and the following media-specific parameters:
        - Soil: hot water soluble boron (B-HWS), electrical conductivity (EC), sodium adsorption ratio (SAR), pH;
    - Polycyclic Aromatic Hydrocarbons (PAHs);
    - Benzene, Toluene, Ethylbenzene, Xylenes (collectively referred to as BTEX);
    - Petroleum Hydrocarbons (PHCs) fractions F1 through F4;
    - Volatile Organic Compounds (VOCs);

- Measurement of the elevation of each monitoring well relative to a geodetic benchmark.
- Measurement of groundwater conditions within each monitoring well.
- Evaluation of laboratory analytical results with respect to the selected SCS.
- Refinement of the existing CSM (developed during the previous Terrapex Phase One ESA) to reflect the information collected during the Phase Two ESA activities.

Two separate SAAPs were completed for the Phase Two ESA; one completed during the initial Phase Two ESA and one completed for the test pitting program. The sampling procedures are documented in detail in Section 5.0. It should be noted that the initial SAAP includes investigation on the northern portion of the 40 Beechcliffe property (reported under a separate cover). The SAAPs are provided in Appendix IV.

The Phase Two ESA was supervised by Greg Sabourin, PEng., of Terrapex, located at 1-20 Gurdwara Road, Ottawa, Ontario. Greg Sabourin, PEng., holds a license under the *Professional Engineers Act* and therefore meets the qualifications to be considered a Qualified Person for the purposes of conducting or supervising environmental site assessments in Ontario per Section 5 (2) (a) of O. Reg. 153/04.

4.2 MEDIA INVESTIGATED

Based on the Phase One ESA findings, the Phase Two ESA work program documented herein included investigation of the environmental quality of both soil and groundwater at the Site. The environmental quality of sediment was not investigated as sediment is not present at the Site.

Soil and groundwater were investigated by drilling boreholes, excavating test pits, installing monitoring wells, and sampling groundwater, as described above, and in Section 5.0.

4.3 PHASE ONE CONCEPTUAL SITE MODEL

The Phase One CSM presented in the Phase One ESA report (Terrapex, 2025) includes figures and narrative that provided the logical basis for the interpretation of PCAs and APECs on the Phase Two Property. The Phase One CSM is reproduced in the sections below.

The Phase One CSM includes the following figures appended to this report:

PHASE ONE CSM FIGURES

Requisite Feature	Figure
i. Show any existing buildings and structures	Figure 1: Site Location Figure 2: Site Features
ii. Identify and locate water bodies located in whole or in part in the Phase One Study Area	Figure 3: Conceptual Site Model – Phase One Study Area

Requisite Feature	Figure
iii. Identify and locate any areas of natural significance located in whole or in part on the Phase One study rea	Figure 3: Conceptual Site Model – Phase One Study Area
iv. Locate any drinking water wells at the Phase One Property	Figure 3: Conceptual Site Model – Phase One Study Area
v. Show roads, including names, within the Phase One Study Area	Figure 3: Conceptual Site Model – Phase One Study Area
vi. Show uses of properties adjacent to the Phase One Property	Figure 3: Conceptual Site Model – Phase One Study Area
vii. Identify and locate areas where any potentially contaminating activity has occurred, and show tanks in such areas	Figure 4: Conceptual Site Model and Potentially Contaminating Activities
viii. Identify and locate any areas of potential environmental concern	Figure 5A: Conceptual Site Model – Areas of Potential Environmental Concern

The Phase One CSM comprises the narrative provided in the following table:

PHASE ONE CSM NARRATIVE

Requisite Component	Description & Assessment
i. Areas where potentially contaminating activity on, or potentially affecting the Phase One Property has occurred	A total of one on-Site and two off-Site PCAs are deemed to have affected the property (as summarized in Table 2, appended). The PCA locations are shown in Figure 4. A total of two APECs were identified associated with the aforementioned on-Site and off-Site PCAs, as summarised in Table 3 (also appended) and on Figure 5A.
ii. Any contaminants of potential concern,	As summarized in Table 3 (appended), media beneath the Site are considered to be potentially affected by the following contaminants of potential concern: <u>Soil and Groundwater</u> • Metals [including hydride forming metals (HFM)] • Polycyclic Aromatic Hydrocarbons (PAHs) • Benzene, Toluene, Ethylbenzene, Xylenes (collectively referred to as BTEX) • Petroleum Hydrocarbons (PHCs) fractions F1 through F4 • Volatile Organic Compounds (VOCs) <u>Soil Only</u> • Hydride-Forming Metals (HFMs); namely Antimony (Sb), Arsenic (As), and Selenium (Se) • Other Regulated Parameters (ORPs); including Hexavalent Chromium (Cr (VI)), Mercury (Hg), Methyl Mercury, Cyanide (CN-), and the following media-specific parameters: • Soil: hot water-soluble Boron (B-HWS), Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), pH
iii. The potential for underground utilities, if present, to affect contaminant distribution and transport,	In general, potential migration pathways for subsurface contaminants at the Site would consist of buried services. The presence of the sanitary sewer which crosses the Site would be expected to affect groundwater flow direction and thus potentially contaminant distribution. The presence of the sanitary sewer located to the southern portion of the Site could affect the groundwater flow at the Site and thus potentially contaminant distribution.
iv. Available regional or site specific geological and hydrogeological information, and	Site & Regional Topography: Site is generally flat with no significant grade difference. Regional grade generally slopes to the north towards the Ottawa River. The grade difference between the Site and Woodroffe Avenue (located to the east) is between 1.0 m to 3.0 m which varies because of the slope of Woodroffe Avenue due to the rail underpass.

Requisite Component	Description & Assessment	
	Approximate Site Elevation:	89 m asl
	Surface Water Drainage:	Infiltration into ground from surface.
	Inferred Groundwater Flow Direction:	The Phase One CSM indicated that the inferred groundwater flow direction at the Site would be north towards Pinecrest Creek.
	Physiography and Soil Stratigraphy:	Ottawa Valley Clay Plains, which is characterized as fine-textured glaciomarine deposits consisting of silt and clay, minor sand and gravel, massive to well-laminated.
	Bedrock and Approximate Depth:	Lower Ordovician dolostone, sandstone of the Beekmantown Group at approximately 21 m bgs.
	Surface Water:	Pinecrest Creek, located approximately 1,935 m to the north of the Site, is the closest mapped waterbody. Pinecrest Creek flows north and ultimately discharges into the Ottawa River approximately 4,800 m from the Site.
	Area of Natural Significance:	None located within 30 m of the Phase One Property, or within the Phase One Study Area.
	Wellhead and Intake Protection Areas:	None located within the Phase One Property, or within the Phase One Study Area.
	Municipal Drinking Water System	All properties are deemed to be connected to the municipal drinking water system supplied by the City of Ottawa.
	Well For Consumption/ Agricultural Use:	None currently or previously located within the Site, or within the Phase One Study Area.
v. How uncertainty or absence of information obtained in each of the components of the Phase One ESA could affect the validity of the model.	The main uncertainty associated with the CSM developed for the Site relates to the limited information regarding the former use of the Site and possible importation of fill, as well as the limited information regarding activities on neighbouring properties, specifically the former concrete plant. This lack of information is mitigated by the inherent nature of residential land uses, which are not typically associated with significant PCAs. Notwithstanding the above, it should be noted that Phase One ESAs have inherent limitations, and therefore findings cannot be considered definitive (i.e., the findings of a Phase One ESA are inherently associated with some uncertainty).	

The following table describes the rationale pertaining to any applicable reliance on exemptions provided by Paragraphs 1, 1.1, 2 and 3 of Section 49.1 of O. Reg. 153/04.

RELIANCE ON EXEMPTIONS

Exemption(s) Circumstances	Rationale
(1.) Substance(s) applied to surfaces for safety of vehicular or pedestrian traffic under conditions of snow or ice or both.	Not relied upon.
(1.1) Excess soil deposited at the property for final placement meets the soil quality standards that apply to the property as determined in accordance with the Excess Soil Standards.	Not relied upon.

Exemption(s) Circumstances	Rationale
(2.) There has been a discharge of drinking water within the meaning of the Safe Drinking Water Act, 2002.	Not relied upon.
(3.) Applicable SCS deemed not exceeded if the concentrations do not exceed the naturally occurring range of concentrations typically found within the vicinity of the Site.	Not relied upon

4.4 DEVIATIONS FROM THE SAMPLING AND ANALYSIS PLAN

Deviations from the initial SAAP during the Phase Two ESA investigation included the completion of supplemental laboratory analysis not necessarily required to fulfill the assessment of the APECs and were completed on the basis of field observations and/or for additional coverage of the Site. The following supplemental laboratory analyses were completed:

- An additional soil sample was submitted from the apparent water table from borehole BH107 (BH107-3A) based on the measurement of an elevated combustible vapour (CV) concentration from the soil sample.
- A groundwater sample collected from monitoring well MW110D was analysed for VOCs and PHC F1-F4 for additional coverage.
- The groundwater sample collected from monitoring well MW111D was analysed for PAHs and ORPs in addition to metals, VOCs and PHC F1-F4.

A copy of the SAAPs are provided in Appendix IV.

4.5 IMPEDIMENTS

Access to the Site was not impeded at any time during the Phase Two ESA work program, except where intended sampling locations conflicted with underground services, such as sanitary sewer lines, and hydro which were present in some areas of the Site.

5.0 INVESTIGATION METHOD

5.1 GENERAL

The soil and groundwater quality at the Site were investigated at the locations shown on Figure 5B through the advancement of boreholes and installation of groundwater monitoring wells to characterize environmental conditions at the APECs identified in the Phase One ESA. Investigation methods followed Standard Operating Procedures (SOPs) prepared by Terrapex for the conduct of environmental investigations.

5.2 DRILLING AND EXCAVATING

Borehole drilling and monitoring well installation services for this work program were provided by Strata Drilling Group (Strata) of Stouffville, Ontario using a direct push drill rig. Strata is an MECP licensed well-drilling contractor. Strata was used for both of the November 21 and 22, 2024, and the December 6, 2024 borehole and monitoring well installation events.

Based on the initial analytical results, specifically from borehole MW111 (soil sample M111-1B), a test pit program was completed at the Site for delineation purposes. Excavation services for the test pit work program were provided by Gerry Crepin Cartage (Crepin) of Ottawa, Ontario using a 9-ton excavator.

Measures to minimize potential cross-contamination or other potential bias are described in Terrapex's SOPs. There were no deviations from the SOPs regarding borehole drilling or test pit excavation during this investigation.

5.3 SOIL

5.3.1 Soil Sampling

The following soil sampling was completed as part of the Phase Two ESA work program and was completed under the full-time supervision of Terrapex staff.

- On November 21 and 22, 2024, Terrapex collected soil samples from all of the boreholes drilled (BH107, BH108, MW109, MW110, MW111 and BH112) per the initial SAAP to depths of 4.5 m bgs. Soil samples were collected at each borehole at regular depth intervals using a disposable dual tube sampler.
- On December 6, 2024, additional drilling was conducted with the purpose of replacing monitoring well MW109, MW110 and MW111 (see Section 5.4.1 for additional details). As soil sampling had previously been completed from surface to 4.5 m bgs, soil sampling from the borehole (MW109D, MW110D, and MW111D) was conducted between 4.5 and 6.1 m bgs (maximum depth of the borehole) using the same procedure as described above

with the exception of MW111D, where a sample of the shallow fill material was also collected.

Laboratory analysis of a soil sample collected from the fill layer at borehole MW111 (soil sample MW111-1B) marginally exceeded the applicable criteria for certain PAH parameters. Based on discussions with the City, it was decided to collect additional soil samples within the immediate vicinity of MW111 to determine lateral and vertical extent of the PAH fill impacts. The following additional work was completed to assess the extent of the PAH impacted fill.

- On December 6, 2024, two additional boreholes were drilled (BH113 and BH114) within two meters of borehole MW111. Soil samples from the same depth as soil sample MW111-1B, were collected from MW111D, BH113 and BH114. The fill samples were submitted for laboratory analysis of PAH parameters.
- On January 15, 2025, Terrapex collected soil samples from test pits (TP101 to TP113). Soil samples were collected from the fill layer and the underlying native silty clay layer (for vertical delineation purposes). Based on the SAAP and in conjunction with Client discussions, soil samples were submitted from select test pits (TP103, TP104, TP106, TP107, TP108, TP109, TP111 and TP111) for laboratory analysis of PAH. Two additional soil samples were submitted for vertical delineation purposes. Soil samples were collected directly from the bucket of the excavator in approximately 0.60 m intervals. Test pits were terminated once the native silty clay layer was encountered beneath the fill layer.

The following methodology was used for each of the three aforementioned soil sampling events. Each recovered sample was divided into two portions. One portion was placed in a clear sampling bag for field screening/logging. The second portion was collected using laboratory supplied sampling containers for analysis of selected COPCs. Samples considered to be “worst-case” based on field screening were submitted for analysis and extracted at the laboratory within the required holding time. Samples were collected based on the following rationale for each of their respective APECs:

- Soil samples collected to assess APEC 1 (the importation of fill of unknown quality) were collected from the apparent fill layer (if present) which was usually indicative by the presence anthropogenic material (debris, construction material etc.) and/or the presence of organic material at depth. Soil samples used to delineate the PAH impacted fill layer were also collected from this layer.
- Samples collected to assess APEC 2 (the former garage and current retail fuel outlet) were collected from the apparent water table as it was possible that contaminants from the former garage and/or the retail fuel outlet would likely migrate in the groundwater to the Site.

Samples for analysis were placed in a cooler with ice and delivered with signed chain of custody to the project laboratory for analysis. Borehole and test pit locations are shown on Figure 5B. Borehole logs and test pit logs illustrating the stratigraphy encountered, chemical analysis samples and measured CV concentrations are included in Appendix V.

5.3.2 Field Screening Measurements

CV concentrations were measured in each soil sample using a RKI Eagle 2 Hydrocarbon Surveyor (Eagle) calibrated to n hexane and operated in “methane elimination” mode. The Eagle can measure combustible organic compounds to a nominal detection level of 5 parts per million (ppm), with an accuracy of ±5%.

The Eagle was calibrated according to the manufacturer's instructions and Terrapex SOPs before the field investigation.

“Worst-case” soil samples from each borehole were identified on the basis of vapour screening, visual and olfactory evidence of contamination, and sample location in relation to potential point sources of impact (as described in Section 5.3.1).

5.4 GROUNDWATER

5.4.1 Monitoring Well Installation

Monitoring well installation services for this work program were provided by Strata, under contract with Terrapex.

On November 22, 2024, a monitoring well was installed in select boreholes (MW109, MW110 and MW111), as shown on Figure 5B. The monitoring wells were constructed using 50 mm inside diameter schedule 40 PVC well pipe and #10 slot screen interval. The annulus of each monitoring well was backfilled with washed silica sand to a depth of approximately 0.3 m above the screened interval. A hydrated bentonite seal was placed above the sand pack to prevent infiltration of surface water into the monitoring well. A monument well casing was placed over each monitoring well for protection. Well installation details are provided within the borehole logs in Appendix V.

The depths to the bottom of the screened intervals of the monitoring wells (MW101, MW103, MW105) were located at 4.5 m bgs. The placement of the screened interval was based on the visual observations of saturated conditions at each of the borehole locations. The screened interval depths were established to assess the surface of the groundwater table for the potential on-Site and off-Site sources of contamination.

During groundwater monitoring events conducted on November 23, and December 2, 2024 (refer to Section 6.2 for additional details), monitoring wells MW109, MW111 and MW112 were found

to be dry and indicated that in spite of observations during the borehole drilling, the wells had apparently not been drilled to an adequate depth to intercept the water table. On December 6, 2024, monitoring wells MW109, MW110 and MW111 were decommissioned and replaced with new monitoring wells (MW109D, MW110D and MW111D) drilled adjacent to the former wells with the bottom of the screened intervals at 6.1 m bgs (as opposed to 4.5 m bgs from the original wells).

The decommissioning of the monitoring wells was supervised by Terrapex and completed by a licensed driller (Strata) and in accordance Ontario *Wells* regulation (R.R.O. 1990, Regulation 903).

Prior to developing and groundwater sampling, the monitoring wells were monitored for CV concentrations in the well headspace, and depths to water and to the bottom were measured in each well. The estimated volume of water in each well and its annulus were calculated based on the depth measurements, diameter of the well standpipe and annulus, and an assumed annulus porosity of 30%.

The monitoring wells were subsequently developed in accordance with Terrapex's SOPs in order to remove entrained particulate in the well standpipe, well screen and filter pack as well as surrounding formation materials. Development of each monitoring well was conducted with a dedicated inertial sampler comprising low density polyethylene (LDPE) tubing and a LDPE foot-valve.

5.4.2 Field Measurements of Water Quality Parameters

Prior to conducting groundwater sampling activities, vapour levels were measured within the headspace of each monitoring using an Eagle. The depth to groundwater and apparent thickness, if any, of any light non-aqueous phase liquids (LNAPL) were then measured using a Solinst interface probe.

Water quality parameters (i.e., temperature, pH, specific conductivity, dissolved oxygen, and oxidation reduction potential) were measured in monitoring wells prior to sampling activities using a flow-through cell and a YSI 556 water quality sensor, in accordance with Terrapex SOPs.

5.4.3 Groundwater Sampling

On December 11, 2024, low-flow sampling was conducted in order to minimize drawdown of the water table. After water quality parameters stabilized, groundwater samples from the monitoring wells were collected. Sampling was conducted using "low-flow" methodology using a peristaltic pump and dedicated sample tubing, as per Terrapex SOPs unless otherwise noted. Groundwater samples were collected from monitoring wells MW109D, MW110D and MW111D per the SAAP. Additional analyses for ORPs (MW111D), and VOCs and PHC F1-F4 (MW110D) were conducted on the groundwater samples for supplemental analysis.

Groundwater samples were collected directly into pre-cleaned, laboratory supplied sampling bottles, packed in a cooler with ice, and shipped under a signed chain of custody to the analytical laboratory for analysis.

5.5 SEDIMENT

Sediment sampling was not completed as sediment is not present at the Site.

5.6 ANALYTICAL TESTING

Laboratory analytical services for this work program involving soil and groundwater media were provided by Paracel Laboratories Ltd. (Paracel) at their facility in Ottawa, Ontario, under contract with the City. Paracel's Ottawa laboratory is accredited by the Canadian Association for Laboratory Accreditation (CALA) to International Standard ISO/IEC 17025:2017, *General Requirements for the Competence of Testing and Calibration Laboratories* for the parameters included in the analytical program.

Soil and groundwater samples were analysed as per the SAAP (with the additional soil and groundwater parameters as outlined in Section 4.4) to address the identified APECs from the Phase One ESA.

5.7 RESIDUE MANAGEMENT

Soil cuttings generated during the work program were contained on-Site in drums for disposal off-Site at a licenced waste disposal facility. Following review of the analytical results the purge water was spread out across the Site. Soil cuttings were transported for off-Site disposal under a bill of lading.

5.8 ELEVATION SURVEYING

Terrapex completed a survey of the geodetic elevations of the top of the pipe and ground surface for each monitoring well and borehole location. A Trimble Catalyst DA2 Global Navigation Satellite System (GNSS) Receiver Navigation Satellite System (GNSS) Receiver was used to establish geodetic elevations with reference to NAD 1983.

5.9 QUALITY ASSURANCE AND QUALITY CONTROL MEASURES

Quality Assurance and Quality Control (QA/QC) measures were implemented during the Phase Two ESA in accordance with Terrapex SOPs. A summary of these measures follows.

5.9.1 Sample Collection Avoidance of Cross-Contamination

During drilling, to mitigate cross-contamination, dual tube sample liners were disposed of after the collection of each sample. Fresh nitrile gloves were worn for the handling of each sample.

During groundwater sampling, dedicated sampling equipment was used at each monitoring well location. Multiple containers (including duplicate samples) were drawn concurrently, not sequentially. To mitigate cross-contamination, the interface probe was washed with a liquid solution of Alconox detergent and rinsed with potable water between each monitoring well. A fresh pair of nitrile gloves was donned at each well location.

Pre-cleaned sample containers for the specific parameters of interest were provided by the laboratory and used at each borehole and monitoring well location for the collection of soil and groundwater samples. Samples for analyses were placed in an enclosed cooler with loose ice and transported under a signed chain of custody to Paracel for chemical analysis.

5.9.2 Field Quality Assurance Sampling

The following type of Quality Assurance (QA) field sampling was conducted by Terrapex during the execution of field programs:

SUMMARY FIELD QA SAMPLING

QA Sample Type	Field QA Sampling
Field Duplicate	A second sample concurrently collected from the same location as another sample and submitted for duplicated analyses.
Field Blank (Soil)	A sample comprising a container pre-charged with methanol preservative into which no soil is placed and subsequently submitted for laboratory analyses
Trip Blank	A sample prepared by the contract laboratory using analyte-free water that accompanies Terrapex during execution of sampling programs but remains unopened.

With the exception of samples prepared by the laboratory, the laboratory was not informed of the nature or number of the field QA/QC samples outlined above.

5.9.3 Laboratory Quality Assurance Sampling

Commercial contract laboratories will have their own internal quality assurance and quality control programs. These programs typically include quality assurance samples in analytical runs, the results of which are provided (in summary form) in the Certificate of Analysis documenting analytical results for a sample submission. Examples of Laboratory QA sample types are summarized below.

TYPICAL LABORATORY QA SAMPLING

QA Sample Type	Laboratory QA Sampling
Method Blank	An aliquot prepared using analyte-free water and processed through the entire analytical method, including extracting, digestion, and other preparation procedures.
Matrix Spike	A second aliquot from an analytical sample that is fortified with known concentrations of the target parameters and processed through the entire analytical method, including extracting, digestion, and other preparation procedures.
Laboratory Duplicate	A second aliquot from an analytical sample that is included in the analytical run for comparison to results from the corresponding sampling pair.
Surrogate Recovery	Surrogates are parameters not normally found in nature but that behave chemically and physically similar to the analytical run target parameters, and that are introduced into the aliquot of an analytical sample.

6.0 REVIEW AND EVALUATION

6.1 GEOLOGY

6.1.1 Background

The Site is located in a physiographic region known as Ottawa Valley Clay Plains. The Ottawa Valley Clay Plains are characterized as fine-textured glaciomarine deposits consisting of silt and clay, minor sand and gravel, massive to well-laminated.

Bedrock geology consists of Lower Ordovician dolostone, sandstone of the Beekmantown Group. Bedrock was not encountered during field investigations completed by Terrapex. Ontario's Geological Survey (OGSEarth), Google Earth map (2006) indicates the depth to bedrock in the vicinity of the Site to be approximately 21 m bgs.

6.1.2 Encountered Stratigraphy

The Phase Two ESA fieldwork programs encountered three hydro-stratigraphic units at the Site, as summarized in the following table.

SUMMARY OF HYDRO STRATIGRAPHIC UNITS ENCOUNTERED BENEATH THE SITE

Stratigraphic Unit	General Description	Depth Range (m bgs)	Hydrogeological Condition
Fill	Moist, dark brown silty clay with trace sand, asphalt and/or organics	0.0 – 3.0	Unsaturated
Native	Moist, brown-olive, or greyish brown, silty clay	1.0 -4.1	Saturated
Native	Moist, brown-grey sand	3.0 – 6.1	Saturated

No aquitards were encountered during the intrusive investigations. As no contaminants were identified in the shallow overburden aquifer, deeper aquifers were not investigated.

The general soil stratigraphy at the Site is shown on the borehole and test pit logs in Appendix V, and on cross-sections in Figures 6A and 6B.

6.2 GROUNDWATER ELEVATIONS AND FLOW DIRECTION

On November 22, 2024, three groundwater monitoring wells (MW109, MW110 and MW111) were installed at the Site and screened between 1.5 and 4.5 m bgs. Groundwater monitoring events were conducted on November 23 and December 2, 2024, as described below:

- On November 23, 2024, monitoring wells MW109, MW110, and MW111 were monitored, and all of the monitoring wells were found to be dry.

- On December 2, 2024, monitoring wells MW109, MW110, and MW111 were monitored, and all of the monitoring wells were found to be dry.

Based on the November 23 and December 2, 2024 monitoring events, it was decided to decommission the three monitoring wells and install deeper monitoring wells at each location (refer to Section 5.4.1).

On December 11, 2024 (following the installation following the installation of the deeper monitoring wells MW109D, MW110D and MW111D), a monitoring event was conducted. The depth to groundwater was measured between 4.62 m bgs (MW109D) and 4.89 m bgs (MW111D).

Interpretations of the groundwater contours from the December 11, 2024, monitoring event indicated that the shallow groundwater flow was towards the northeast. The groundwater monitoring data is summarised in Table 4 (appended) and the interpreted groundwater elevation contours are shown on Figures 7.

Free-product or non-aqueous phase liquid (NAPL) was not encountered during monitoring, purging, or sampling of the monitoring wells during the Phase Two ESA work programs.

6.3 GROUNDWATER HYDRAULIC GRADIENTS AND CONDUCTIVITY

Based on the relative groundwater elevations on December 11, 2024, the interpreted horizontal gradient was 0.020 (calculated between MW110D and MW109D).

Vertical hydraulic gradients were not calculated as the measured concentrations of contaminants of concern in the shallow groundwater beneath the Site do not exceed the applicable SCS.

Based on the coarse textured soil at the Site (see Section 6.4 for further details), the hydraulic conductivity for the unconfined sand aquifer was estimated to range from 10^{-4} to 10^{-5} m/sec (Freeze and Cherry, 1979).

6.4 SOIL TEXTURE

Soil samples were submitted for grain size analysis from soil samples collected from boreholes BH108 (BH108-1A) and MW109 (MW109-3A). Based on the grain size analysis, the fill material present at the Site (represented by BH108-1A), described as silty sand with some gravel and trace organics, was determined to be medium/fine-textured. However, it should be noted that the fill sample (BH108-1A) grain size is marginally considered fine/medium, as 47.6% and 52.4% of the material was classified as coarse and fine/medium, respectively.

The native sandy silt (represented by MW109-3A) was determined to be medium/fine-textured. Grain size analysis is provided in the laboratory of analysis certificates (Appendix VI).

Due to the presence of the coarse-textured native sand material underlying the native silty clay layer (not analyzed for grain size but understood to be coarse-textured) and the marginal results from the grain size analysis for soil sample BH108-1A, the QP has determined that applying the coarse-textured to the Site would be an appropriate conservative measure, as it is estimated that more than one-third of the soil (measured by volume) is the coarse sand material (per the definitions of O. Reg. 153/04).

6.5 SOIL FIELD SCREENING

All soil material exposed to anthropogenic interaction or disturbance may be classified as fill material, including soil that is essentially reworked (or turned-over) native soil. The identification of fill material at the Site does not directly infer potential chemical impairment, unless it is known to have been imported to the Site. In this regard, Terrapex considers the physical composition of a fill material to be a prime indicator of potential chemical impairment, and as such field screening includes a visual inspection for the presence of deleterious components (fragments of wood, brick, ash, asphalt, concrete, and similar materials).

Evidence of heterogeneous fill material was observed at all boreholes (BH107, BH108, MW109, MW110, MW111, BH112, BH113 and BH114) and all of the test pits (TP101 to TP113).

In addition, potential impacts associated with spills, leaks, or other releases were screened by measuring CV concentrations in the headspace of the portion of recovered soil samples.

During the Phase Two ESA, the following headspace vapour screening measurements were recorded:

- CV concentrations during the November 21 and 22, 2024 soil sampling were less than 5 ppm in all soil samples collected from all boreholes with the exception of sample BH107-3A that had a measured CV concentration of 130 ppm.
- CV concentrations during the December 6, 2024 soil sampling were less than 5 ppm in all soil samples collected, with the exception of samples MW111D-5, BH113-1 and BH114-1, which had measured CV concentrations of 40 ppm, 30 and 45 ppm respectively.
- CV concentrations during the January 15, 2025 soil sampling were less than 5 ppm in all soil samples collected.

The CV concentrations measured for each soil sample are included on the borehole and test pit logs (Appendix V).

6.6 SOIL QUALITY

Laboratory results for the soil samples submitted for analyses of metals, HFMs, ORPs, PAHs, BTEX and PHCs, and VOCs are summarized in the appended Tables 5 through 8, respectively,

with the laboratory Certificates of Analysis enclosed in Appendix VI. As indicated in the tables, most of the soil samples met the applicable Table 3 SCS for the parameters analysed, except for the following:

- BH113-1, TP107-12 (duplicate of TP107-2) and TP109-1 had concentrations of acenaphthylene greater than the Table 3 SCS;
- TP107-12 (duplicate of TP107-2) had a concentration of anthracene, benzo[k]fluoranthene and phenanthrene greater than the Table 3 SCS;
- TP107-2, TP107-12 (duplicate of TP107-2), and TP109-1 had a concentration of benzo[a]anthracene greater than the Table 3 SCS;
- MW111-1B, MW111D-5, BH113-1, TP107-2, TP107-12 (duplicate of TP107-2) and TP109-1 had a concentration of benzo[a]pyrene greater than the Table 3 SCS;
- TP107-12 (duplicate of TP107-2), and TP109-1 had a concentration of benzo[b]fluoranthene, dibenzo[a, h]anthracene and indeno[1 2, 3]pyrene greater than the Table 3 SCS; and,
- MW111-1B, MW111D-5, BH113-1, TP107-2, TP107-12 (duplicate of TP107-2), TP108-2 and TP109-1 had a concentration of fluoranthene greater than the Table 3 SCS

Lateral distribution of soil samples for each of parameter group are depicted as plan views presented in Figures 8 through 14. Lateral and vertical delineation of PAH impacts to soil are depicted as plan and cross-sectional views presented in Figures 11A through 11C.

6.7 GROUNDWATER QUALITY

Laboratory results for the groundwater samples submitted for analyses of metals, HFMs, ORPs, PAHs, BTEX, PHCs, and VOCs are summarized in the appended Tables 9 through 12, respectively, with the laboratory Certificates of Analysis enclosed in Appendix VI. As indicated in the tables, all of the groundwater samples met the applicable Table 3 SCS for the parameters analysed.

Lateral distribution of groundwater samples are depicted as plan presented in Figures 15 through 21.

6.8 SEDIMENT QUALITY

The environmental quality of sediment was not investigated as sediment is not present at the Site.

6.9 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

Quality assurance samples involving comparisons of actual results to expected results are evaluated on the basis of recovery, or recovery percentage. Note that recovery does not necessarily relate to the ability to provide consistent (similar) quantitations between successive analyses.

Recovery is calculated as follows:

$$Recovery = \frac{reported\ concentration}{actual\ (expected) concentration}\ x\ 100\%$$

Quality assurance samples involving comparisons of 'duplicate' analysis are evaluated on the basis of ***Relative Percent Difference (RPD)***. RPD provides a measure of the ability to provide consistent results on successive analyses, but does not necessarily relate to the ability to provide results that are representative of the actual concentration of the target parameter (e.g., the expected result when comparing against a known standard).

RPD is calculated as follows:

$$RPD\ = \left| \frac{result_1 - result_2}{\frac{1}{2}\ x\ (result_1 + result_2)} \right| x\ 100\%$$

RPD values should not be calculated where one or both results do not yield quantifiable results (i.e., non-detect findings), or where one or both results are less than five times the reported detection limits. RPD values should not be calculated for parameters which are based on calculations using raw data (e.g., sodium adsorption ratio, total xylenes); instead, where applicable, RPD values should be calculated for the 'raw' data (e.g., the m&p-xylenes, o-xylenes parameters).

Note that the mere absence of a calculated RPD is not considered a quality assurance failure, but simply a situation where alert criteria cannot be quantifiably evaluated. Similarly, the absence of a RPD value is not necessarily considered to be an acceptable field quality assurance result.

6.9.1 Field Quality Control Objectives

Analytical concentrations for soil and groundwater field duplicate, blank and spike samples, together with the calculated RPDs are presented in the tables included as Appendix VII. A summary of the field quality assurance objectives is provided below.

FIELD QC OBJECTIVES

METRIC	QUALITY CONTROL OBJECTIVE	RESULT
Sample Integrity	Deviation from SOP recorded within field notes	No
	Significant variance in field screening results (if applicable) recorded within field notes between duplicate samples	No
	Laboratory reports average sample temperature at time of receipt greater than 10ºC	No
	Incorrect sampling container employed	No
	Broken or leaking sampling container reported by laboratory	No
	Excessive particulate within received water sample reported by laboratory	No
Sample Identification Integrity	Laboratory reports discrepancy between samples reported on Chain of Custody and those actually received (as per sampling container labels)	Yes (see below)
	Laboratory reports unlabelled sample received (no sample identification apparent)	No
Chain Of Custody Integrity	Laboratory reports missing/damaged custody seal	No
	Laboratory reports missing Chain of Custody form	No
	Date/time of sample recovery not recorded on Chain of Custody form	No
Sample Storage (Hold Time) Integrity	Sample for analysis of VOC / F1 PHCs and/or volatile gases received by laboratory more than 36 hours after recorded sample collection	Yes (see below)
	Sample for analysis other than VOC / F1 PHCs and volatile gases received by laboratory more than 72 hours after recorded sample collection	No

On Certificate of Analysis 25033978, the test pit sample TP107-2 was labelled incorrectly on the chain of custody as “TPP107-2”. This copy error does not affect the interpretation of the data. The sample name TP107-2 has been used to identify this sample.

It was noted that the sample name on the Certificate of Analysis for soil sample BH107-3A was mislabelled as “MW107-3A”. The use of “MW” is typically only used for boreholes instrumented as monitoring wells (as opposed to “BH” for a borehole) per the nomenclature policy for Terrapex. This mislabelling does not affect the interpretation of the results. The sample name BH107-3A has been used to identify this sample.

The 36-hour goal for submitting soil and groundwater samples to the laboratory is an internal Terrapex guideline that is to ensure that the laboratory will have sufficient time to extract and analyses the samples within the required laboratory guideline. As all samples were preserved where necessary, kept cold and analysis was completed within the required hold time. As a result, this is not considered to affect the interpretation of the analytical data.

6.9.2 Field Quality Assurance Objectives

Analytical concentrations for soil and groundwater field duplicate, blank and spike samples, together with the calculated RPDs are presented in tables provided in Appendix VII. A summary of the field quality assurance objectives is provided below.

FIELD QA OBJECTIVES

QA Sample Type	Field QA Sampling
Field Duplicate	Acceptable correlation of parameter concentrations between parent field duplicate and its parent sample, expressed as RPD
Trip Blank (groundwater)	All concentrations for parameters analysed should be less than detection.
Methanol blank (soil)	All concentrations for parameters analysed should be less than detection.

The following field QA samples were collected by Terrapex as part of the Phase Two investigation program:

SUMMARY FIELD QA SAMPLING

QA Sample Type	QA Sample ID & (Parent Sample ID)	Sample Date	Scope of Analysis	QA Objectives Satisfied
Soil Duplicates	MW110-1D (MW101-1A)	November 21, 2024	Metals, HFMs, ORPs*, PAHs	Yes
	MW111-2D (MW111-2C)	November 22, 2024	Metals, HFMs, PHCs, BTEX, VOCs	Yes
	TP107-12 (TP107-2)	January 15, 2025	PAHs	No (see below)
Groundwater Duplicates	MW1005 (MW105D)	December 13, 2024	Metals, HFMs, ORPs*, PAHs, PHCs, BTEX, VOCs	Yes
Groundwater Trip Blank	Methanol Blank	November 25, 2025	PHC F1, BTEX, VOCs	Yes
Soil Trip Blank	Trip Blank	December 11, 2024	PHC F1, BTEX, VOCs	Yes

The RPD calculated for electrical conductivity (EC) for soil sample MW110-1A and its duplicate pair MW110-1D was 21% which had exceeded the alert criteria of 10%. Since neither soil sample exceeded the Table 3 SCS this does not affect the interpretation of the data.

The RPDs that were able to be calculated for soil sample TP107-2 and its duplicate pair TP107-12 ranged between 90% (benzo[g, h, i]pyrene) and 174% (phenanthrene) which exceeds the RDP alert criteria of 40% for PAH analysis. The elevated RPDs are likely due to non-homogeneity of the sample matrix (i.e., the fill material) and is not expected to significantly alter the interpretation of the data, as multiple PAH parameters exceeded for both of the sample and its duplicate pair. Non-homogeneity of fill material is not unexpected.

6.9.3 Laboratory Quality Assurance Objectives

The laboratory's QA/QC program consisted of the analysis of laboratory replicates, method and spiked blanks, process percent recoveries, matrix spikes, and surrogate percent recoveries, as appropriate for the particular analysis protocol.

The QA section(s) of the laboratory Certificates of Analyses were reviewed to identify any contraventions to the following QA objectives:

LABORATORY QA OBJECTIVES

Laboratory QA Objectives	Objective Satisfied	Remarks
Gas Chromatography Flame Ionization (GC - FID) did not reach baseline	**Lab Report # 2448154 (Soil – Boreholes)** Yes – Accepted based on completion of gravimetric analysis and resulting analytical results.	The GC-FID for soil samples BH107-1B and MW109-2A did not reach baseline. As the analytical result for gravimetric analysis did not exceed the Table 3 SCS for PHC F4 this is not expected to affect the interpretation of the data.
Spike recoveries were outside of the accepted range of 50% to 140% recovery.	**Lab Report # 2450112 (Soil – Boreholes)** Yes - Batch data was accepted by the laboratory based on other QC data.	The laboratory indicated that the spike recoveries were outside of the accepted range for benzo[a]anthracene, benzo[a]pyrene and chrysene. The laboratory indicated that the spike recoveries were outside of the accepted range due to non-homogenous matrix of the sample.
Laboratory duplicate results exceeded the RPD	**Lab report # 2450112 (Soil – Test pits)** Yes. Based on the homogeneity of the soil sample the exceedance of the RPD is not unexpected.	The laboratory duplicate analysis of benzo[b]fluoranthene, benzo[k]fluoranthene, dibenzo[a,h]anthracene, indeno[l,2,3-cd] pyrene and phenanthrene were outside the RPD limit of 40%. This is not unexpected due to the sample non-homogeneity of the sample matrix (i.e., the fill present at the Site). This was further supported by the analysis of the field duplicates.
Spike recoveries were outside of the accepted range of 50% to 140% recovery.	**Lab Report # 2450533 (Groundwater)** Yes The batch was accepted based on other acceptable QC.	The spike recoveries for the groundwater samples for analysis of lead (72.8%), molybdenum (75.5%) and zinc (79.2) were marginally outside of the of the control limits (80%-120%). This could bias the analytical results low. However, all of the parameters had concentrations that were well below the Table 3 SCS. This does not affect the interpretation of the analytical data.

6.9.4 Summary of QA/QC Results

Based on the above review of the QA/QC program, no concerns regarding the adequacy or representativeness of the sampling and analytical program were identified and, as a result, the decision-making was not affected, and the overall objectives of the investigation and the assessment were met.

6.10 PHASE TWO CONCEPTUAL SITE MODEL

A preliminary conceptual site model (CSM) was developed as part of the Phase One ESA which is discussed in Section 4.3. Following completion of the Phase Two ESA field program, the CSM has been updated to present the Site characteristics (prior to any efforts to reduce contaminant concentrations), identify and evaluate areas of contaminant impact, including their sources, exposure routes, and receptors at risk.

The Phase Two CSM comprises the tabulated narrative in Appendix VIII and the Figure 22A and Figure 22B contained in this report for CSM for human health and ecological exposure, respectively.

7.0 CONCLUSIONS

Based on the findings of the Phase Two ESA, the environmental quality of soil at the Site does not meet the Table 3 SCS. For due diligence purposes or prior to site redevelopment a full-depth soil remediation and/or a risk assessment should be completed in accordance with the requirements of O. Reg. 153/04.

7.1 SIGNATURES

This report has been completed in accordance with the terms of reference for this project as agreed upon by the City of Ottawa (the City) and Terrapex Environmental Ltd. (Terrapex) and generally accepted engineering or environmental consulting practices in this area.

The reported information is believed to provide a reasonable representation of the general environmental conditions at the site; however, studies of this nature have inherent limitations. The data were collected at specific locations and conditions may vary at other locations, or with the passage of time. The assessment was also limited to a study of those chemical parameters specifically addressed in this report.

Terrapex has relied in good faith on information and representations obtained from the Client and third parties and, except where specifically identified, has made no attempt to verify such information. Terrapex accepts no responsibility for any deficiency or inaccuracy in this report as a result of any misstatement, omission, misrepresentation, or fraudulent act of those providing information. Terrapex shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time of the study.

This report has been prepared for the sole use of the City of Ottawa. Terrapex accepts no liability for claims arising from the use of this report, or from actions taken or decisions made as a result of this report, by parties other than the City of Ottawa.
The objectives and requirements set out in Schedule E of O. Reg. 153/04 have been applied in carrying out this environmental site assessment.

Respectfully submitted,
TERRAPEX ENVIRONMENTAL LTD.

Jeff Murray, CET
Environmental Scientist

Greg Sabourin, PEng, QP_{ESA}
Site Assessor

Keith Brown, PEng, QP_{ESA}
Senior Project Manager

8.0 REFERENCES

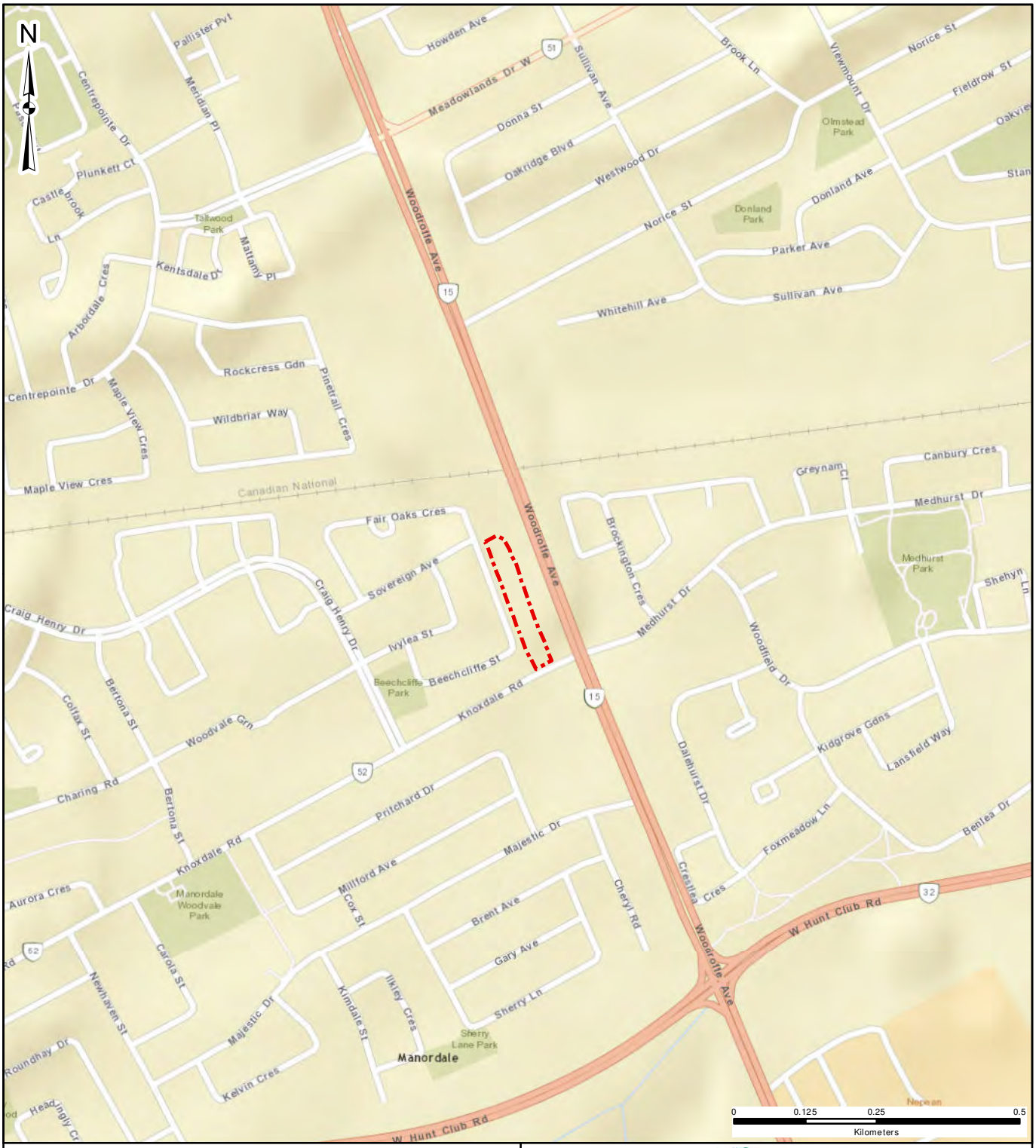
Groundwater. Prentice-Hall Canada Inc., Toronto. Freeze, Allan R. and Cherry, John A., 1979.

Ontario Regulation 153/04, Records of Site Condition – Part XV.1 of the Environmental Protection Act.

Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Ministry of Environment, Conservation and Parks. April 15, 2011.

Phase One Environmental Site Assessment, South Portion of 40 Beechcliffe Street, Ottawa, Ontario, prepared for the City of Ottawa by Terrapex Environmental Ltd., dated April 2, 2025.

FIGURES



LEGEND

PHASE ONE PROPERTY BOUNDARY

DATA SOURCE: ESRI
MAP PROJECTION: NAD 1983 UTM Zone 18N

CLIENT: Ottawa

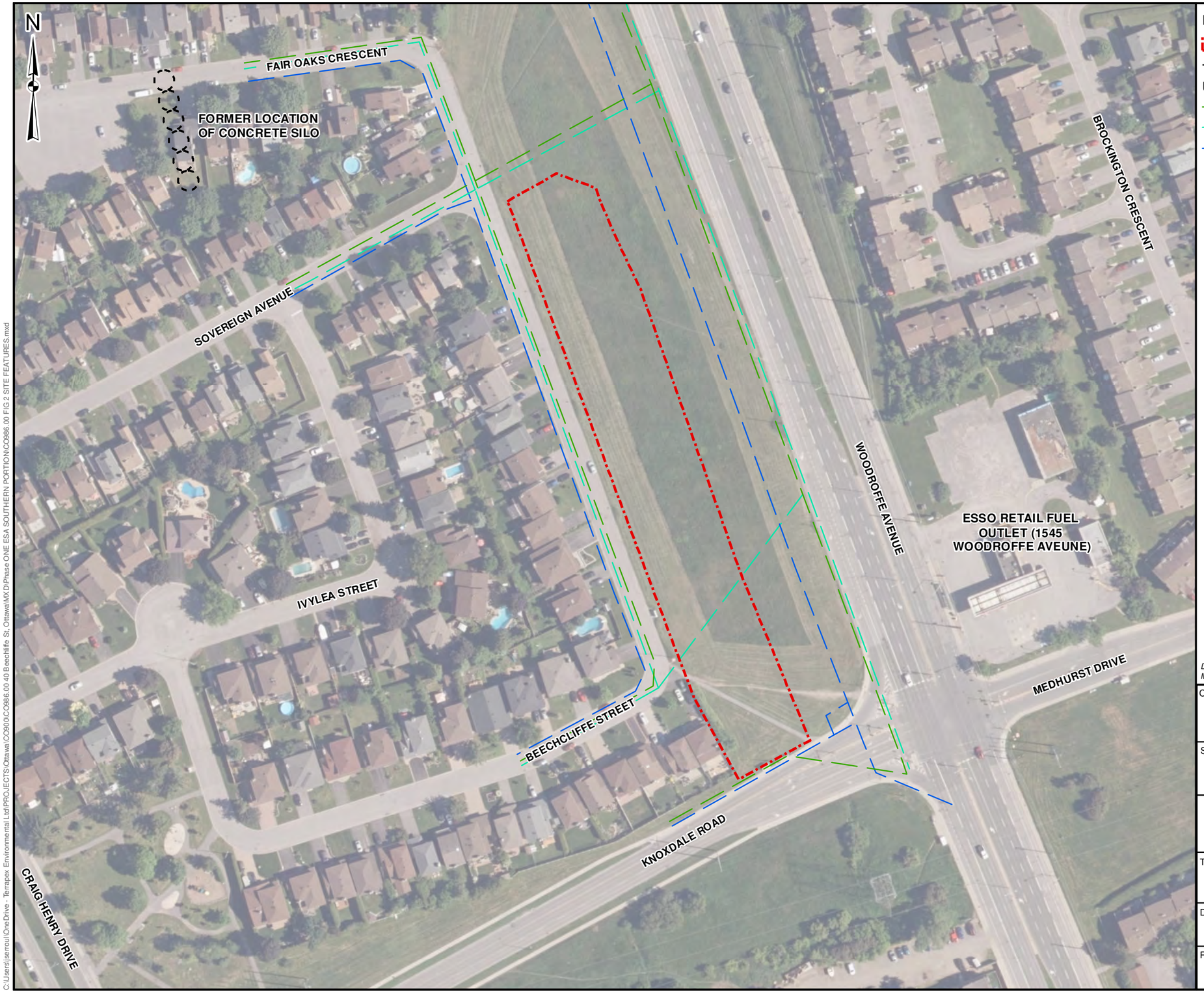
SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
SITE LOCATION

DRAWN BY: SF/JS	PROJECT NO.: CO986.00	CHECKED BY: KB
REVISION: 00	DATE: JANUARY 2025	**FIGURE: 1**

jserroul C:\Users\jserroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO900\CO986.00 40 Beechcliffe St, Ottawa\MXD\Phase ONE ESA SOUTHERN PORTION\CO986.00 FIG 1 SITE LOCATION.mxd



LEGEND

- PHASE ONE PROPERTY BOUNDARY
- CANADIAN NATIONAL RAILWAY

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
SITE FEATURES

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SF	CO986.00	KB
REVISION: 00	DATE: JANUARY 2025	FIGURE: **2**

C:\Users\jsarroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\Phase ONE ESA SOUTHERN PORTION\CO986.00 FIG 2 SITE FEATURES.mxd

N

ROCKCRESS GARDEN

WILDBRIAR WAY

PINETRAIL CRESCENT

UNDEVELOPED

UNDEVELOPED

BEACHBURG RAIL CORRIDOR

BROCKINGTON CRESCENT

FAIR OAKS CRESCENT

FORMER LOCATION OF CONCRETE SILO

RESIDENTIAL

ABITIBI CRESCENT

SOVEREIGN AVENUE

CRAIG HENRY DRIVE

RESIDENTIAL

WOODROFFE AVENUE

ESSO RETAIL FUEL OUTLET (1545 WOODROFFE AVEUNE)

MEDHURST DRIVE

STRATHEARN COURT

WOODFIELD DRIVE

IVYLEA STREET

BEECHCLIFFE STREET

LAVONNE COURT

LAVONNE COURT

WOODVALE GROVE

RESIDENTIAL

DALEHURST DRIVE

KNOXDALE ROAD

RESIDENTIAL

PRITCHARD DRIVE

MILLFORD AVENUE

MAJESTIC DRIVE

CHERYL ROAD

CRESTLEA CRESCENT

LEGEND

- PHASE ONE PROPERTY BOUNDARY
- PHASE ONE STUDY AREA
- CANADIAN NATIONAL RAILWAY

0 50 100 150

Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
CONCEPTUAL SITE MODEL - PHASE ONE STUDY AREA

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	KB
REVISION: 00	DATE: JANUARY 2025	FIGURE: **3**

C:\Users\jserrou\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\Phase ONE ESA SOUTHERN PORTION\CO986.00 FIG 3 CSM - STUDY AREA.mxd

C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa (CO900)\CO986.00 40 Beechliffe St, Ottawa\MXD\Phase ONE ESA SOUTHERN PORTION\CO986.00 FIG 4 CSM - PCAs.mxd

LEGEND

- PHASE ONE PROPERTY BOUNDARY
- CANADIAN NATIONAL RAILWAY

POTENTIALLY CONTAMINATING ACTIVITIES

- ON-SITE PCA LEADING TO APEC
- OFF-SITE PCA LEADING TO APEC
- OFF-SITE NOT LEADING TO APEC

POTENTIALLY CONTAMINATING ACTIVITY TYPES

12. CONCRETE, CEMENT AND LIME MANUFACTURING

27. GARAGES AND MAINTENANCE AND REPAIR OF RAILCARS, MARINE VEHICLES AND AVIATION VEHICLES

28. GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS

30. IMPORTATION OF FILL MATERIAL OF UNKNOWN QUALITY

46. RAIL YARDS, TRACKS AND SPURS

OT1. OTHER - SPILL

OT2. OTHER - WASTE GENERATION

OT3. OTHER - RECORD OF UNDERGROUND PIPELINE

NOTE:

- PCA ID (PCA TYPE)

REFER TO THE REPORT FOR ADDITIONAL DETAILS.

0 50 100 150
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

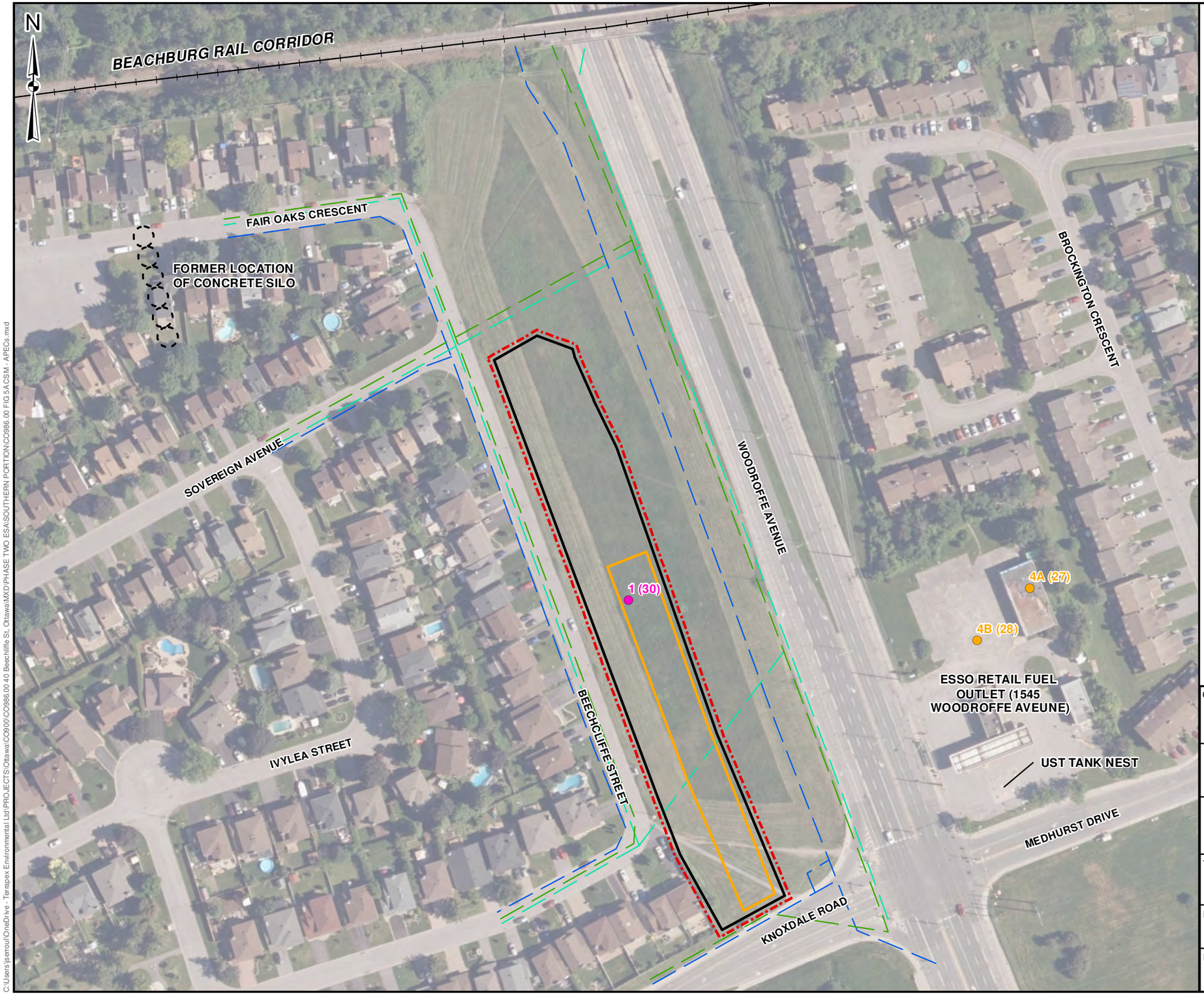
CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **CONCEPTUAL SITE MODEL AND POTENITALLY CONTAMINATING ACTIVITIES**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	KB
REVISION:	**DATE:**	**FIGURE:**
00	FEBRUARY 2025	**4**



LEGEND

- PHASE ONE PROPERTY BOUNDARY
- CANADIAN NATIONAL RAILWAY

POTENTIALLY CONTAMINATING ACTIVITIES

- ON-SITE PCA LEADING TO APEC
- OFF-SITE PCA LEADING TO APEC

AREA OF POTENTIAL ENVIRONMENTAL CONCERN

- APEC-1 (ENTIRE PROPERTY)
- APEC-2 A,B

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

APEC	PCA ID	PCA TYPE	DESCRIPTION
1	1	30	IMPORTATION OF FILL MATERIAL OF UNKNOWN QUALITY
2A	4A	27	GARAGES AND MAINTENANCE AND REPAIR OF RAILCARS, MARINE VEHICLES AND AVIATION VEHICLES
2B	4B	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

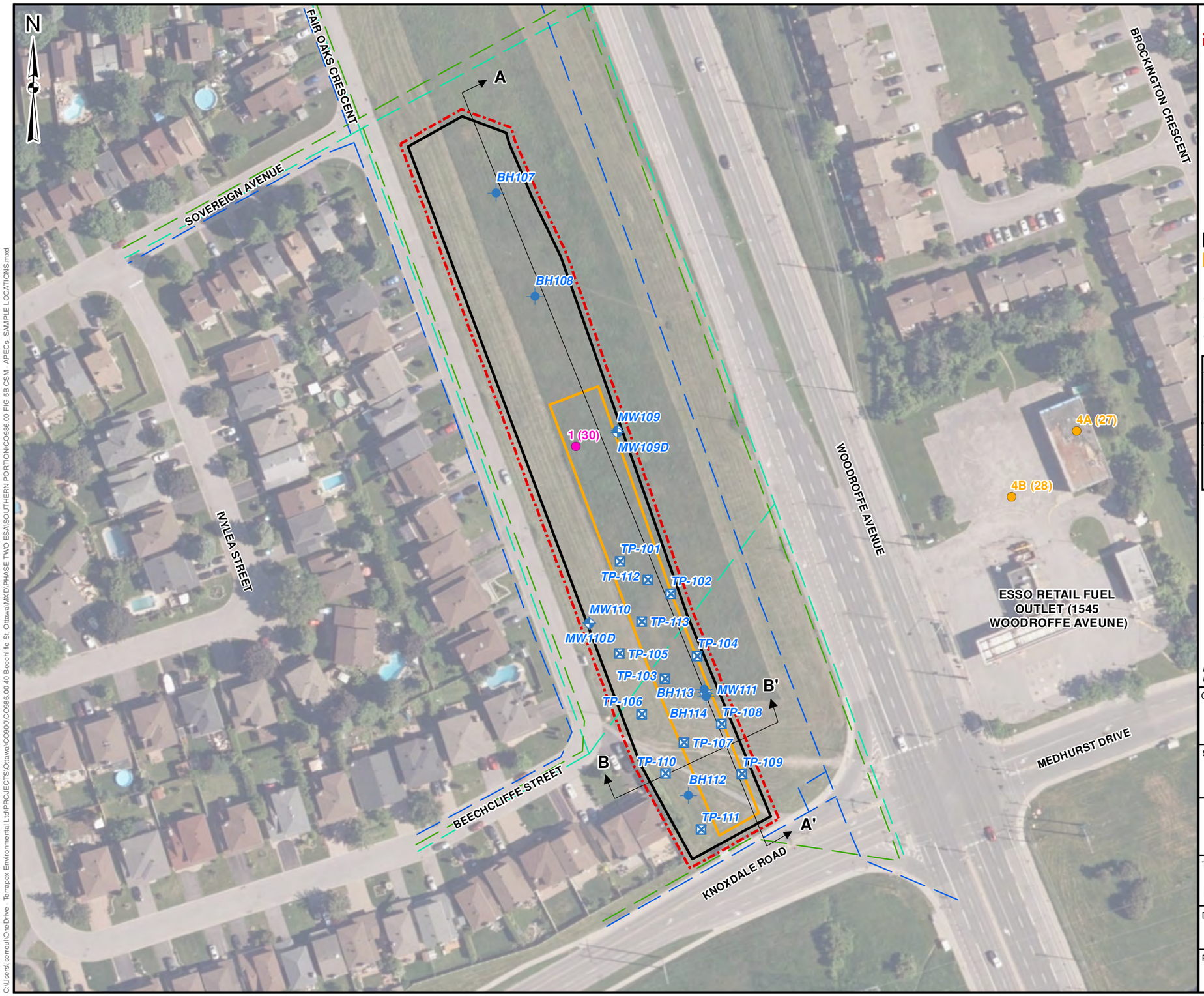
SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE: **CONCEPTUAL SITE MODEL - AREAS OF POTENTIAL ENVIRONMENTAL CONCERN**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	KB
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: **5A**

C:\Users\jserrou\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986_00_FIG 5A CSM - APECs.mxd



LEGEND

- PHASE ONE PROPERTY BOUNDARY
- CANADIAN NATIONAL RAILWAY
- BOREHOLE
- MONITORING WELL
- TEST PIT
- CROSS SECTIONS

POTENTIALLY CONTAMINATING ACTIVITIES

- ON-SITE PCA LEADING TO APEC
- OFF-SITE PCA LEADING TO APEC

AREA OF POTENTIAL ENVIRONMENTAL CONCERN

- APEC-1 (ENTIRE PROPERTY)
- APEC-2 A,B

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

APEC	PCA ID	PCA TYPE	DESCRIPTION
1	1	30	IMPORTATION OF FILL MATERIAL OF UNKNOWN QUALITY
2A	4A	27	GARAGES AND MAINTENANCE AND REPAIR OF RAILCARS, MARINE VEHICLES AND AVIATION VEHICLES
2B	4B	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
CONCEPTUAL SITE MODEL - AREAS OF POTENTIAL ENVIRONMENTAL CONCERN AND SAMPLE LOCATIONS

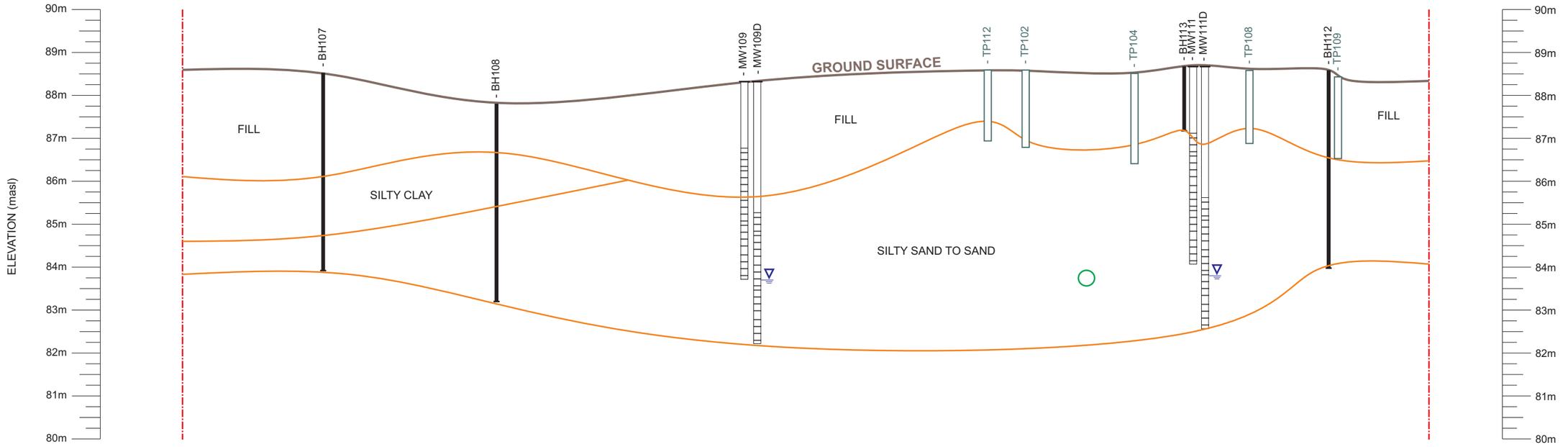
DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	KB
REVISION: 00	DATE: JANUARY 2025	FIGURE: **5B**

C:\Users\jsarroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO900\CO986.00 40 Beechcliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00 FIG 5B CSM - APECs, SAMPLE LOCATIONS.mxd

LOOKING EAST

A

A'



NOTES:
1. SOIL STRATIGRAPHY BETWEEN LOCATIONS IS INTERPRETED.
2. UTILITY LOCATIONS AND DEPTHS ARE APPROXIMATE AND ARE FOR ILLUSTRATION PURPOSES.

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- STRATIGRAPHIC UNIT
- GROUNDWATER LEVEL (AS OF DECEMBER 11, 2024)
- SEWER LINE
- MONITORING WELL
- SCREENED LEVEL
- BOREHOLE
- TEST PIT

HORIZONTAL SCALE
0 15m 30m

CLIENT: Ottawa

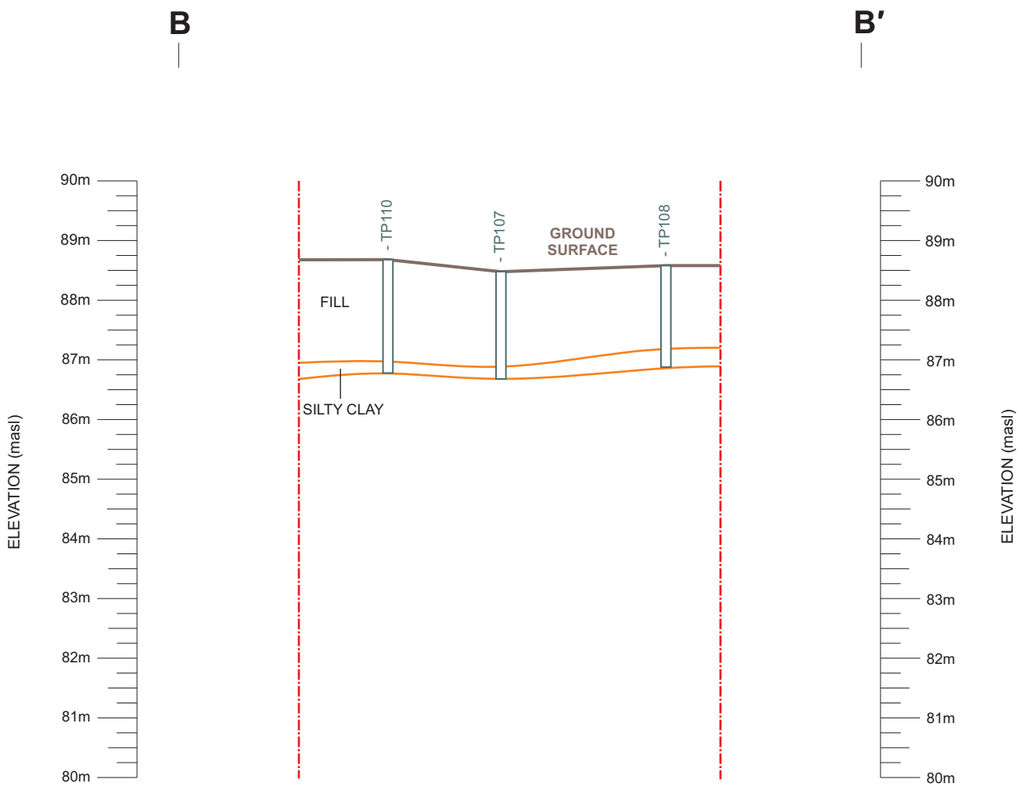
SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **CROSS SECTION A-A'**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: **6A**

LOOKING NORTH



NOTES:
1. SOIL STRATIGRAPHY BETWEEN LOCATIONS IS INTERPRETED.

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- STRATIGRAPHIC UNIT
- TEST PIT

HORIZONTAL SCALE
0 10m 20m

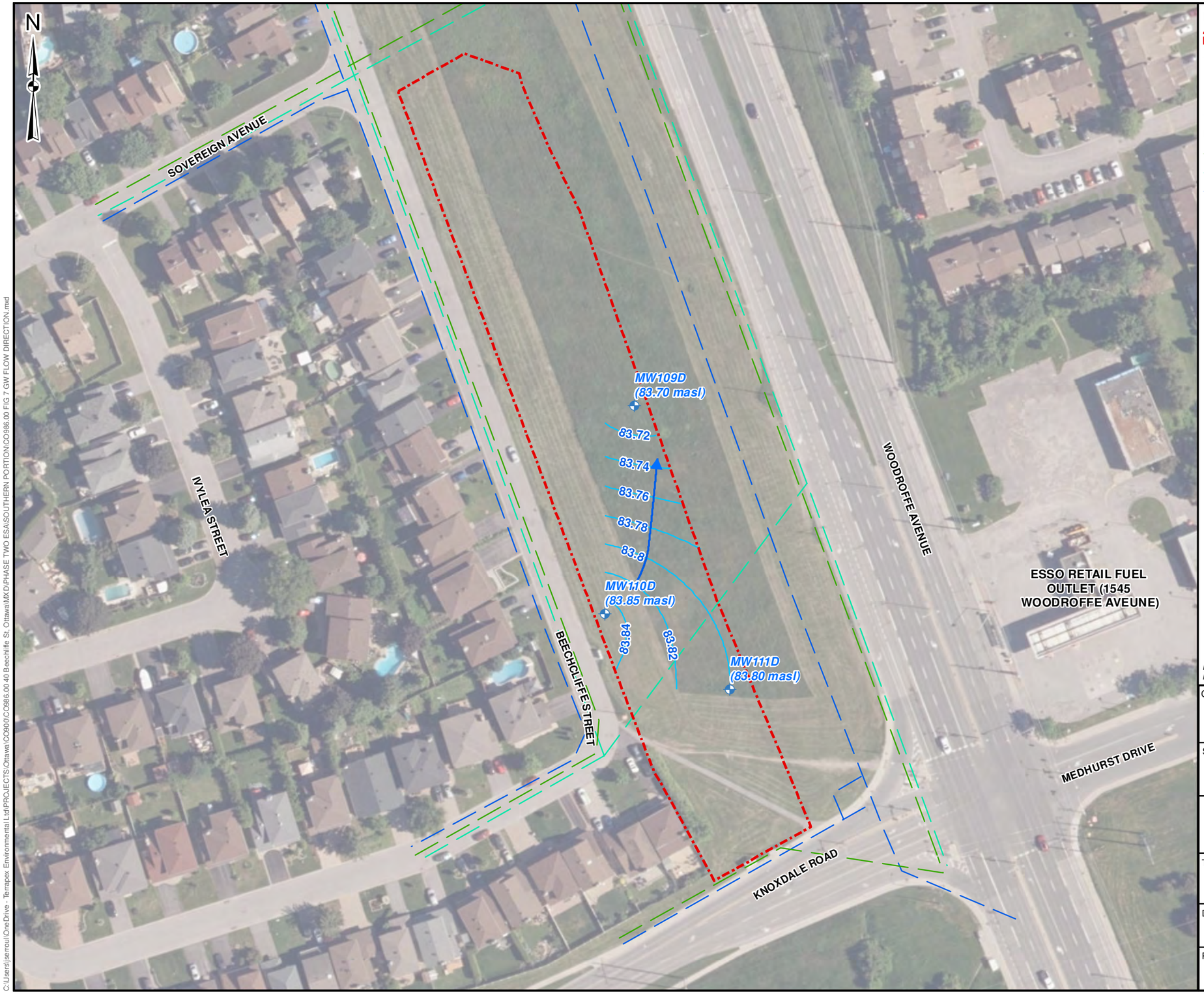
CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **CROSS SECTION B-B'**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: **6B**



LEGEND

- PHASE TWO PROPERTY BOUNDARY
- CANADIAN NATIONAL RAILWAY
- MONITORING WELL
- INTERPRETED GROUNDWATER CONTOURS
- INTERPRETED GROUNDWATER FLOW DIRECTION

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

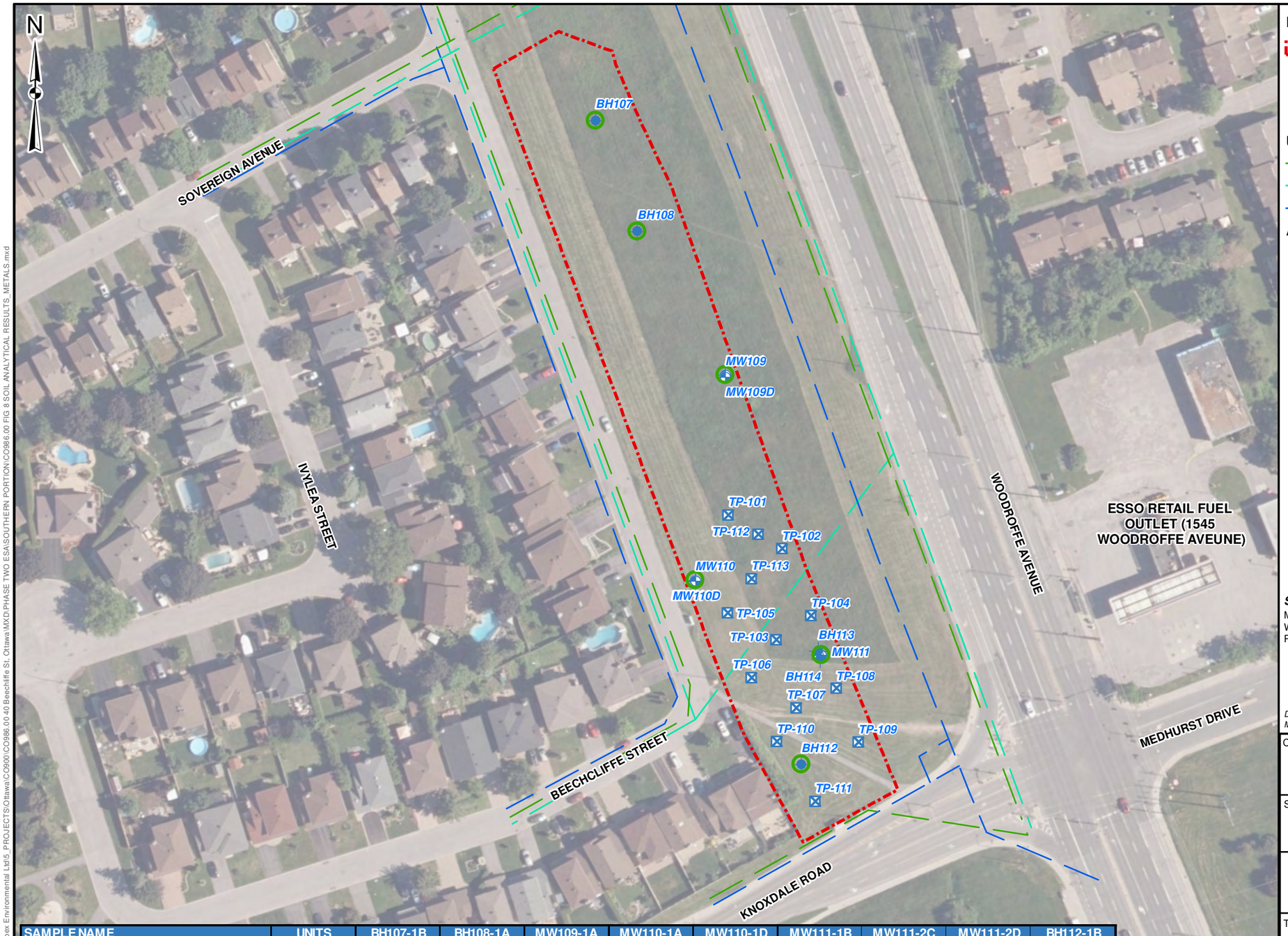
SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
INTERPRETED GROUNDWATER FLOW DIRECTION (AS OF DECEMBER 11, 2024)

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	KB
REVISION: 00	DATE: JANUARY 2025	FIGURE: 7

C:\Users\jsenroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00 FIG 7 GW FLOW DIRECTION.mxd



SAMPLE NAME	UNITS	BH107-1B	BH108-1A	MW109-1A	MW110-1A	MW110-1D DUPLICATE OF MW110-1A	MW111-1B	MW111-2C	MW111-2D DUPLICATE OF MW111-2C	BH112-1B
Sample Depth	m bgs	0.6-1.5	0.0-1.1	0.0-1.4	0.0-1.4	0.0-1.4	0.2-1.5	2.3-3.1	2.3-3.1	0.3-1.5
Sampling Date	dd-mmm-yy	21-Nov-24	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24
Certificate of Analysis No.	-	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- BOREHOLE
- MONITORING WELL
- TEST PIT

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY-USE WITH COARSE TEXTURED SOIL.

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

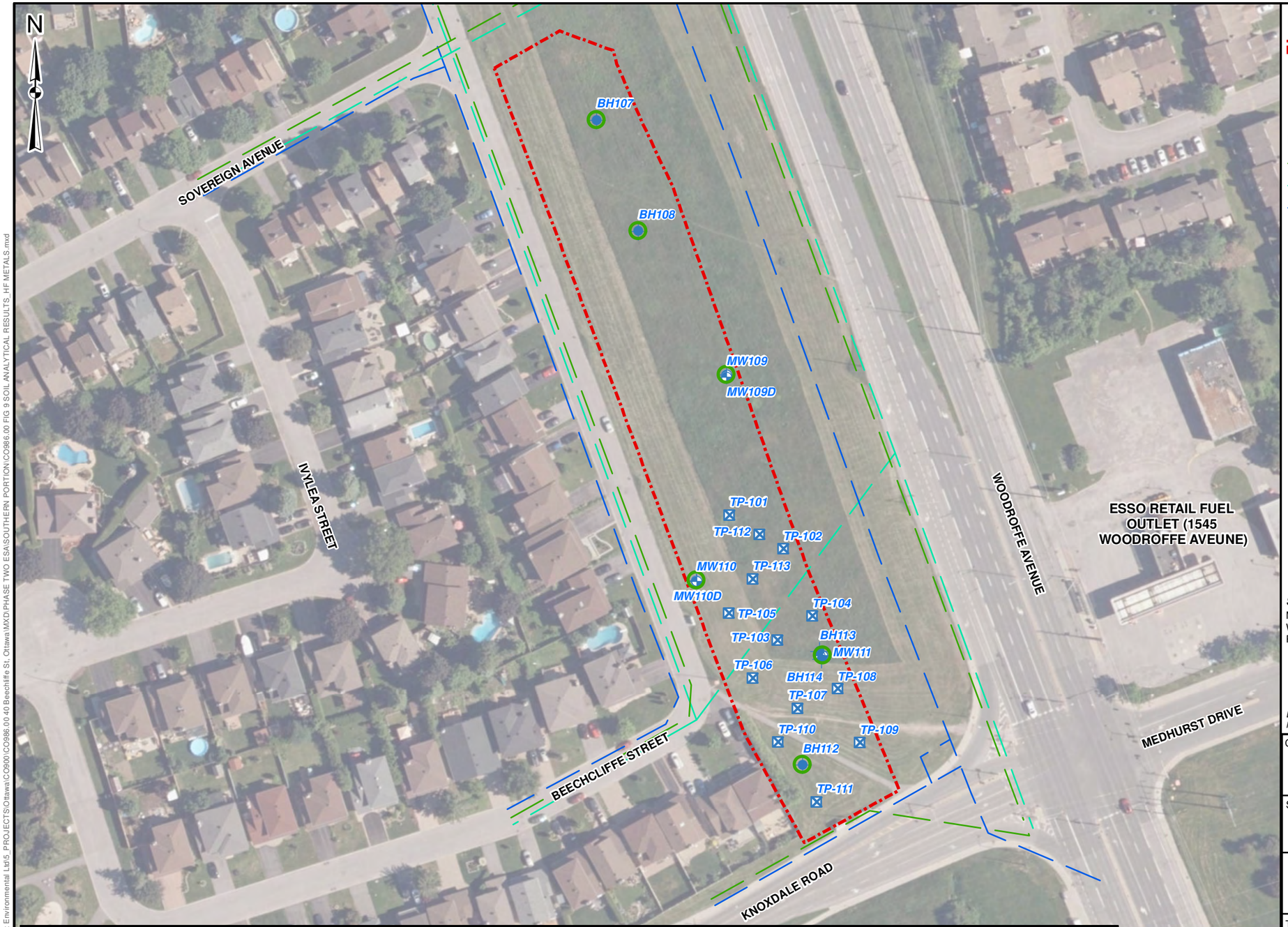
SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
SOIL SAMPLE DISTRIBUTION - METALS

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SW	CO986.00	KB
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: 8

C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO900\CO986.00 FIG 8 SOIL ANALYTICAL RESULTS_METALS.mxd



SAMPLE NAME	UNITS	BH107-1B	BH108-1A	MW109-1A	MW110-1A	MW110-1D DUPLICATE OF MW110-1A	MW111-1B	MW111-2C	MW111-2D DUPLICATE OF MW111-2C	BH112-1B
Sample Depth	m bgs	0.6-1.5	0.0-1.1	0.0-1.4	0.0-1.4	0.0-1.4	0.2-1.5	2.3-3.1	2.3-3.1	0.3-1.5
Sampling Date	dd-mmm-yy	21-Nov-24	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24
Certificate of Analysis No.	-	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- BOREHOLE
- MONITORING WELL
- TEST PIT

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY-USE WITH COARSE TEXTURED SOIL.

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

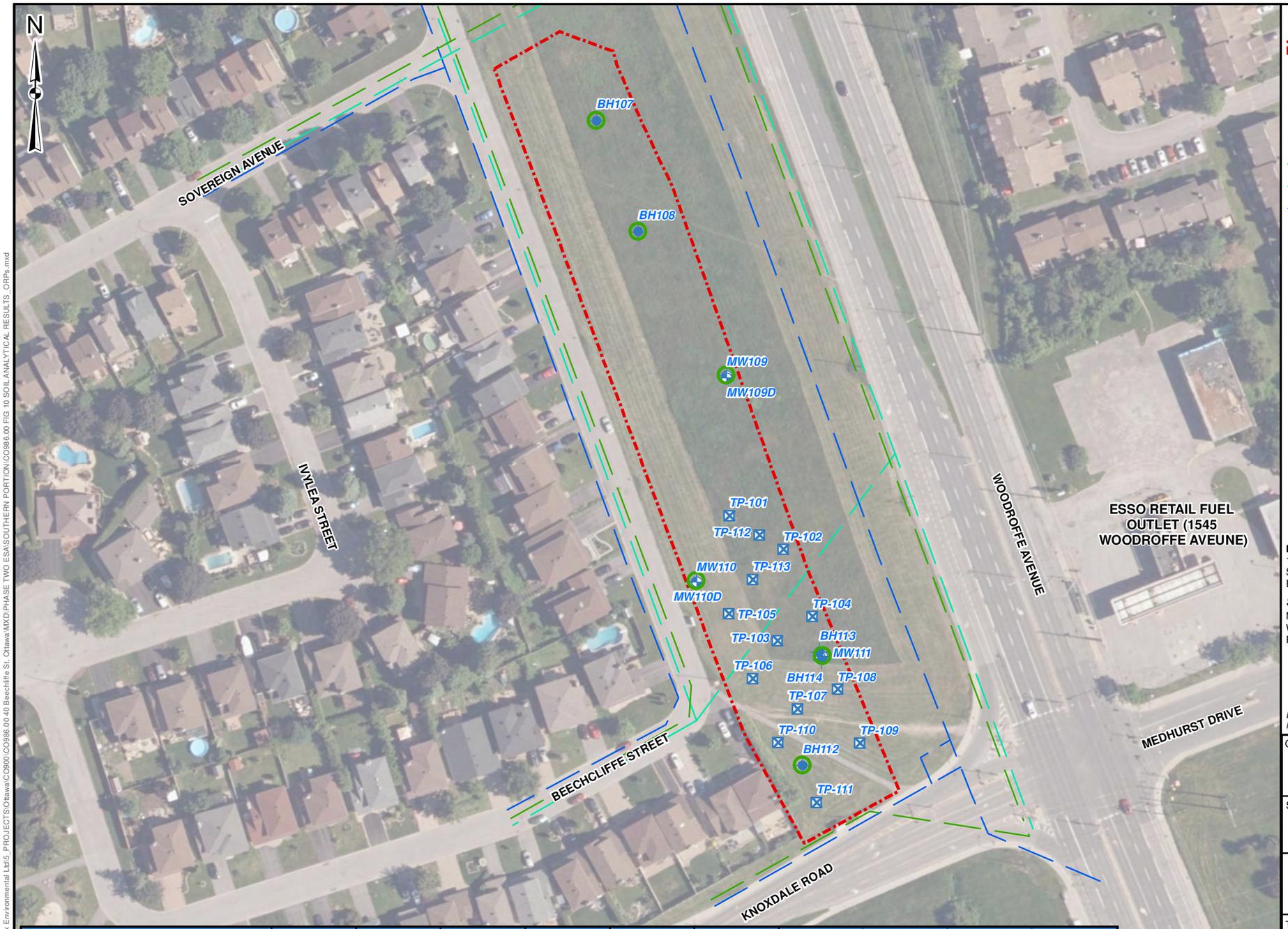
SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
SOIL SAMPLE DISTRIBUTION - HYDRIDE FORMING METALS

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SW	CO986.00	KB
REVISION:	**DATE:**	**FIGURE:**
00	FEBRUARY 2025	**9**

C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00 FIG 9 SOIL ANALYTICAL RESULTS_HF METALS.mxd



SAMPLE NAME	UNITS	BH107-1B	BH108-1A	MW109-1A	MW110-1A	MW110-1D DUPLICATE OF MW110-1A	MW111-1B	MW111-2C	MW111-2D DUPLICATE OF MW111-2C	BH112-1B
Sample Depth	m bgs	0.6-1.5	0.0-1.1	0.0-1.4	0.0-1.4	0.0-1.4	0.2-1.5	2.3-3.1	2.3-3.1	0.3-1.5
Sampling Date	dd-mmm-yy	21-Nov-24	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24
Certificate of Analysis No.	-	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- BOREHOLE
- MONITORING WELL
- TEST PIT

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 3 SCS

NOTES

1. OTHER REGULATED PARAMTERS INCLUDE: BORON (HOT WATER SOLUBLE), CYANIDE, HEXAVALENT CHROMIUM, MERCURY, pH, ELECTRICAL CONDUCTIVITY AND SODIUM ADSORPTION RATIO

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY-USE WITH COARSE TEXTURED SOIL.

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
SOIL SAMPLE DISTRIBUTION - OTHER REGULATED PARAMETERS (ORPS)

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SW	CO986.00	KB
REVISION:	**DATE:**	**FIGURE:**
00	FEBRUARY 2025	**10**

C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO900\CO986.00 40 Beechcliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00 FIG 10 SOIL ANALYTICAL RESULTS_ORPs.mxd

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- BOREHOLE
- MONITORING WELL
- TEST PIT

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 3 SCS
- GREATER THAN TABLE 3 SCS

STANDARD INFORMATION

SAMPLE	
DEPTH	
DATE	
PARAMETER	RESULT
Acenaphthylene	
Anthracene	
Benz[a]anthracene	
Benzo[a]pyrene	
Benzo[b]fluoranthene	
Benzo[k]fluoranthene	
Dibenz[a h]anthracene	
Fluoranthene	
Indeno[1 2 3-cd]pyrene	
Phenanthrene	

MECP TABLE 3 SCS
0.15
0.67
0.5
0.3
0.78
0.78
0.1
0.69
0.38
6.2

VALUE GREATER THAN SCS
VALUE LESS THAN OR EQUAL TO SCS

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY-USE WITH COARSE TEXTURED SOIL.

0 20 40 60 Metres
1.97 in

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

SAMPLE NAME	UNITS	BH107-1B	BH108-1A	MW109-1A	MW110-1A	MW110-1D DUPLICATE OF MW110-1A	MW111-1B	MW111-2C	MW111D-5	BH112-1B	BH113-1	BH114-1	TP103-2	TP103-4	TP104-2	TP106-3	TP107-2	TP107-12 DUPLICATE OF TP107-2	TP107-4	TP108-2	TP109-1	TP110-2	TP111-3
Sample Depth	m bgs	0.6-1.5	0.0-1.1	0.0-1.4	0.0-1.4	0.0-1.4	0.2-1.5	2.3-3.1	0.8-1.5	0.3-1.5	0.8-1.5	0.8-1.5	0.5-1.0	1.5-1.6	0.5-1.8	1.1-1.5	0.5-1.1	0.5-1.1	1.6-1.8	0.8-1.4	0.0-0.5	0.6-1.1	1.1-1.4
Sampling Date	dd-mmm-yy	21-Nov-24	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	06-Dec-24	22-Nov-24	06-Dec-24	06-Dec-24	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25
Certificate of Analysis No.	-	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2450112	2448154	2450112	2450112	2503397	2503397	2503397	2503397	2503397	2503397	2503397	2503397	2503399	2503397	2503399
POLYCYCLIC AROMATIC HYDROCARBONS																							
Acenaphthylene	ug/g	0.03	0.03	<0.02	<0.02	<0.02	0.10	<0.02	0.14	0.09	**0.18**	0.08	<0.02	<0.02	<0.02	<0.02	0.15	**0.48**	<0.02	0.15	**0.32**	0.07	<0.02
Anthracene	ug/g	<0.02	0.04	0.03	<0.02	<0.02	0.11	<0.02	0.18	0.09	0.18	0.08	0.03	<0.02	<0.02	<0.02	0.24	**1.95**	<0.02	0.18	0.33	0.16	0.04
Benz[a]anthracene	ug/g	<0.02	0.06	0.05	<0.02	0.02	0.27	<0.02	0.36	0.20	0.32	0.14	0.03	0.03	<0.02	<0.02	**0.52**	**1.66**	<0.02	0.27	**0.81**	0.20	0.23
Benzo[a]pyrene	ug/g	0.03	0.10	0.07	0.03	0.04	**0.36**	<0.02	**0.39**	0.27	**0.44**	0.15	0.03	0.03	<0.02	<0.02	**0.47**	**1.26**	<0.02	0.29	**0.89**	0.18	0.20
Benzo[b]fluoranthene	ug/g	0.02	0.08	0.05	0.02	0.03	0.26	<0.02	0.44	0.19	0.52	0.19	0.04	0.03	<0.02	<0.02	0.47	**1.37**	<0.02	0.31	**0.84**	0.19	0.20
Benzo[k]fluoranthene	ug/g	<0.02	0.05	0.03	<0.02	0.02	0.20	<0.02	0.31	0.14	0.31	0.14	0.02	0.02	<0.02	<0.02	0.31	**0.88**	<0.02	0.20	0.49	0.11	0.12
Dibenz[a h]anthracene	ug/g	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	0.08	0.04	0.09	0.03	<0.02	<0.02	<0.02	<0.02	0.08	**0.21**	<0.02	0.05	**0.11**	0.03	0.02
Fluoranthene	ug/g	0.06	0.15	0.16	0.05	0.08	**0.80**	<0.02	**0.89**	0.62	**0.70**	0.35	0.10	0.08	0.06	0.04	**1.40**	**7.09**	0.04	**0.72**	**1.56**	0.64	0.31
Indeno[1 2 3-cd]pyrene	ug/g	<0.02	0.06	0.04	<0.02	0.02	0.20	<0.02	0.31	0.15	0.34	0.11	<0.02	<0.02	<0.02	<0.02	0.29	**0.83**	<0.02	0.18	**0.40**	0.11	0.09
Phenanthrene	ug/g	0.05	0.09	0.13	<0.02	0.03	0.38	<0.02	0.41	0.29	0.31	0.11	0.07	0.04	0.03	<0.02	0.52	**7.44**	<0.02	0.27	0.79	0.54	0.08

CLIENT: Ottawa

SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
SOIL CONTAMINANT DELINEATION - PAHS

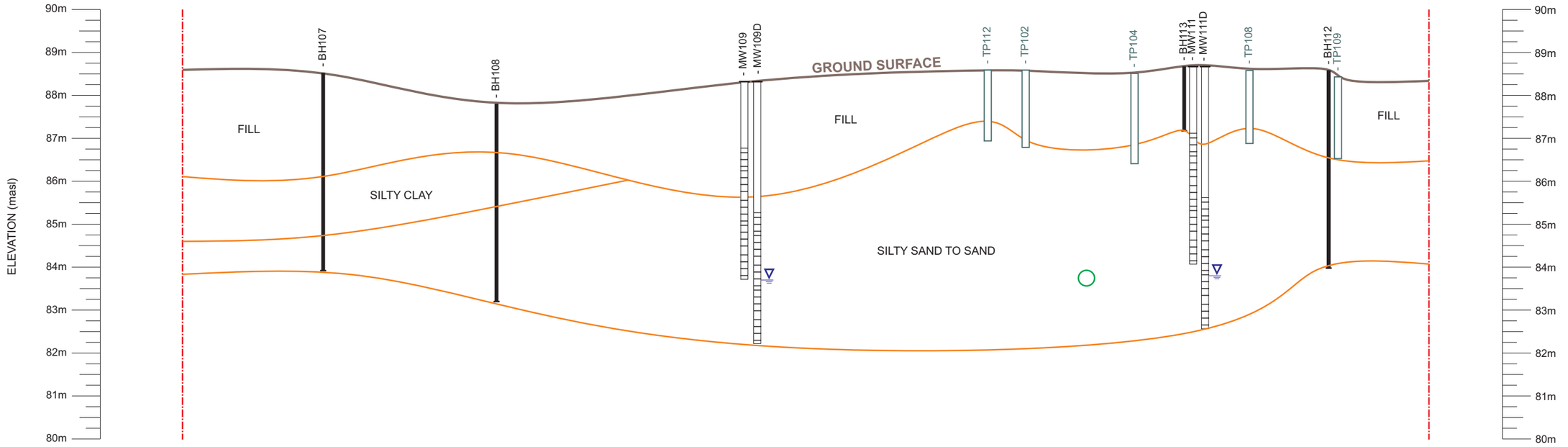
DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SW	CO986.00	KB
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: **11A**

C:\Users\jserrurier\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986_00_FIG 11A SOIL ANALYTICAL RESULTS_PAHs.mxd

LOOKING EAST

A

A′



NOTES:
1. SOIL STRATIGRAPHY BETWEEN LOCATIONS IS INTERPRETED.
2. UTILITY LOCATIONS AND DEPTHS ARE APPROXIMATE AND ARE FOR ILLUSTRATION PURPOSES.

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- STRATIGRAPHIC UNIT
- GROUNDWATER LEVEL (AS OF DECEMBER 11, 2024)
- SEWER LINE
- MONITORING WELL
  - SCREENED LEVEL
- BOREHOLE
- TEST PIT

HORIZONTAL SCALE
0 15m 30m

CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

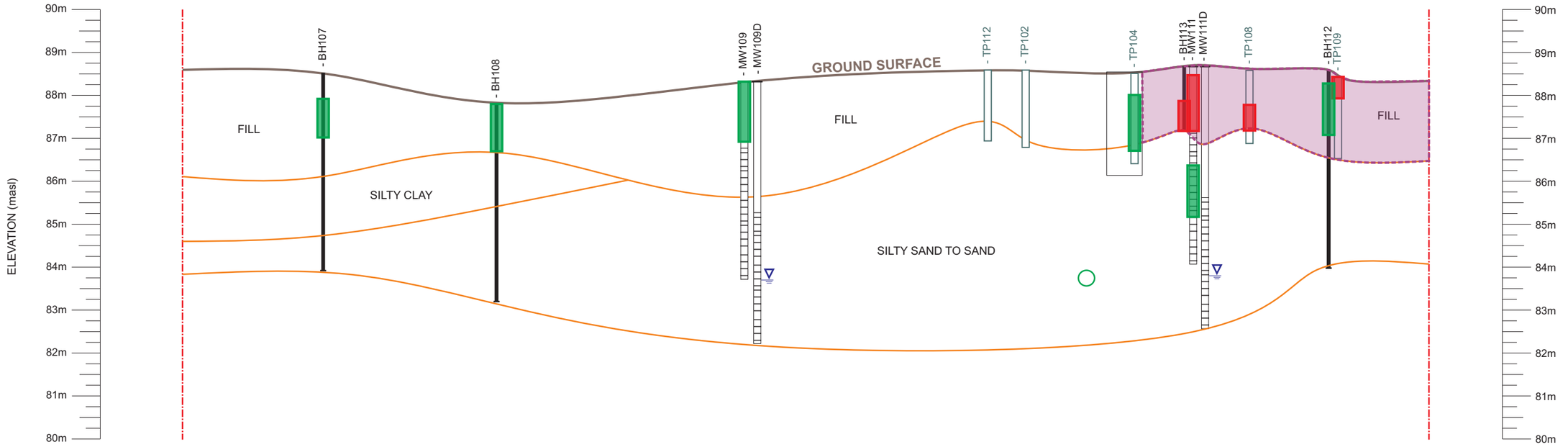
TITLE: **CROSS SECTION A-A'**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: **6A**

LOOKING EAST

A

A'



NOTES:
1. SOIL STRATIGRAPHY BETWEEN LOCATIONS IS INTERPRETED.
2. UTILITY LOCATIONS AND DEPTHS ARE APPROXIMATE AND ARE FOR ILLUSTRATION PURPOSES.

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- STRATIGRAPHIC UNIT
- GROUNDWATER LEVEL (AS OF DECEMBER 11, 2024)
- SEWER LINE
- ESTIMATED EXTENT OF SOIL IMPACT
- MONITORING WELL
  - SCREENED LEVEL
- BOREHOLE
- TEST PIT

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 3 SCS
- GREATER THAN TABLE 3 SCS

SCS (Site Conditions Standards) refer to Standards from Table 3 of April 15, 2011 Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act; Residential / Parkland / Institutional, land use, coarse textured soil

HORIZONTAL SCALE
0 15m 30m

CLIENT: Ottawa

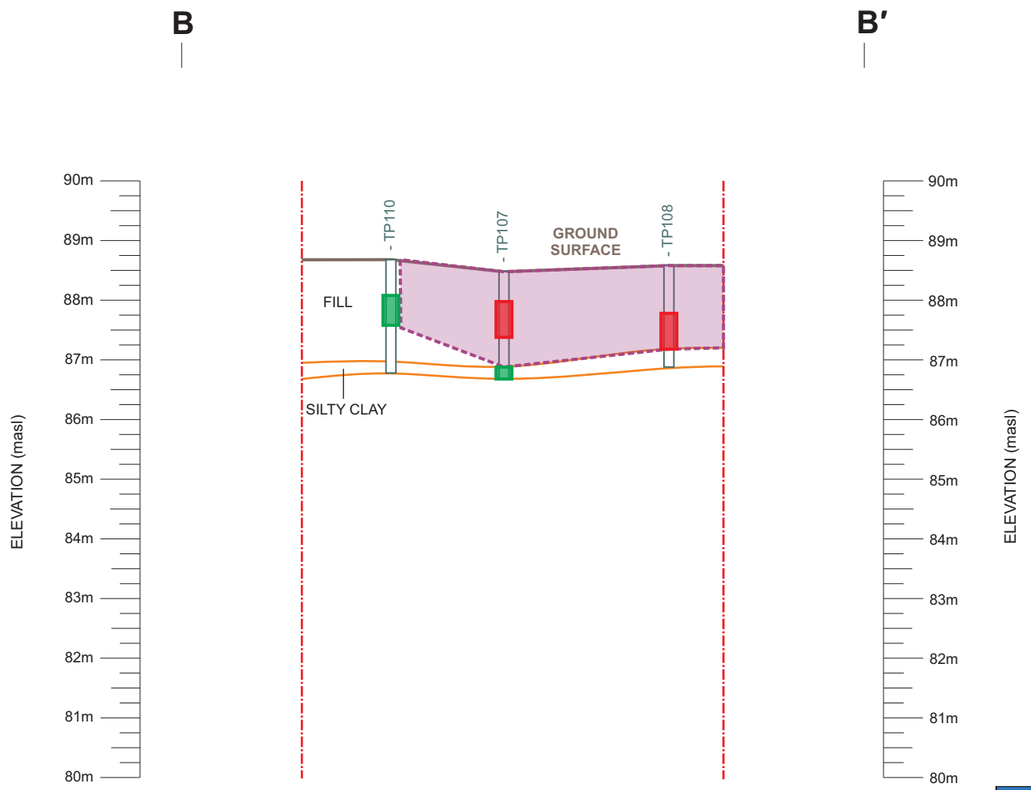
SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **SOIL CONTAMINATION DELINEATION - PAHs (CROSS SECTION A-A')**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: **11B**

LOOKING NORTH



SAMPLE NAME	UNITS	STANDARDS Table 3 R/P/I coarse	TP107-2	TP107-12 DUPLICATE OF TP107-2	TP107-4	TP108-2	TP110-2
Sample Depth	m bgs	-	0.5-1.1	0.5-1.1	1.6-1.8	0.8-1.4	0.6-1.1
Sampling Date	dd-mmm-yy	-	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25
Certificate of Analysis No.	-	-	2503397	2503397	2503397	2503397	2503397
POLYCYCLIC AROMATIC HYDROCARBONS							
Acenaphthylene	ug/g	0.15	0.15	**0.48**	<0.02	0.15	0.07
Anthracene	ug/g	0.67	0.24	**1.95**	<0.02	0.18	0.16
Benz[a]anthracene	ug/g	0.50	**0.52**	**1.66**	<0.02	0.27	0.20
Benzo[a]pyrene	ug/g	0.30	**0.47**	**1.26**	<0.02	0.29	0.18
Benzo[b]fluoranthene	ug/g	0.78	0.47	**1.37**	<0.02	0.31	0.19
Benzo[k]fluoranthene	ug/g	0.78	0.31	**0.88**	<0.02	0.20	0.11
Dibenz[a h]anthracene	ug/g	0.10	0.08	**0.21**	<0.02	0.05	0.03
Fluoranthene	ug/g	0.69	**1.40**	**7.09**	0.04	**0.72**	0.64
Indeno[1 2 3-cd]pyrene	ug/g	0.38	0.29	**0.83**	<0.02	0.18	0.11
Phenanthrene	ug/g	6.2	0.52	**7.44**	<0.02	0.27	0.54

NOTES:
1. SOIL STRATIGRAPHY BETWEEN LOCATIONS IS INTERPRETED.

LEGEND

PHASE TWO PROPERTY BOUNDARY

STRATIGRAPHIC UNIT

ESTIMATED EXTENT OF SOIL IMPACT

- TEST PIT

ANALYSIS INFORMATION

LESS THAN OR EQUAL TO TABLE 3 SCS

GREATER THAN TABLE 3 SCS

HORIZONTAL SCALE

0 10m 20m

CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **SOIL CONTAMINATION DELINEATION - PAHS (CROSS SECTION B-B')**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: **11C**

SAMPLE NAME	UNITS	BH107-1B	BH107-3A	BH108-1A	MW109-2A	MW109-3A	MW110-1A	MW111-1B	MW111-2C	MW111-2D DUPLICATE OF MW111-2C	BH112-1B
Sample Depth	m bgs	0.6-1.5	3.1-4.0	0.0-1.1	1.5-1.8	3.1-4.3	0.0-1.4	0.2-1.5	2.3-3.1	2.3-3.1	0.3-1.5
Sampling Date	dd-mmm-yy	21-Nov-24	21-Nov-24	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24
Certificate of Analysis No.	-	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- BOREHOLE
- MONITORING WELL
- TEST PIT

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY-USE WITH COARSE TEXTURED SOIL.

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
SOIL SAMPLE DISTRIBUTION - BTEX

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SW	CO986.00	KB
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: **12**

C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00 FIG 12 SOIL ANALYTICAL RESULTS_BTEX.mxd

SAMPLE NAME	UNITS	BH107-1B	BH107-3A	BH108-1A	MW109-2A	MW109-3A	MW110-1A	MW111-1B	MW111-2C	MW111-2D DUPLICATE OF MW111-2C	BH112-1B
Sample Depth	m bgs	0.6-1.5	3.1-4.0	0.0-1.1	1.5-1.8	3.1-4.3	0.0-1.4	0.2-1.5	2.3-3.1	2.3-3.1	0.3-1.5
Sampling Date	dd-mmm-yy	21-Nov-24	21-Nov-24	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24
Certificate of Analysis No.	-	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- BOREHOLE
- MONITORING WELL
- TEST PIT

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY-USE WITH COARSE TEXTURED SOIL.

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

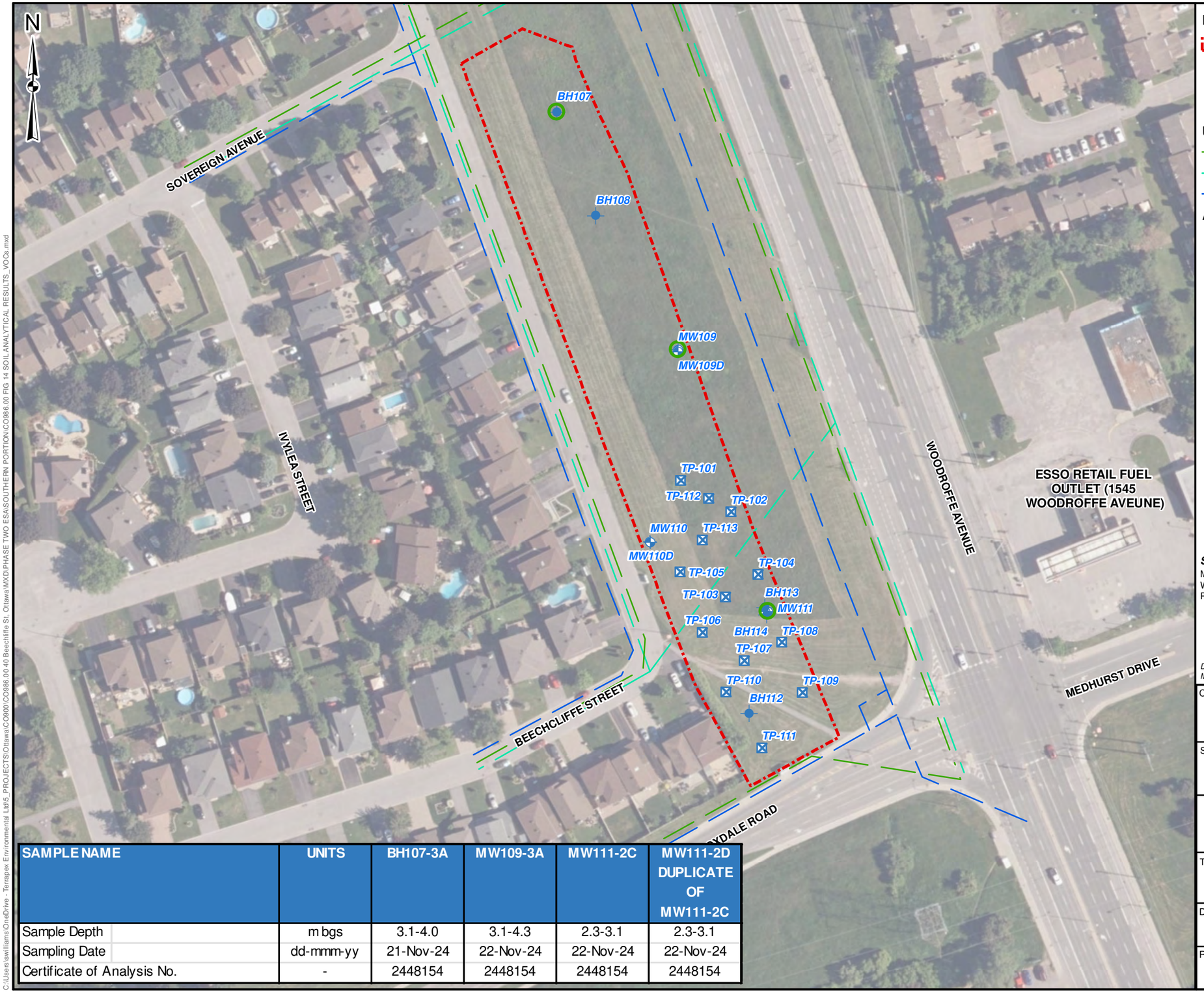
SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
SOIL SAMPLE DISTRIBUTION - PHCS

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SW	CO986.00	KB
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: 13

C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00 FIG 13 SOIL ANALYTICAL RESULTS_PHCs.mxd



SAMPLE NAME	UNITS	BH107-3A	MW109-3A	MW111-2C	MW111-2D DUPLICATE OF MW111-2C
Sample Depth	m bgs	3.1-4.0	3.1-4.3	2.3-3.1	2.3-3.1
Sampling Date	dd-mmm-yy	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24
Certificate of Analysis No.	-	2448154	2448154	2448154	2448154

LEGEND

- PHASE TWO PROPERTY BOUNDARY
- BOREHOLE
- MONITORING WELL
- TEST PIT

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR RESIDENTIAL/PARKLAND/INSTITUTIONAL PROPERTY-USE WITH COARSE TEXTURED SOIL.

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
SOIL SAMPLE DISTRIBUTION - VOCS

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SW	CO986.00	KB
REVISION: 00	DATE: FEBRUARY 2025	FIGURE: 14

C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00 FIG 14 SOIL ANALYTICAL RESULTS_VOCs.mxd

SAMPLE NAME	UNITS	MW109D	MW111D	MW1111 DUPLICATE OF MW111D
Screen Interval	m bgs	3.1-6.1	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	12-Dec-24	12-Dec-24	12-Dec-24
Certificate of Analysis No.	-	2450533	2450533	2450533

LEGEND

PHASE TWO PROPERTY BOUNDARY

MONITORING WELL

ANALYSIS INFORMATION

LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR ALL TYPES OF PROPERTY USE WITH COARSE TEXTURED SOIL.

0 20 40 60

Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **GROUNDWATER SAMPLE DISTRIBUTION - METALS**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION:	**DATE:**	**FIGURE:**
00	JANUARY 2025	**15**

C:\Users\jsenroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO960\CO986.00 40 Beechcliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00_FIG 15 GW ANALYTICAL RESULTS_METALS.mxd

SAMPLE NAME	UNITS	MW109D	MW111D	MW1111 DUPLICATE OF MW111D
Screen Interval	m bgs	3.1-6.1	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	12-Dec-24	12-Dec-24	12-Dec-24
Certificate of Analysis No.	-	2450533	2450533	2450533

LEGEND

PHASE TWO PROPERTY BOUNDARY

MONITORING WELL

ANALYSIS INFORMATION

LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR ALL TYPES OF PROPERTY USE WITH COARSE TEXTURED SOIL.

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **GROUNDWATER SAMPLE DISTRIBUTION - HYDRIDE FORMING METALS**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION:	**DATE:**	**FIGURE:**
00	JANUARY 2025	**16**

C:\Users\jsenroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO960\CO986.00 40 Beechcliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00_FIG 16 GW ANALYTICAL RESULTS_HFMETALS.mxd

SAMPLE NAME	UNITS	MW111D	MW1111 DUPLICATE OF MW111D
Screen Interval	m bgs	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	12-Dec-24	12-Dec-24
Certificate of Analysis No.	-	2450533	2450533

LEGEND

PHASE TWO PROPERTY BOUNDARY

MONITORING WELL

ANALYSIS INFORMATION

LESS THAN OR EQUAL TO TABLE 3 SCS

NOTES

1. OTHER REGULATED PARAMTERS INCLUDE: CYANIDE, HEXAVALENT CHROMIUM, MERCURY, pH, CHLORIDE AND SODIUM.

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR ALL TYPES OF PROPERTY USE WITH COARSE TEXTURED SOIL.

0 20 40 60

Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE: **GROUNDWATER SAMPLE DISTRIBUTION - OTHER REGULATED PARAMETERS**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SW	CO986.00	GS
REVISION:	**DATE:**	**FIGURE:**
00	FEBRUARY 2025	**17**

C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO900\CO986.00\40 Beechcliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00 FIG 17 GW ANALYTICAL RESULTS_ORP.mxd

SAMPLE NAME	UNITS	MW111D	MW1111 DUPLICATE OF MW111D
Screen Interval	m bgs	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	12-Dec-24	12-Dec-24
Certificate of Analysis No.	-	2450533	2450533

LEGEND

PHASE TWO PROPERTY BOUNDARY

MONITORING WELL

ANALYSIS INFORMATION

LESS THAN OR EQUAL TO TALBE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR ALL TYPES OF PROPERTY USE WITH COARSE TEXTURED SOIL.

0 20 40 60

Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **GROUNDWATER SAMPLE DISTRIBUTION - PAHS**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION:	**DATE:**	**FIGURE:**
00	JANUARY 2025	**18**

C:\Users\jserroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO960\CO986.00 40 Beechcliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00_FIG 18 GW ANALYTICAL RESULTS_PAHs.mxd

SAMPLE NAME	UNITS	MW109D	MW110D	MW111D	MW1111 DUPLICATE OF MW111D
Screen Interval	m bgs	3.1-6.1	3.1-6.1	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	12-Dec-24	12-Dec-24	12-Dec-24	12-Dec-24
Certificate of Analysis No.	-	2450533	2450533	2450533	2450533

LEGEND

PHASE TWO PROPERTY BOUNDARY

MONITORING WELL

ANALYSIS INFORMATION

LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR ALL TYPES OF PROPERTY USE WITH COARSE TEXTURED SOIL.

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **GROUNDWATER SAMPLE DISTRIBUTION - BTEX**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION:	**DATE:**	**FIGURE:**
00	JANUARY 2025	**19**

C:\Users\jserroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO960\CO986.00 40 Beechliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00_FIG 19 GW ANALYTICAL RESULTS_BTEX.mxd

SAMPLE NAME	UNITS	MW109D	MW110D	MW111D	MW1111 DUPLICATE OF MW111D
Screen Interval	m bgs	3.1-6.1	3.1-6.1	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	12-Dec-24	12-Dec-24	12-Dec-24	12-Dec-24
Certificate of Analysis No.	-	2450533	2450533	2450533	2450533

LEGEND

PHASE TWO PROPERTY BOUNDARY

MONITORING WELL

ANALYSIS INFORMATION

LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR ALL TYPES OF PROPERTY USE WITH COARSE TEXTURED SOIL.

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **GROUNDWATER SAMPLE DISTRIBUTION - PHCS**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION: 00	DATE: JANUARY 2025	FIGURE: **20**

C:\Users\jserroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO960\CO986.00 40 Beechcliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00_FIG 20 GW ANALYTICAL RESULTS_PHCs.mxd

SAMPLE NAME	UNITS	MW109D	MW110D	MW111D	MW1111 DUPLICATE OF MW111D
Screen Interval	m bgs	3.1-6.1	3.1-6.1	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	12-Dec-24	12-Dec-24	12-Dec-24	12-Dec-24
Certificate of Analysis No.	-	2450533	2450533	2450533	2450533

LEGEND

PHASE TWO PROPERTY BOUNDARY

MONITORING WELL

ANALYSIS INFORMATION

LESS THAN OR EQUAL TO TABLE 3 SCS

STANDARD INFORMATION

MECP TABLE 3: FULL DEPTH GENERIC SCS IN A NON-POTABLE GROUND WATER CONDITION FOR ALL TYPES OF PROPERTY USE WITH COARSE TEXTURED SOIL.

0 20 40 60

Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION: 40 BEECHCLIFFE STREET OTTAWA, ONTARIO

TERRAPEX

TITLE: **GROUNDWATER SAMPLE DISTRIBUTION - VOCS**

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	GS
REVISION:	**DATE:**	**FIGURE:**
00	JANUARY 2025	**21**

C:\Users\jserroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO960\CO986.00 40 Beechcliffe St, Ottawa\MXD\PHASE TWO ESA\SOUTHERN PORTION\CO986.00_FIG 21 GW ANALYTICAL RESULTS_VOCs.mxd

TABLES

TABLE 1: TABLE OF CURRENT AND PAST USES OF THE PHASE ONE PROPERTY
(Refer to clause 16(2)(b), Schedule D, O. Reg. 153/04)

Year	Name of Owner	Description of Property Use	Property Use[1]	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
Pre 1843	Joseph Sauter	Unknown	Agricultural or other use	First registration in Chain of Title
1843 – 1887	Christopher Switzer	Unknown	Agricultural or other use	No available information regarding the use of the property at this timeframe
1887 – 1902	Obadiah Switzer	Unknown	Agricultural or other use	No available information regarding the use of the property at this timeframe
1902 - 1943	Ivan Switzer	Unknown	Agricultural or other use	No available information regarding the use of the property at this timeframe
1943 - 1955	Thomas and Katherine brooks	Unknown	Agricultural or other use	No available information regarding the use of the property at this timeframe
1955 - 1958	Joseph, Abraham, and Harry Addleman	Unknown	Agricultural or other use	No available information regarding the use of the property at this timeframe
1958 - 1965	McArthur Realties (Ottawa) Limited	Unknown	Agricultural or other use	No available information regarding the use of the property at this timeframe
1965 - 1975	Woodvale Investments Limited	Appears to be used for Agricultural purposes	Agricultural or other use	Plan 506462 registered in 1966 for Woodvale Investments Limited. Site is agricultural based on the 1965 aerial photograph. Disturbed soil is visible on the southern portion of the Site.
1975 – 1981	Sheahan Investments Ltd.	Appears to be disturbed soil	Agricultural or other use	Disturbed soil is visible on the 1965 aerial photographs
1981 - 1983	Theodore Sherman	Vacant property	Agricultural or other use	Property is vacant
1983 - 1984	Thomas C Assaly	Vacant property	Agricultural or other use	Property is vacant
1984 – 1986	Trendsetter Developments	Vacant Property	Agricultural or other use	Plan 4M468 and 4M487 registered in 1984 AND 1985 by Trendsetter Developments
1986 – Present	RMOC (i.e., City of Ottawa)	Vacant property	Agricultural or other use	Expropriated to the Regional Municipality of Ottawa Carleton in 1986. Pictures of a construction related to the sanitary sewer are visible on the southern portion of the Site.

Notes:
1 - for each owner, specify one of the following types of property use (as defined in O. Reg. 153/04) that applies:
Agriculture or other use | Commercial use | Community use | Industrial use | Institutional use | Parkland use | Residential use
2 - when submitting a record of site condition for filing, a copy of this table must be attached

TABLE 2: POTENTIALLY CONTAMINATING ACTIVITIES ON, IN OR UNDER THE PHASE ONE PROPERTY AND STUDY AREA

PCA[1]	Potentially Contaminating Activity[2]	Address/ Location/ Distance/ Direction	Description	Data Source	Likelihood To Affect the Site / Rationale	Uncertainty	Area(s) of Potential Environmental Concern
PCA 1	30 - Importation of Fill Material of Unknown Quality	The Site	Suspected importation of fill to the Site based on evidence of disturbed soil (1965) and the construction of the sanitary sewer (2012).	Aerial Photographs (1965 and 2012) Historical Topographic Maps (1973)	Possible	High. No information regarding the quality of fill is available if any was imported.	APEC 1 (entire Site)
PCA 2	12 - Concrete, Cement and Lime Manufacturing	40 Beechcliffe (northern portion of the property) Adjacent vacant land to the north of the Site.	Use of the Site as part of an access road for a concrete plant located to the west of the Site.	HLUI Aerial Photographs Topographic Maps (1961 and 1968)	Not likely due to distance from concrete plant infrastructure	High. No additional information or operating records for the former concrete plant were available	No
PCA 3	46 – Rail Yards, Tracks and Spurs	North of the Site (112 m north)	Presence of a Beachburg Rail Corridor since at least 1958	Aerial Photographs Site Reconnaissance	Likely due to being adjacent to the Site.	Low	No
PCA 4A	27 - Garages and Maintenance and Repair of Railcars, Marine Vehicles	1545 Woodroffe Avenue (70 m east)	Presence of a former automotive service garage	HLUI Previous Environmental Reports	Possible	Low	APEC 2 (eastern portion of the Site)
PCA 4B	28 - Gasoline and Associated Products Storage in Fixed Tanks		Presence of retail fuel outlet since 1965	Aerial Photographs HLUI Environmental Reports Site Reconnaissance	Possible	Low	APEC 2 (eastern portion of the Site)

PCA[1]	Potentially Contaminating Activity[2]	Address/ Location/ Distance/ Direction	Description	Data Source	Likelihood To Affect the Site / Rationale	Uncertainty	Area(s) of Potential Environmental Concern
PCA 5	Other – Spill	5 Majestic Drive (169 m south)	Record of a spill of an unknown volume of hydraulic oil in 2015	ERIS	Not likely due to description of incident and relative proximity to the Site	Low	No
PCA 6	Other – Waste Generation	72G Brockington Avenue (94 m east)	Records of waste generator of paint and pigments light fuels and waste oils and lubricants between 2005 and 2022.	ERIS	Not likely due to description of records and the distance between the Site and the PCA in an apparent cross-gradient direction.	Low	No
PCA 7	N/A	190 m north of the Site	Record of an "*underground pipeline*" running across Woodroffe Avenue	Topographic map (1973)	Not likely due to the intervening distance between the Site and the PCA in an apparent down-gradient direction.	High. No corroborating records and no information for what the pipeline was used for.	No
PCA 8	Other – Spill	Intersection of Woodroffe Avenue and Knoxdale Road (40 m east)	Record of a spill of an unknown volume of hydraulic oil in 2015	ERIS	Not likely due to description of incident and relative proximity to the Site	Low	No

[1] *As shown on Figure 4.*
[2] *As set out in Table 2 in Schedule D of O. Reg. 153/04.*

TABLE 3: TABLE OF AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

(Refer to clause 16(2)(a), Schedule D, O. Reg. 153/04)

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (On-Site Or Off-Site)	Contaminants Of Potential Concern[3,4]	Media Potentially Impacted (Ground water, Soil, and/or Sediment)
APEC 1	30 - Importation of Fill Material of Unknown Quality	30 - Importation of Fill Material of Unknown Quality	On-Site (PCA 1)	- PHCs - BTEX - Metals and Inorganics - PAHs	Soil
APEC 2	27 - Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Off-Site (PCA 4A)	Off-Site (PCA 4A)	- PHCs - BTEX - VOCs - Metals	- Soil - Groundwater
	28 - Gasoline and Associated Products Storage in Fixed Tanks	Off-Site (PCA 4B)	Off-Site (PCA 4B)	- PHCs - BTEX	- Soil - Groundwater

1 - Areas of potential environmental concern means the area on, in or under a Phase One Property where one or more contaminants are potentially present, as determined through the Phase One environmental site assessment, including through,

(a) identification of past or present uses on, in or under the Phase One Property, and

(b) identification of potentially contaminating activity.

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

3 - When completing this column, identify all contaminants of potential concern using the Method Groups as identified in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011 and as of February 19, 2021, as specified below:

List of Method Groups:

ABNs	*Dioxins/Furans, PCDDs/PCDFs*	*PCBs*	*VOCs*	*Metals*	*B- HWS*	*EC*	*Methyl Mercury*
CPs	*OCs*	*PAHs*	*BTEX*	*As, Sb, Se*	*Cl^-*	*Cr (VI)*	*Low or high pH*
1,4-Dioxane	*PHCs*	*THMs*	*Bromomethane*	*Na*	*CN^-*	*Hg*	*SAR*

4 - Where an identified contaminant of potential concern is not listed in the table that sets out the applicable site conditions standards in the Soil, Ground Water and Sediment Standards for which sampling and analysis is performed and is associated with potentially contaminating activity, the qualified person is referred to Subsection 43(3) of the Regulation.

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

TABLE 4: GROUNDWATER MONITORING DATA
40 BEECHCLIFFE STREET, OTTAWA, ONTARIO

WELL ID	WELL CONSTRUCTION				WELL MONITORING					
	GROUND ELEVATION[1] (m)	T.O.P. ELEVATION[2] (m)	SCREEN LENGTH (m)	BOTTOM OF SCREEN[3] (m)	DATE	CV[4]	DEPTH TO WATER FROM T.O.P. (m)	DEPTH TO WATER FROM GROUND (m)	GROUNDWATER ELEVATION[5] (m)	LNAPL THICKNESS[6] (m)
MW109	88.32		3.05	83.75	23-Nov-24	-	DRY	-	-	-
MW109	88.32		3.05	83.75	02-Dec-24	-	DRY	-	-	-
MW109D	88.32	89.18	3.05	82.22	11-Dec-24	120 ppm	5.48	4.62	83.70	None
MW110	88.48		3.05	83.91	23-Nov-24	-	DRY	-	-	-
MW110	88.48		3.05	83.91	02-Dec-24	-	DRY	-	-	-
MW110D	88.48	89.65	3.05	82.38	11-Dec-24	<5 ppm	5.80	4.63	83.85	None
MW111	88.69		3.05	84.12	23-Nov-24	-	DRY	-	-	-
MW111	88.69		3.05	84.12	02-Dec-24	-	DRY	-	-	-
MW111D	88.69	89.85	3.05	82.59	11-Dec-24	<5 ppm	6.05	4.89	83.80	None

NOTES

[1] Elevation of ground surface at well location, relative to site benchmark
[2] Elevation of highest point of well pipe ("top of pipe"), relative to site benchmark
[3] Elevation of bottom of well screened interval, relative to site benchmark
[4] Combustible vapour concentration in well headspace in parts per million by volume (ppm) or percent of lower explosive limit (%LEL)
[5] Static water level elevation, relatve to site benchmark
[6] Measured thickness of light, non-aqueous phase liquid, if any

TABLE 5: SUMMARY OF SOIL ANALYTICAL RESULTS - METALS, HFMs AND OTHER REGULATED PARAMETERS
40 BEACHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 3 R/P/I coarse	BH107-1B	BH108-1A	MW109-1A	MW109-2A	MW110-1A	MW110-1D DUPLICATE OF MW110-1A	MW111-1B	MW111-2C	MW111-2D DUPLICATE OF MW111-2C	BH112-1B
Vapour Reading	see note	-	<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm	-	<5 ppm	<5 ppm	-	<5 ppm
Sample Depth	m bgs	-	0.6-1.5	0.0-1.1	0.0-1.4	1.5-1.8	0.0-1.4	0.0-1.4	0.2-1.5	2.3-3.1	2.3-3.1	0.3-1.5
Sampling Date	dd-mmm-yy	-	21-Nov-24	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24
Analysis Date (on or before)	dd-mmm-yy	-	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24
Certificate of Analysis No.	-	-	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154
METALS												
Barium	ug/g	390	137	116	124	-	107	126	178	306	280	228
Beryllium	ug/g	4.0	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.5	0.7	0.6	0.6
Boron (Total)	ug/g	120	6.9	5.7	5.4	-	<5.0	<5.0	7.9	5.9	5.9	7.3
Cadmium	ug/g	1.2	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium Total	ug/g	160	24.9	28.1	31.1	-	25.6	26.4	29.8	62.0	57.1	37.7
Cobalt	ug/g	22	7.2	7.4	8.1	-	6.9	6.9	8.7	14.6	13.8	10.8
Copper	ug/g	140	25.3	25.1	25.6	-	18.9	18.9	24.8	32.9	30.7	30.6
Lead	ug/g	120	14.7	12.8	11.4	-	6.3	5.6	19.2	5.2	4.9	17.5
Molybdenum	ug/g	6.9	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel	ug/g	100	16.2	16.6	20.4	-	14.7	15.8	19.3	35.5	32.1	24.2
Silver	ug/g	20	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	ug/g	1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium	ug/g	23	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium	ug/g	86	28.0	33.6	37.3	-	34.5	33.6	36.8	65.4	60.7	47.1
Zinc	ug/g	340	40.2	46.9	53.6	-	38.3	36.5	68.1	78.6	73.2	62.3
HYDRIDE-FORMING METALS												
Antimony	ug/g	7.5	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	ug/g	18	2.6	2.5	2.3	-	2.2	2.3	2.8	2.5	2.7	3.0
Selenium	ug/g	2.4	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
OTHER REGULATED PARAMETERS (ORPs)												
Boron (Hot Water Soluble)[1]	ug/g	1.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5
Cyanide (CN-)	ug/g	0.051	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	-	-	<0.03
Chromium VI	ug/g	8.0	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	-	<0.2
Mercury	ug/g	0.27	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1
pH	pH Units	5-9* or 5-11**	7.50	7.35	7.37	7.38	7.41	7.37	7.38	-	-	7.47
Electrical Conductivity	uS/cm	700	158	169	220	-	195	158	166	-	-	161
Sodium Adsorption Ratio	N/A	5.0	0.08	0.08	0.08	-	0.10	0.09	0.07	-	-	0.09

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).

Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
Residential/Parkland/Institutional Property-Use, Coarse-Textured Soil

-	Parameter not analyzed
m bgs	meters below ground surface
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
*	Surface soil (<1.5m bgs) acceptable pH range
**	Subsurface soil (>1.5m bgs) acceptable pH range
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard
[1]	Hot water soluble boron applies to surface soils (<1.5 m bg).
[2]	Analysis for methyl mercury only applies when mercury standard is exceeded

TABLE 6: SUMMARY OF SOIL ANALYTICAL RESULTS - PAHs
40 BEACHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 3 R/P/I coarse	BH107-1B	BH108-1A	MW109-1A	MW110-1A	MW110-1D DUPLICATE OF MW110-1A	MW111-1B	MW111-2C	MW111D-5	BH112-1B	BH113-1	BH114-1
Vapour Reading	see note	-	<5 ppm	<5 ppm	<5 ppm	<5 ppm	-	<5 ppm	<5 ppm	40 ppm	<5 ppm	30 ppm	45 ppm
Sample Depth	m bgs	-	0.6-1.5	0.0-1.1	0.0-1.4	0.0-1.4	0.0-1.4	0.2-1.5	2.3-3.1	0.8-1.5	0.3-1.5	0.8-1.5	0.8-1.5
Sampling Date	dd-mmm-yy	-	21-Nov-24	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	06-Dec-24	22-Nov-24	06-Dec-24	06-Dec-24
Analysis Date (on or before)	dd-mmm-yy	-	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	6-Dec-24	3-Dec-24	6-Dec-24	6-Dec-24
Certificate of Analysis No.	-	-	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2450112	2448154	2450112	2450112
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)													
Acenaphthene	ug/g	7.9	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	0.03	<0.02	<0.02	<0.02
Acenaphthylene	ug/g	0.15	0.03	0.03	<0.02	<0.02	<0.02	0.10	<0.02	0.14	0.09	0.18	0.08
Anthracene	ug/g	0.67	<0.02	0.04	0.03	<0.02	<0.02	0.11	<0.02	0.18	0.09	0.18	0.08
Benz[a]anthracene	ug/g	0.50	<0.02	0.06	0.05	<0.02	0.02	0.27	<0.02	0.36	0.20	0.32	0.14
Benzo[a]pyrene	ug/g	0.30	0.03	0.10	0.07	0.03	0.04	0.36	<0.02	0.39	0.27	0.44	0.15
Benzo[b]fluoranthene	ug/g	0.78	0.02	0.08	0.05	0.02	0.03	0.26	<0.02	0.44	0.19	0.52	0.19
Benzo[ghi]perylene	ug/g	6.6	0.02	0.08	0.06	<0.02	0.03	0.25	<0.02	0.33	0.18	0.37	0.11
Benzo[k]fluoranthene	ug/g	0.78	<0.02	0.05	0.03	<0.02	0.02	0.20	<0.02	0.31	0.14	0.31	0.14
Chrysene	ug/g	7.0	<0.02	0.07	0.06	<0.02	0.04	0.28	<0.02	0.32	0.23	0.30	0.14
Dibenz[a h]anthracene	ug/g	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	0.08	0.04	0.09	0.03
Fluoranthene	ug/g	0.69	0.06	0.15	0.16	0.05	0.08	0.80	<0.02	0.89	0.62	0.70	0.35
Fluorene	ug/g	62	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	0.03	<0.02	0.03	<0.02
Indeno[1 2 3-cd]pyrene	ug/g	0.38	<0.02	0.06	0.04	<0.02	0.02	0.20	<0.02	0.31	0.15	0.34	0.11
Methlynaphthalene, 1-	ug/g	0.99	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methlynaphthalene, 2-	ug/g	0.99	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methlynaphthalene, 2-(1-)[1]	ug/g	0.99	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Naphthalene	ug/g	0.60	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01
Phenanthrene	ug/g	6.2	0.05	0.09	0.13	<0.02	0.03	0.38	<0.02	0.41	0.29	0.31	0.11
Pyrene	ug/g	78	0.07	0.13	0.14	0.05	0.07	0.63	<0.02	0.75	0.53	0.63	0.30

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).
Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
Residential/Parkland/Institutional Property-Use, Coarse-Textured Soil

-	Parameter not analyzed
m bgs	meters below ground surface
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard
[1]	the sum of 1-methylnaphthalene and 2- methylnaphthalene

TABLE 6: SUMMARY OF SOIL ANALYTICAL RESULTS - PAHs
40 BEACHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 3 R/P/I coarse	TP103-2	TP103-4	TP104-2	TP106-3	TP107-2	TP107-12 DUPLICATE OF TP107-2	TP107-4	TP108-2	TP109-1	TP110-2	TP111-3
Vapour Reading	see note	-	<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm	-	<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm
Sample Depth	m bgs	-	0.5-1.0	1.5-1.6	0.5-1.8	1.1-1.5	0.5-1.1	0.5-1.1	1.6-1.8	0.8-1.4	0.0-0.5	0.6-1.1	1.1-1.4
Sampling Date	dd-mmm-yy	-	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25	15-Jan-25
Analysis Date (on or before)	dd-mmm-yy	-	21-Jan-24	21-Jan-24	21-Jan-24	21-Jan-24	21-Jan-24	21-Jan-24	21-Jan-24	21-Jan-24	27-Jan-25	21-Jan-24	27-Jan-25
Certificate of Analysis No.	-	-	2503397	2503397	2503397	2503397	2503397	2503397	2503397	2503397	2503399	2503397	2503399
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)													
Acenaphthene	ug/g	7.9	<0.02	<0.02	<0.02	<0.02	0.03	0.57	<0.02	<0.02	0.04	0.04	<0.02
Acenaphthylene	ug/g	0.15	<0.02	<0.02	<0.02	<0.02	0.15	0.48	<0.02	0.15	0.32	0.07	<0.02
Anthracene	ug/g	0.67	0.03	<0.02	<0.02	<0.02	0.24	1.95	<0.02	0.18	0.33	0.16	0.04
Benz[a]anthracene	ug/g	0.50	0.03	0.03	<0.02	<0.02	0.52	1.66	<0.02	0.27	0.81	0.20	0.23
Benzo[a]pyrene	ug/g	0.30	0.03	0.03	<0.02	<0.02	0.47	1.26	<0.02	0.29	0.89	0.18	0.20
Benzo[b]fluoranthene	ug/g	0.78	0.04	0.03	<0.02	<0.02	0.47	1.37	<0.02	0.31	0.84	0.19	0.20
Benzo[ghi]perylene	ug/g	6.6	0.03	0.02	<0.02	<0.02	0.29	0.76	<0.02	0.18	0.46	0.11	0.11
Benzo[k]fluoranthene	ug/g	0.78	0.02	0.02	<0.02	<0.02	0.31	0.88	<0.02	0.20	0.49	0.11	0.12
Chrysene	ug/g	7.0	0.03	0.03	<0.02	<0.02	0.48	1.69	<0.02	0.26	0.69	0.21	0.15
Dibenz[a h]anthracene	ug/g	0.10	<0.02	<0.02	<0.02	<0.02	0.08	0.21	<0.02	0.05	0.11	0.03	0.02
Fluoranthene	ug/g	0.69	0.10	0.08	0.06	0.04	1.40	7.09	0.04	0.72	1.56	0.64	0.31
Fluorene	ug/g	62	<0.02	<0.02	<0.02	<0.02	0.03	0.93	<0.02	<0.02	0.06	0.06	<0.02
Indeno[1 2 3-cd]pyrene	ug/g	0.38	<0.02	<0.02	<0.02	<0.02	0.29	0.83	<0.02	0.18	0.40	0.11	0.09
Methlynaphthalene, 1-	ug/g	0.99	<0.02	<0.02	<0.02	<0.02	<0.02	0.17	<0.02	<0.02	<0.02	<0.02	<0.02
Methlynaphthalene, 2-	ug/g	0.99	<0.02	<0.02	<0.02	<0.02	<0.02	0.20	<0.02	<0.02	<0.02	<0.02	<0.02
Methlynaphthalene, 2-(1-)[1]	ug/g	0.99	<0.04	<0.04	<0.04	<0.04	<0.04	0.37	<0.04	<0.04	<0.04	<0.04	<0.04
Naphthalene	ug/g	0.60	<0.01	<0.01	<0.01	<0.01	<0.01	0.22	<0.01	<0.01	0.03	0.04	<0.01
Phenanthrene	ug/g	6.2	0.07	0.04	0.03	<0.02	0.52	7.44	<0.02	0.27	0.79	0.54	0.08
Pyrene	ug/g	78	0.08	0.07	0.05	0.04	1.20	4.97	0.04	0.61	1.30	0.51	0.27

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).
Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
Residential/Parkland/Institutional Property-Use, Coarse-Textured Soil

-	Parameter not analyzed
m bgs	meters below ground surface
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard
[1]	the sum of 1-methylnaphthalene and 2- methylnaphthalene

TABLE 7: SUMMARY OF SOIL ANALYTICAL RESULTS - BTEX AND PHCs
40 BEACHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 3 R/P/I coarse	BH107-1B	BH107-3A Labelled "MW107-3A" in COA	BH108-1A	MW109-2A	MW109-3A	MW110-1A	MW111-1B	MW111-2C	MW111-2D DUPLICATE OF MW111-2C	BH112-1B
Vapour Reading	see note	-	<5 ppm	130 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm	<5 ppm	-	<5 ppm
Sample Depth	m bgs	-	0.6-1.5	3.1-4.0	0.0-1.1	1.5-1.8	3.1-4.3	0.0-1.4	0.2-1.5	2.3-3.1	2.3-3.1	0.3-1.5
Sampling Date	dd-mmm-yy	-	21-Nov-24	21-Nov-24	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24
Analysis Date (on or before)	dd-mmm-yy	-	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24
Certificate of Analysis No.	-	-	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154	2448154
BENZENE, TOLUENE, ETHYLBENZENE, XYLENES (BTEX)												
Benzene	ug/g	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	ug/g	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m-Xylene & p-Xylene	ug/g	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	NA	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	3.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PETROLEUM HYDROCARBONS (PHCs)												
Petroleum Hydrocarbons F1-BTEX	ug/g	55	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Petroleum Hydrocarbons F2	ug/g	98	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Petroleum Hydrocarbons F3	ug/g	300	103	<8	35	29	<8	<8	27	<8	<8	25
Petroleum Hydrocarbons F4	ug/g	2,800	376	<6	85	128	<6	<6	46	<6	<6	30
Petroleum Hydrocarbons F4G	-	2,800	1250	-	-	520	-	-	-	-	-	-

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).
Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
Residential/Parkland/Institutional Property-Use, Coarse-Textured Soil

-	Not analyzed
m bgs	meters below ground surface
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard

TABLE 8: SUMMARY OF SOIL ANALYTICAL RESULTS - VOCs
40 BEACHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 3 R/P/I coarse	BH107-3A Labelled "MW107-3A" in COA	MW109-3A	MW111-2C	MW111-2D DUPLICATE OF MW111-2C
Vapour Reading	see note	-	130 ppm	<5 ppm	<5 ppm	-
Sample Depth	m bgs	-	3.1-4.0	3.1-4.3	2.3-3.1	2.3-3.1
Sampling Date	dd-mmm-yy	-	21-Nov-24	22-Nov-24	22-Nov-24	22-Nov-24
Analysis Date (on or before)	dd-mmm-yy	-	3-Dec-24	3-Dec-24	3-Dec-24	3-Dec-24
Certificate of Analysis No.	-	-	2448154	2448154	2448154	2448154
VOLATILE ORGANIC COMPOUNDS (VOCs)						
Acetone	ug/g	16	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	ug/g	13	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.27	<0.05	<0.05	<0.05	<0.05
Bromomethane	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	ug/g	2.4	<0.05	<0.05	<0.05	<0.05
Chloroform	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene, 1,2-	ug/g	3.4	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene, 1,3-	ug/g	4.8	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene, 1,4-	ug/g	0.083	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	ug/g	16	<0.05	<0.05	<0.05	<0.05
Dichloroethane, 1,1-	ug/g	3.5	<0.05	<0.05	<0.05	<0.05
Dichloroethane, 1,2-	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Dichloroethylene, 1,1-	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Dichloroethylene, 1,2-cis-	ug/g	3.4	<0.05	<0.05	<0.05	<0.05
Dichloroethylene, 1,2-trans-	ug/g	0.084	<0.05	<0.05	<0.05	<0.05
Dichloropropane, 1,2-	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Dichloropropene,1,3-cis	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Dichloropropene,1,3-trans	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Dichloropropene,1,3-	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Ethylene dibromide	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Hexane (n)	ug/g	2.8	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	ug/g	16	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	<0.50	<0.50	<0.50	<0.50
Methyl tert-Butyl Ether (MTBE)	ug/g	0.75	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.10	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.70	<0.05	<0.05	<0.05	<0.05
Tetrachloroethane, 1,1,1,2-	ug/g	0.058	<0.05	<0.05	<0.05	<0.05
Tetrachloroethane, 1,1,2,2-	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	ug/g	0.28	<0.05	<0.05	<0.05	<0.05
Trichloroethane, 1,1,1-	ug/g	0.38	<0.05	<0.05	<0.05	<0.05
Trichloroethane, 1,1,2-	ug/g	0.050	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	ug/g	0.061	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4.0	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.020	<0.02	<0.02	<0.02	<0.02

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).

Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
Residential/Parkland/Institutional Property-Use, Coarse-Textured Soil

-	Not analyzed
m bgs	meters below ground surface
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard

TABLE 9: SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - METALS, HFMs AND OTHER REGULATED PARAMETERS
40 BEECHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 3 coarse	MW109D	MW111D	MW1111 DUPLICATE OF MW111D
Vapour Reading	see note	-	120 ppm	<5 ppm	-
Screen Interval	m bgs	-	3.1-6.1	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	-	12-Dec-24	12-Dec-24	12-Dec-24
Analysis Date (on or before)	dd-mmm-yy	-	24-Dec-24	24-Dec-24	24-Dec-24
Certificate of Analysis No.	-	-	2450533	2450533	2450533
METALS					
Barium	ug/L	29,000	84	69	66
Beryllium	ug/L	67	<0.5	<0.5	<0.5
Boron (Total)	ug/L	45,000	16	70	71
Cadmium	ug/L	2.7	<0.1	<0.1	<0.1
Chromium Total	ug/L	810	<1	<1	<1
Cobalt	ug/L	66	2.5	3.4	3.4
Copper	ug/L	87	1.7	0.7	0.8
Lead	ug/L	25	<0.1	<0.1	<0.1
Molybdenum	ug/L	9,200	1.7	4.9	5.0
Nickel	ug/L	490	3	12	12
Silver	ug/L	1.5	<0.1	<0.1	<0.1
Thallium	ug/L	510	<0.1	<0.1	<0.1
Uranium	ug/L	420	9.0	11.6	11.0
Vanadium	ug/L	250	<0.5	<0.5	<0.5
Zinc	ug/L	1,100	<5	<5	<5
HYDRIDE-FORMING METALS					
Antimony	ug/L	20,000	<0.5	<0.5	<0.5
Arsenic	ug/L	1,900	<1	<1	<1
Selenium	ug/L	63	<1	<1	<1
OTHER REGULATED PARAMETERS (ORPs)					
Cyanide (CN-)	ug/L	66	-	<2	<2
Chromium VI	ug/L	140	-	<10	<10
Mercury	ug/L	0.29	-	<0.1	<0.1
pH	-	NV	-	7.2	7.2
Chloride	ug/L	2,300,000	-	130	130
Sodium	ug/L	2,300,000	56200	62800	62400

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).

Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
All Types of Property-Use, Coarse-Textured Soil

-	Parameter not analyzed
m bgs	meters below ground surface
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
*	Surface soil (<1.5m bgs) acceptable pH range
**	Subsurface soil (>1.5m bgs) acceptable pH range
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard

TABLE 10: SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - PAHs
40 BEECHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 3 coarse	MW111D	MW1111 DUPLICATE OF MW111D
Vapour Reading	see note	-	<5 ppm	-
Screen Interval	m bgs	-	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	-	12-Dec-24	12-Dec-24
Analysis Date (on or before)	dd-mmm-yy	-	24-Dec-24	24-Dec-24
Certificate of Analysis No.	-	-	2450533	2450533
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)				
Acenaphthene	ug/L	600	<0.05	<0.05
Acenaphthylene	ug/L	1.8	<0.05	<0.05
Anthracene	ug/L	2.4	<0.01	<0.01
Benz[a]anthracene	ug/L	4.7	<0.01	<0.01
Benzo[a]pyrene	ug/L	0.81	<0.01	<0.01
Benzo[b]fluoranthene	ug/L	0.75	<0.05	<0.05
Benzo[ghi]perylene	ug/L	0.20	<0.05	<0.05
Benzo[k]fluoranthene	ug/L	0.40	<0.05	<0.05
Chrysene	ug/L	1.0	<0.05	<0.05
Dibenz[a h]anthracene	ug/L	0.52	<0.05	<0.05
Fluoranthene	ug/L	130	<0.01	<0.01
Fluorene	ug/L	400	<0.05	<0.05
Indeno[1 2 3-cd]pyrene	ug/L	0.20	<0.05	<0.05
Methlynaphthalene, 1-	ug/L	1,800	<0.05	<0.05
Methlynaphthalene, 2-	ug/L	1,800	<0.05	<0.05
Methlynaphthalene, 2-(1-)[1]	ug/L	1,800	<0.10	<0.10
Naphthalene	ug/L	1,400	<0.05	<0.05
Phenanthrene	ug/L	580	<0.05	<0.05
Pyrene	ug/L	68	<0.01	<0.01

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).

Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition

All Types of Property-Use, Coarse-Textured Soil

-	Parameter not analyzed
m bgs	meters below ground surface
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard
[1]	the sum of 1-methylnaphthalene and 2- methylnaphthalene

TABLE 11: SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - BTEX AND PHCs
40 BEECHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 3 coarse	MW109D	MW110D	MW111D	MW1111 DUPLICATE OF MW111D
Vapour Reading	see note	-	120 ppm	<5 ppm	<5 ppm	-
Screen Interval	m bgs	-	3.1-6.1	3.1-6.1	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	-	12-Dec-24	12-Dec-24	12-Dec-24	12-Dec-24
Analysis Date (on or before)	dd-mmm-yy	-	24-Dec-24	24-Dec-24	24-Dec-24	24-Dec-24
Certificate of Analysis No.	-	-	2450533	2450533	2450533	2450533
BENZENE, TOLUENE, ETHYLBENZENE, XYLENES (BTEX)						
Benzene	ug/L	44	<0.5	<0.5	<0.5	<0.5
Toluene	ug/L	18,000	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	2,300	<0.5	<0.5	<0.5	<0.5
Xylenes (Total)	ug/L	4,200	<0.5	<0.5	<0.5	<0.5
PETROLEUM HYDROCARBONS (PHCs)						
Petroleum Hydrocarbons F1-BTEX	ug/L	750	<25	<25	<25	<25
Petroleum Hydrocarbons F2	ug/L	150	<100	<100	<100	<100
Petroleum Hydrocarbons F3	ug/L	500	<100	<100	<100	<100
Petroleum Hydrocarbons F4	ug/L	500	<100	<100	<100	<100

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).

Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
All Types of Property-Use, Coarse-Textured Soil

-	Not analyzed
m bgs	meters below ground surface
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard

TABLE 12: SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - VOCs
40 BEECHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 3 coarse	MW109D	MW110D	MW111D	MW1111 DUPLICATE OF MW111D
Vapour Reading	see note	-	120 ppm	<5 ppm	<5 ppm	-
Screen Interval	m bgs	-	3.1-6.1	3.1-6.1	3.4-6.4	3.4-6.4
Sampling Date	dd-mmm-yy	-	12-Dec-24	12-Dec-24	12-Dec-24	12-Dec-24
Analysis Date (on or before)	dd-mmm-yy	-	24-Dec-24	24-Dec-24	24-Dec-24	24-Dec-24
Certificate of Analysis No.	-	-	2450533	2450533	2450533	2450533
VOLATILE ORGANIC COMPOUNDS (VOCs)						
Acetone	ug/L	130,000	<5.0	<5.0	<5.0	<5.0
Bromodichloromethane	ug/L	85,000	<0.5	<0.5	<0.5	<0.5
Bromoform	ug/L	380	<0.5	<0.5	<0.5	<0.5
Bromomethane	ug/L	5.6	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	ug/L	0.79	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	ug/L	630	<0.5	<0.5	<0.5	<0.5
Chloroform	ug/L	2.4	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ug/L	82,000	<0.5	<0.5	<0.5	<0.5
Dichlorobenzene, 1,2-	ug/L	4,600	<0.5	<0.5	<0.5	<0.5
Dichlorobenzene, 1,3-	ug/L	9,600	<0.5	<0.5	<0.5	<0.5
Dichlorobenzene, 1,4-	ug/L	8.0	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	ug/L	4,400	<1.0	<1.0	<1.0	<1.0
Dichloroethane, 1,1-	ug/L	320	<0.5	<0.5	<0.5	<0.5
Dichloroethane, 1,2-	ug/L	1.6	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,1-	ug/L	1.6	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,2-cis-	ug/L	1.6	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,2-trans-	ug/L	1.6	<0.5	<0.5	<0.5	<0.5
Dichloropropane, 1,2-	ug/L	16	<0.5	<0.5	<0.5	<0.5
Dichloropropene,1,3-cis	ug/L	5.2	<0.5	<0.5	<0.5	<0.5
Dichloropropene,1,3-trans	ug/L	5.2	<0.5	<0.5	<0.5	<0.5
Dichloropropene,1,3-	ug/L	5.2	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide	ug/L	0.25	<0.2	<0.2	<0.2	<0.2
Hexane (n)	ug/L	51	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone	ug/L	470,000	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	ug/L	140,000	<5.0	<5.0	<5.0	<5.0
Methyl tert-Butyl Ether (MTBE)	ug/L	190	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	ug/L	610	<5.0	<5.0	<5.0	<5.0
Styrene	ug/L	1,300	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	ug/L	3.3	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/L	3.2	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	ug/L	1.6	<0.5	<0.5	<0.5	<0.5
Trichloroethane, 1,1,1-	ug/L	640	<0.5	<0.5	<0.5	<0.5
Trichloroethane, 1,1,2-	ug/L	4.7	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	ug/L	1.6	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	ug/L	2,500	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	ug/L	0.50	<0.5	<0.5	<0.5	<0.5

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).

Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
All Types of Property-Use, Coarse-Textured Soil

-	Not analyzed
m bgs	meters below ground surface
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard

TABLE 13: SUMMARY OF MAXIMUM CONCENTRATIONS - SOIL
40 BEACHCLIFFE STREET, OTTAWA, ONTARIO

CAS / CONTAMINANT IDENTIFIER	PARAMETER	UNITS	STANDARDS Table 3 R/P/I coarse	MAXIMUM CONCENTRATION	MAXIMUM DETECTION LIMIT	SAMPLE IDENTIFICATION	SAMPLE DEPTH (m bgs)
METALS							
7440393	Barium	ug/g	390	306	-	MW111-2C	2.3-3.1
7440417	Beryllium	ug/g	4.0	0.7	0.5	MW111-2C	2.3-3.1
7440428	Boron (Total)	ug/g	120	7.9	5	MW111-1B	0.2-1.5
7440439	Cadmium	ug/g	1.2	<0.5	0.5	ALL SAMPLES	-
16065831	Chromium Total	ug/g	160	62	-	MW111-2C	2.3-3.1
7440484	Cobalt	ug/g	22	14.6	-	MW111-2C	2.3-3.1
7440508	Copper	ug/g	140	32.9	-	MW111-2C	2.3-3.1
7439921	Lead	ug/g	120	19.2	-	MW111-1B	0.2-1.5
7439987	Molybdenum	ug/g	6.9	<1	1	ALL SAMPLES	-
7440020	Nickel	ug/g	100	35.5	-	MW111-2C	2.3-3.1
7440224	Silver	ug/g	20	<0.3	0.3	ALL SAMPLES	-
7440280	Thallium	ug/g	1.0	<1	1	ALL SAMPLES	-
7440611	Uranium	ug/g	23	1.1	1	MW109-3A	3.1-4.3
7440622	Vanadium	ug/g	86	65.4	-	MW111-2C	2.3-3.1
7440666	Zinc	ug/g	340	78.6	-	MW111-2C	2.3-3.1
HYDRIDE-FORMING METALS							
7440360	Antimony	ug/g	7.5	<1	1	ALL SAMPLES	-
7440382	Arsenic	ug/g	18	3	-	BH112-1B	0.3-1.5
7782492	Selenium	ug/g	2.4	<1	1	ALL SAMPLES	-
OTHER REGULATED PARAMETERS (ORPs)							
7440428-HWS	Boron (Hot Water Soluble)	ug/g	1.5	<0.5	0.5	ALL SAMPLES	-
57125	Cyanide (CN-)	ug/g	0.051	<0.03	0.03	ALL SAMPLES	-
18540299	Chromium VI	ug/g	8.0	<0.2	0.2	ALL SAMPLES	-
7439976	Mercury	ug/g	0.27	<0.1	0.1	ALL SAMPLES	-
pH	pH	pH Units	5-9* or 5-11**	7.5	-	MW107-1B	0.6-1.5
EC	Electrical Conductivity	uS/cm	700	220	-	MW109-1A	0.0-1.4
SAR	Sodium Adsorption Ratio	N/A	5.0	0.1	-	MW110-1A	0.0-1.4
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)							
83329	Acenaphthene	ug/g	7.9	0.57	0.02	TP107-12	0.5-1.1
208968	Acenaphthylene	ug/g	0.15	**0.48**	0.02	TP107-12	0.5-1.1
120127	Anthracene	ug/g	0.67	**1.95**	0.02	TP107-12	0.5-1.1
56553	Benz[a]anthracene	ug/g	0.50	**1.66**	0.02	TP107-12	0.5-1.1
50328	Benzo[a]pyrene	ug/g	0.30	**1.26**	0.02	TP107-12	0.5-1.1
205992	Benzo[b]fluoranthene	ug/g	0.78	**1.37**	0.02	TP107-12	0.5-1.1
191242	Benzo[ghi]perylene	ug/g	6.6	0.76	0.02	TP107-12	0.5-1.1
207089	Benzo[k]fluoranthene	ug/g	0.78	**0.88**	0.02	TP107-12	0.5-1.1
218019	Chrysene	ug/g	7.0	1.69	0.02	TP107-12	0.5-1.1
53703	Dibenz[a h]anthracene	ug/g	0.10	**0.21**	0.02	TP107-12	0.5-1.1
206440	Fluoranthene	ug/g	0.69	**7.09**	0.02	TP107-12	0.5-1.1
86737	Fluorene	ug/g	62	0.93	0.02	TP107-12	0.5-1.1
193395	Indeno[1 2 3-cd]pyrene	ug/g	0.38	**0.83**	0.02	TP107-12	0.5-1.1
90120	Methlynaphthalene, 1-	ug/g	0.99	0.17	0.02	TP107-12	0.5-1.1
91577	Methlynaphthalene, 2-	ug/g	0.99	0.2	0.02	TP107-12	0.5-1.1
91576	Methlynaphthalene, 2-(1-)	ug/g	0.99	0.37	0.04	TP107-12	0.5-1.1
91203	Naphthalene	ug/g	0.60	0.22	0.01	TP107-12	0.5-1.1
85018	Phenanthrene	ug/g	6.2	**7.44**	0.02	TP107-12	0.5-1.1
129000	Pyrene	ug/g	78	4.97	0.02	TP107-12	0.5-1.1
BENZENE, TOLUENE, ETHYLBENZENE, XYLENES (BTEX)							
71432	Benzene	ug/g	0.21	<0.02	0.02	ALL SAMPLES	-
108883	Toluene	ug/g	2.3	<0.05	0.05	ALL SAMPLES	-
100414	Ethylbenzene	ug/g	2.0	<0.05	0.05	ALL SAMPLES	-
108383	m-Xylene & p-Xylene	ug/g	NA	<0.05	0.05	ALL SAMPLES	-
95476	o-Xylene	ug/g	NA	<0.05	0.05	ALL SAMPLES	-
1330207	Xylenes (Total)	ug/g	3.1	<0.05	0.05	ALL SAMPLES	-
PETROLEUM HYDROCARBONS (PHCs)							
PHCF1-BTEX	Petroleum Hydrocarbons F1-BTEX	ug/g	55	<7	7	ALL SAMPLES	-
PHCF2	Petroleum Hydrocarbons F2	ug/g	98	<4	4	ALL SAMPLES	-
PHCF3	Petroleum Hydrocarbons F3	ug/g	300	103	8	MW107-1B	0.6-1.5
PHCF4-CALC	Petroleum Hydrocarbons F4	ug/g	2,800	85	6	BH108-1A	0.0-1.1
VOLATILE ORGANIC COMPOUNDS (VOCs)							
67641	Acetone	ug/g	16	<0.5	0.5	ALL SAMPLES	-
75274	Bromodichloromethane	ug/g	13	<0.05	0.05	ALL SAMPLES	-
75252	Bromoform	ug/g	0.27	<0.05	0.05	ALL SAMPLES	-
74839	Bromomethane	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
56235	Carbon Tetrachloride	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
108907	Chlorobenzene	ug/g	2.4	<0.05	0.05	ALL SAMPLES	-
67663	Chloroform	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
124481	Dibromochloromethane	ug/g	9.4	<0.05	0.05	ALL SAMPLES	-
95501	Dichlorobenzene, 1,2-	ug/g	3.4	<0.05	0.05	ALL SAMPLES	-
541731	Dichlorobenzene, 1,3-	ug/g	4.8	<0.05	0.05	ALL SAMPLES	-
106467	Dichlorobenzene, 1,4-	ug/g	0.083	<0.05	0.05	ALL SAMPLES	-
75718	Dichlorodifluoromethane	ug/g	16	<0.05	0.05	ALL SAMPLES	-
75343	Dichloroethane, 1,1-	ug/g	3.5	<0.05	0.05	ALL SAMPLES	-
107062	Dichloroethane, 1,2-	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
75354	Dichloroethylene, 1,1-	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
156592	Dichloroethylene, 1,2-cis-	ug/g	3.4	<0.05	0.05	ALL SAMPLES	-
156605	Dichloroethylene, 1,2-trans-	ug/g	0.084	<0.05	0.05	ALL SAMPLES	-
78875	Dichloropropane, 1,2-	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
542011	Dichloropropene,1,3-cis	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
542012	Dichloropropene,1,3-trans	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
542756	Dichloropropene,1,3-	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
106934	Ethylene dibromide	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
11053	Hexane (n)	ug/g	2.8	<0.05	0.05	ALL SAMPLES	-
78933	Methyl Ethyl Ketone	ug/g	16	<0.5	0.5	ALL SAMPLES	-
108101	Methyl Isobutyl Ketone	ug/g	1.7	<0.5	0.5	ALL SAMPLES	-
1634044	Methyl tert-Butyl Ether (MTBE)	ug/g	0.75	<0.05	0.05	ALL SAMPLES	-
75092	Methylene Chloride	ug/g	0.10	<0.05	0.05	ALL SAMPLES	-
100425	Styrene	ug/g	0.70	<0.05	0.05	ALL SAMPLES	-
630206	Tetrachloroethane, 1,1,1,2-	ug/g	0.058	<0.05	0.05	ALL SAMPLES	-
79345	Tetrachloroethane, 1,1,2,2-	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
127184	Tetrachloroethylene	ug/g	0.28	<0.05	0.05	ALL SAMPLES	-
71556	Trichloroethane, 1,1,1-	ug/g	0.38	<0.05	0.05	ALL SAMPLES	-
79005	Trichloroethane, 1,1,2-	ug/g	0.050	<0.05	0.05	ALL SAMPLES	-
79016	Trichloroethylene	ug/g	0.061	<0.05	0.05	ALL SAMPLES	-
75694	Trichlorofluoromethane	ug/g	4.0	<0.05	0.05	ALL SAMPLES	-
75014	Vinyl Chloride	ug/g	0.020	<0.02	0.02	ALL SAMPLES	-

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).

Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
Residential/Parkland/Institutional Property-Use, Coarse-Textured Soil

-	Depths of samples not applicable, all values are non detectable concentrations
m bgs	meters below ground surface
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
ALL SAMPLES	All samples analyzed for the corresponding parameter reported non detectable concentrations
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard

TERRAPEX

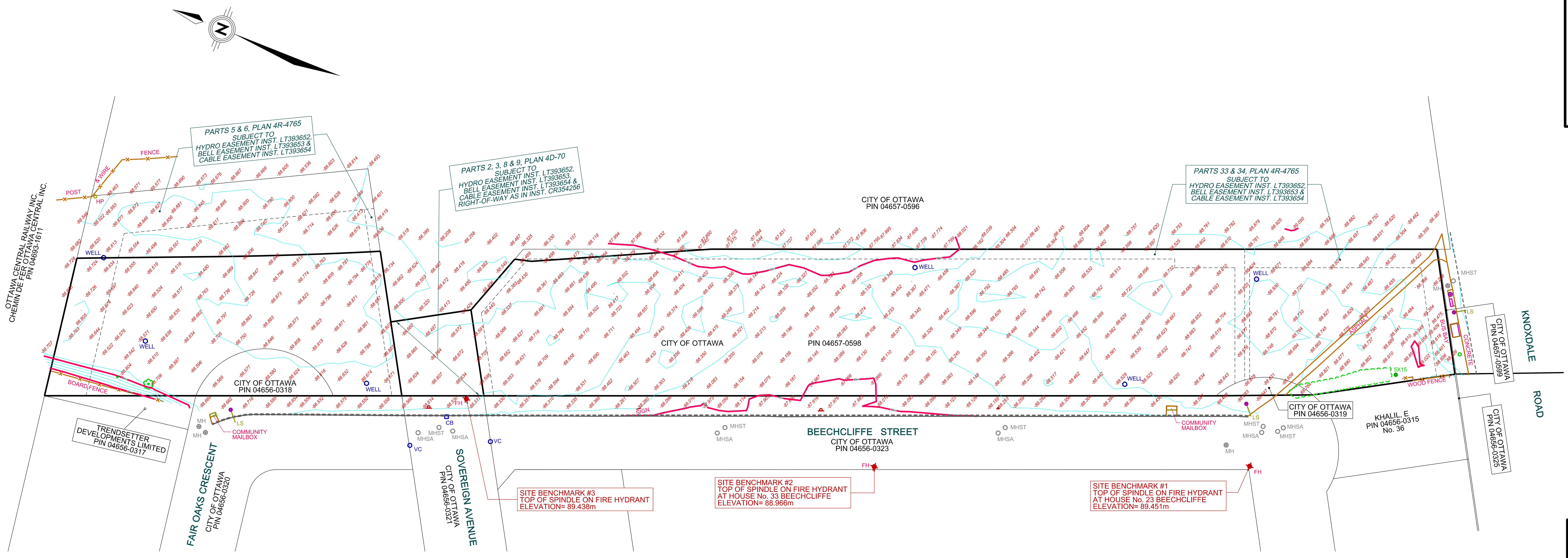
TABLE 14: SUMMARY OF MAXIMUM CONCENTRATIONS - GROUNDWATER
40 BEECHCLIFFE STREET, OTTAWA, ONTARIO

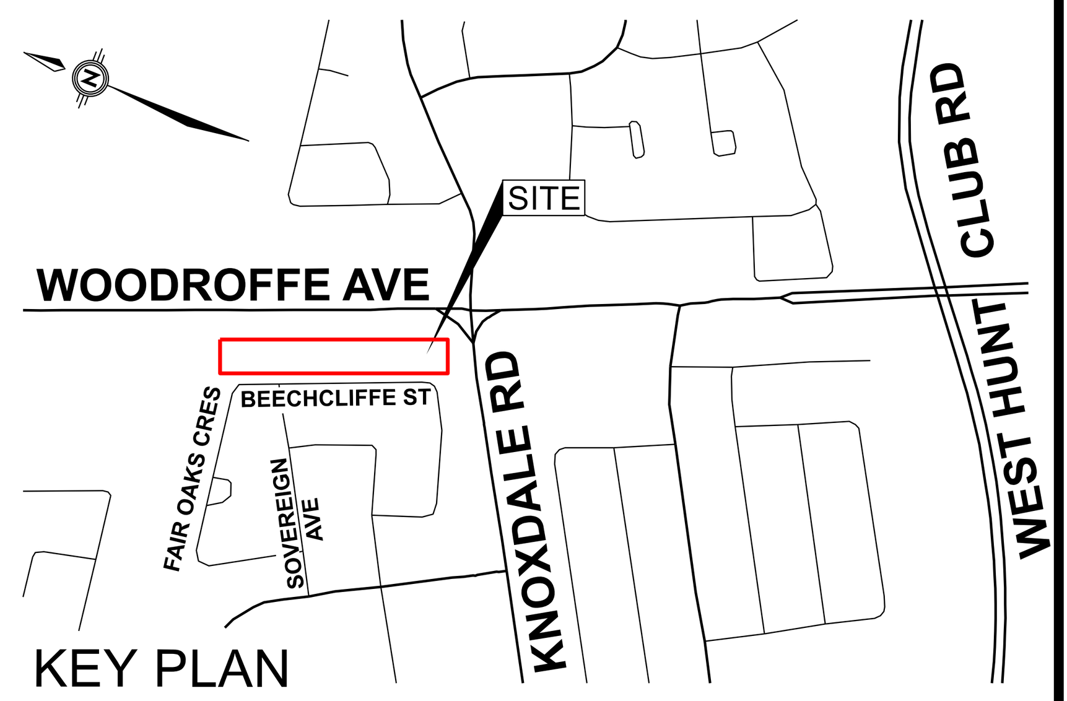
CAS / CONTAMINANT IDENTIFIER	PARAMETER	UNITS	STANDARDS Table 3 coarse	MAXIMUM CONCENTRATION	MAXIMUM DETECTION LIMIT	SAMPLE IDENTIFICATION	SCREEN INTERVAL (m bgs)
METALS							
7440393	Barium	ug/L	29,000	84	-	MW109D	3.1-6.1
7440417	Beryllium	ug/L	67	<0.5	0.5	ALL SAMPLES	-
7440428	Boron (Total)	ug/L	45,000	71	-	MW1111	3.4-6.4
7440439	Cadmium	ug/L	2.7	<0.1	0.1	ALL SAMPLES	-
16065831	Chromium Total	ug/L	810	<1	1	ALL SAMPLES	-
7440484	Cobalt	ug/L	66	3.4	-	MW111D	3.4-6.4
7440508	Copper	ug/L	87	1.7	-	MW109D	3.1-6.1
7439921	Lead	ug/L	25	<0.1	0.1	ALL SAMPLES	-
7439987	Molybdenum	ug/L	9,200	5	-	MW1111	3.4-6.4
7440020	Nickel	ug/L	490	12	-	MW111D	3.4-6.4
7440224	Silver	ug/L	1.5	<0.1	0.1	ALL SAMPLES	-
7440280	Thallium	ug/L	510	<0.1	0.1	ALL SAMPLES	-
7440611	Uranium	ug/L	420	11.6	-	MW111D	3.4-6.4
7440622	Vanadium	ug/L	250	<0.5	0.5	ALL SAMPLES	-
7440666	Zinc	ug/L	1,100	<5	5	ALL SAMPLES	-
HYDRIDE-FORMING METALS							
7440360	Antimony	ug/L	20,000	<0.5	0.5	ALL SAMPLES	-
7440382	Arsenic	ug/L	1,900	<1	1	ALL SAMPLES	-
7782492	Selenium	ug/L	63	<1	1	ALL SAMPLES	-
OTHER REGULATED PARAMETERS (ORPs)							
57125	Cyanide (CN-)	ug/L	66	<2	2	ALL SAMPLES	-
18540299	Chromium VI	ug/L	140	<10	10	ALL SAMPLES	-
7439976	Mercury	ug/L	0.29	<0.1	0.1	ALL SAMPLES	-
16887006	Chloride	ug/L	2,300,000	130	-	MW111D	3.4-6.4
7440235	Sodium	ug/L	2,300,000	62,800	-	MW111D	3.4-6.4
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)							
83329	Acenaphthene	ug/L	600	<0.05	0.05	ALL SAMPLES	-
208968	Acenaphthylene	ug/L	1.8	<0.05	0.05	ALL SAMPLES	-
120127	Anthracene	ug/L	2.4	<0.01	0.01	ALL SAMPLES	-
56553	Benz[a]anthracene	ug/L	4.7	<0.01	0.01	ALL SAMPLES	-
50328	Benzo[a]pyrene	ug/L	0.81	<0.01	0.01	ALL SAMPLES	-
205992	Benzo[b]fluoranthene	ug/L	0.75	<0.05	0.05	ALL SAMPLES	-
191242	Benzo[ghi]perylene	ug/L	0.20	<0.05	0.05	ALL SAMPLES	-
207089	Benzo[k]fluoranthene	ug/L	0.40	<0.05	0.05	ALL SAMPLES	-
218019	Chrysene	ug/L	1.0	<0.05	0.05	ALL SAMPLES	-
53703	Dibenz[a h]anthracene	ug/L	0.52	<0.05	0.05	ALL SAMPLES	-
206440	Fluoranthene	ug/L	130	<0.01	0.01	ALL SAMPLES	-
86737	Fluorene	ug/L	400	<0.05	0.05	ALL SAMPLES	-
193395	Indeno[1 2 3-cd]pyrene	ug/L	0.20	<0.05	0.05	ALL SAMPLES	-
90120	Methlynaphthalene, 1-	ug/L	1,800	<0.05	0.05	ALL SAMPLES	-
91577	Methlynaphthalene, 2-	ug/L	1,800	<0.05	0.05	ALL SAMPLES	-
91576	Methlynaphthalene, 2-(1-)	ug/L	1,800	<0.1	0.1	ALL SAMPLES	-
91203	Naphthalene	ug/L	1,400	<0.05	0.05	ALL SAMPLES	-
85018	Phenanthrene	ug/L	580	<0.05	0.05	ALL SAMPLES	-
129000	Pyrene	ug/L	68	<0.01	0.01	ALL SAMPLES	-
BENZENE, TOLUENE, ETHYLBENZENE, XYLENES (BTEX)							
71432	Benzene	ug/L	44	<0.5	0.5	ALL SAMPLES	-
108883	Toluene	ug/L	18,000	<0.5	0.5	ALL SAMPLES	-
100414	Ethylbenzene	ug/L	2,300	<0.5	0.5	ALL SAMPLES	-
108383	m-Xylene & p-Xylene	ug/L	NA	<0.5	0.5	ALL SAMPLES	-
95476	o-Xylene	ug/L	NA	<0.5	0.5	ALL SAMPLES	-
1330207	Xylenes (Total)	ug/L	4,200	<0.5	0.5	ALL SAMPLES	-
PETROLEUM HYDROCARBONS (PHCs)							
PHCF1-BTEX	Petroleum Hydrocarbons F1-BTEX	ug/L	750	<25	25	ALL SAMPLES	-
PHCF2	Petroleum Hydrocarbons F2	ug/L	150	<100	100	ALL SAMPLES	-
PHCF3	Petroleum Hydrocarbons F3	ug/L	500	<100	100	ALL SAMPLES	-
PHCF4-CALC	Petroleum Hydrocarbons F4	ug/L	500	<100	100	ALL SAMPLES	-
VOLATILE ORGANIC COMPOUNDS (VOCs)							
67641	Acetone	ug/L	130,000	<5	5	ALL SAMPLES	-
75274	Bromodichloromethane	ug/L	85,000	<0.5	0.5	ALL SAMPLES	-
75252	Bromoform	ug/L	380	<0.5	0.5	ALL SAMPLES	-
74839	Bromomethane	ug/L	5.6	<0.5	0.5	ALL SAMPLES	-
56235	Carbon Tetrachloride	ug/L	0.79	<0.2	0.2	ALL SAMPLES	-
108907	Chlorobenzene	ug/L	630	<0.5	0.5	ALL SAMPLES	-
67663	Chloroform	ug/L	2.4	<0.5	0.5	ALL SAMPLES	-
124481	Dibromochloromethane	ug/L	82,000	<0.5	0.5	ALL SAMPLES	-
95501	Dichlorobenzene, 1,2-	ug/L	4,600	<0.5	0.5	ALL SAMPLES	-
541731	Dichlorobenzene, 1,3-	ug/L	9,600	<0.5	0.5	ALL SAMPLES	-
106467	Dichlorobenzene, 1,4-	ug/L	8.0	<0.5	0.5	ALL SAMPLES	-
75718	Dichlorodifluoromethane	ug/L	4,400	<1	1	ALL SAMPLES	-
75343	Dichloroethane, 1,1-	ug/L	320	<0.5	0.5	ALL SAMPLES	-
107062	Dichloroethane, 1,2-	ug/L	1.6	<0.5	0.5	ALL SAMPLES	-
75354	Dichloroethylene, 1,1-	ug/L	1.6	<0.5	0.5	ALL SAMPLES	-
156592	Dichloroethylene, 1,2-cis-	ug/L	1.6	<0.5	0.5	ALL SAMPLES	-
156605	Dichloroethylene, 1,2-trans-	ug/L	1.6	<0.5	0.5	ALL SAMPLES	-
78875	Dichloropropane, 1,2-	ug/L	16	<0.5	0.5	ALL SAMPLES	-
542011	Dichloropropene,1,3-cis	ug/L	5.2	<0.5	0.5	ALL SAMPLES	-
542012	Dichloropropene,1,3-trans	ug/L	5.2	<0.5	0.5	ALL SAMPLES	-
542756	Dichloropropene,1,3-	ug/L	5.2	<0.5	0.5	ALL SAMPLES	-
106934	Ethylene dibromide	ug/L	0.25	<0.2	0.2	ALL SAMPLES	-
11053	Hexane (n)	ug/L	51	<1	1	ALL SAMPLES	-
78933	Methyl Ethyl Ketone	ug/L	470,000	<5	5	ALL SAMPLES	-
108101	Methyl Isobutyl Ketone	ug/L	140,000	<5	5	ALL SAMPLES	-
1634044	Methyl tert-Butyl Ether (MTBE)	ug/L	190	<2	2	ALL SAMPLES	-
75092	Methylene Chloride	ug/L	610	<5	5	ALL SAMPLES	-
100425	Styrene	ug/L	1,300	<0.5	0.5	ALL SAMPLES	-
630206	Tetrachloroethane, 1,1,1,2-	ug/L	3.3	<0.5	0.5	ALL SAMPLES	-
79345	Tetrachloroethane, 1,1,2,2-	ug/L	3.2	<0.5	0.5	ALL SAMPLES	-
127184	Tetrachloroethylene	ug/L	1.6	<0.5	0.5	ALL SAMPLES	-
71556	Trichloroethane, 1,1,1-	ug/L	640	<0.5	0.5	ALL SAMPLES	-
79005	Trichloroethane, 1,1,2-	ug/L	4.7	<0.5	0.5	ALL SAMPLES	-
79016	Trichloroethylene	ug/L	1.6	<0.5	0.5	ALL SAMPLES	-
75694	Trichlorofluoromethane	ug/L	2,500	<1	1	ALL SAMPLES	-
75014	Vinyl Chloride	ug/L	0.50	<0.5	0.5	ALL SAMPLES	-

Standards from Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended).
Table 3: Full Depth Generic SCS in a Non-Potable Ground Water Condition
All Types of Property-Use, Coarse-Textured Soil

-	Depths of samples not applicable, all values are non detectable concentrations
m bgs	meters below ground surface
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
ALL SAMPLES	All samples analyzed for the corresponding parameter reported non detectable concentrations
Value	Exceeds applicable site condition standard
Value	Detection limit exceeds standard

APPENDIX I
PLAN OF SURVEY





SCALE - 1 : 500

10 0 10 20

(METRES)

THIS IS NOT A PLAN OF SURVEY
Boundaries shown hereon are NOT based on an actual survey.
Contractors are required to verify boundary locations in the field prior to commencing construction.

WINTER CONDITIONS
Due to the accumulation of ice and snow, it is possible that some elements may have been overlooked during the commission of this survey.

This plan was compiled from plans and documents recorded in the Land Registry System and has been prepared for property indexing purposes only.

Easements are not noted on adjacent properties.

Ottawa

PLANNING, DEVELOPMENT AND
BUILDING SERVICES DEPARTMENT
SURVEYS & MAPPING BRANCH

PHONE (613) 580-2400
FAX (613) 580-4764

100 CONSTELLATION DRIVE
OTTAWA, ONTARIO, K2G 6J8

PROJECT : 40 BEECHCLIFFE STREET

DATA COMPILATION : TOTAL STATION MAPPING		
DATA TYPE : ELECTRONIC FIELD NOTES		
HORIZONTAL AND VERTICAL DATUM : NAD 83 (ORIGINAL) ZONE 9 MTM - CGVD28		
HYPSOGRAPHIC MODEL : BREAKLINES & SPOT HEIGHTS		
RECOMMENDED HARDCOPY SCALE : 1 : 250		
RECOMMENDED CONTOUR INTERVAL : 0.25 m		
A - NUMBER : A-4746		
COMPUTER GRAPHICS FILE NAME : ORIG-CVGD28-24018A-m.dgn		
JOB - NUMBER : 24018-A		
FIELD DATE COLLECTED : T.A. / B.B. / C.M. / D.M.	DATE : DEC. 2024	
CAD / CALC'D : R.D.	DATE : JAN. 2025	
MAP / CADASTRAL COMPILATION CHECK : A.R.	DATE : JAN. 2025	
THIS MAP DEPICTS DIGITAL DATA		

A-4746

APPENDIX II
CORRESPONDENCE REGARDING NON-POTABLE STANDARDS

January 14, 2025
CO986.00

City of Ottawa
Planning, Infrastructure and Economic Development
110 Laurier Avenue West
Ottawa, Ontario
K1P 1J1

Attention: Michel Kearney, P. Geo.
Senior Hydrogeologist

Via email: michel.kearney@ottawa.ca

Re: Notification of Environmental Standards
40 Beechcliffe Street, Ottawa, Ontario

Dear Mr. Kearney:

Terrapex Environmental Ltd. (Terrapex) has been retained by the City of Ottawa to conduct a Phase Two Environmental Site Assessment for the property located at 40 Beechcliffe Street, in Ottawa, Ontario (the Site).

After reviewing Ontario Regulation (O. Reg.) 153/04 *Records of Site Condition - Part XV.1 of the Act,* Terrapex has determined that the Site meets the requirements outlined in Section 35 of the regulation. As such, applicable full depth generic site condition standards in a non-potable groundwater condition will be applied to the analytical data obtained from the Site.

On behalf of the owner, and in accordance with the requirements of Section 35 of O. Reg. 153/04, Terrapex is hereby providing written notice to the City of Ottawa of the intention to apply non-potable groundwater site condition standards in preparing a Record of Site Condition for the property at 40 Beechcliffe Street, Ottawa, Ontario.

If you have any questions or concerns regarding this matter, please do not hesitate to contact the undersigned.

Sincerely,
TERRAPEX ENVIRONMENTAL LTD

Greg Sabourin, PEng
Project Manager

13 February 2025

Mr. Greg Sabourin, P.Eng.
Terrapex Environmental Ltd.
20 Gurdwara Road
Ottawa, Ontario
K2E 8B3

Dear Mr. Sabourin,

Re: Record of Site Condition – 40 Beechcliffe Street

As per your letter of January 14, 2025 (attached), requesting to use non-potable standards, this is to advise that the City of Ottawa consents to the use of non-potable groundwater standards for the property identified as 40 Beechcliffe Street, Ottawa, ON, as part of the filing of a Record of Site Condition.

Best Regards,

Michel Kearney, P.Geo.

Senior Hydrogeologist
Geoscience & Source Water Protection
Asset Management
Infrastructure and Water Services Department

Hydrogéologue principal
Géosciences & protection des sources d'eau
Gestion des actifs
Direction générale des services d'infrastructure et d'eau

City of Ottawa | Ville d'Ottawa
Cell: 613-606-5862
ottawa.ca/planning / ottawa.ca/urbanisme

APPENDIX III
PERTINENT PREVIOUS ENVIRONMENTAL REPORTS

NO PREVIOUS REPORTS HAVE BEEN INCLUDED

APPENDIX IV
SAMPLING AND ANALYSIS PLAN

SAMPLING AND ANALYSIS PLAN
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

Site: 40 Beechcliffe Street, Ottawa, Ontario
Project No: CO986.00
Date: January 7, 2025

OBJECTIVES

On behalf of the City of Ottawa, Terrapex Environmental Ltd. (Terrapex) has prepared this sampling and analysis plan for a Supplemental Phase Two Environmental Site Assessment (ESA) at 40 Beechcliffe Street, Ontario, the "Phase Two Property". The Phase Two ESA is being conducted in accordance with the requirements of Ontario Regulation (O. Reg.) 153/04, *Records of Site Condition - Part XV.1 of the Act.* it is understood that a Record of Site Condition (RSC) is required as there an intended change in land use. The objective of this ESA is to determine the location and concentration of contaminants in the land or water on, in or under the Phase Two Property

The soil sampling completed in November 2024 as part of Phase Two ESA indicated that concentrations of PAH impacted fill was present within the vicinity of borehole MW111. Additional soil samples collected in December 2024 confirmed that fill with concentrations of PAH parameters existed in the vicinity of MW111.

The objective of the current work program is to gain additional information regarding the horizontal extent of the impacted fill layer and its thickness.

SAMPLING PROGRAM

The media to be investigated and the contaminants of concern have been determined based on findings from previous investigations. The rationale for each sampling location, and the proposed laboratory analytical program for each location, is shown on Table 1. The media, contaminants, investigation and sampling methods are summarized on Table 2. Modifications may be made to the program during the course of implementation, based on field observations, and will be documented in the Phase Two ESA report.

STANDARD OPERATING PROCEDURES

The following Terrapex Standard Operating Procedures (SOPs) may be used:

SOP E01.00 – Field Meter Calibration
SOP E02.00 – Test Pitting
SOP E09.00 – Soil Sample Handling
SOP E10.00 – Soil Classification
SOP E11.01 – Measuring and Surveying Using Total Station
SOP E12.00 – Field Program Quality Assurance & Quality Control

DATA QUALITY OBJECTIVES

The investigation will be completed following Terrapex SOP *E12.00 - Field Program Quality Assurance & Quality Control*, which specifies requirements for minimizing cross-contamination, record-keeping, sample storage, sample submission, field QA/QC samples and data quality objectives. If the data quality objectives are not met, the Qualified Person for the project will review the results and determine whether the deviation affects decision-making or the overall objectives of the investigation.

LABORATORY PROGRAM

Project Laboratory: Paracel Laboratories Ltd.

Accreditation: Canadian Association for Laboratory Accreditation Inc. (CALA) in accordance with the International Standard ISO/IEC17025-2005 – *General Requirements for the Competence of Testing and Calibration Laboratories*

Proposed Analytical Program: See Table 3, attached.

Analytical Methods: The laboratory will use the methods specified in the *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011 (Analytical Protocol).*

Sample Containers and Preservatives: See Table 4, attached.
Paracel's Quality Assurance/Quality Control (QA/QC) program will consist of the analysis of method blanks, laboratory control samples, matrix spikes, sample duplicates, and surrogates, as appropriate for the particular analysis protocol and as specified in the *Analytical Protocol.*

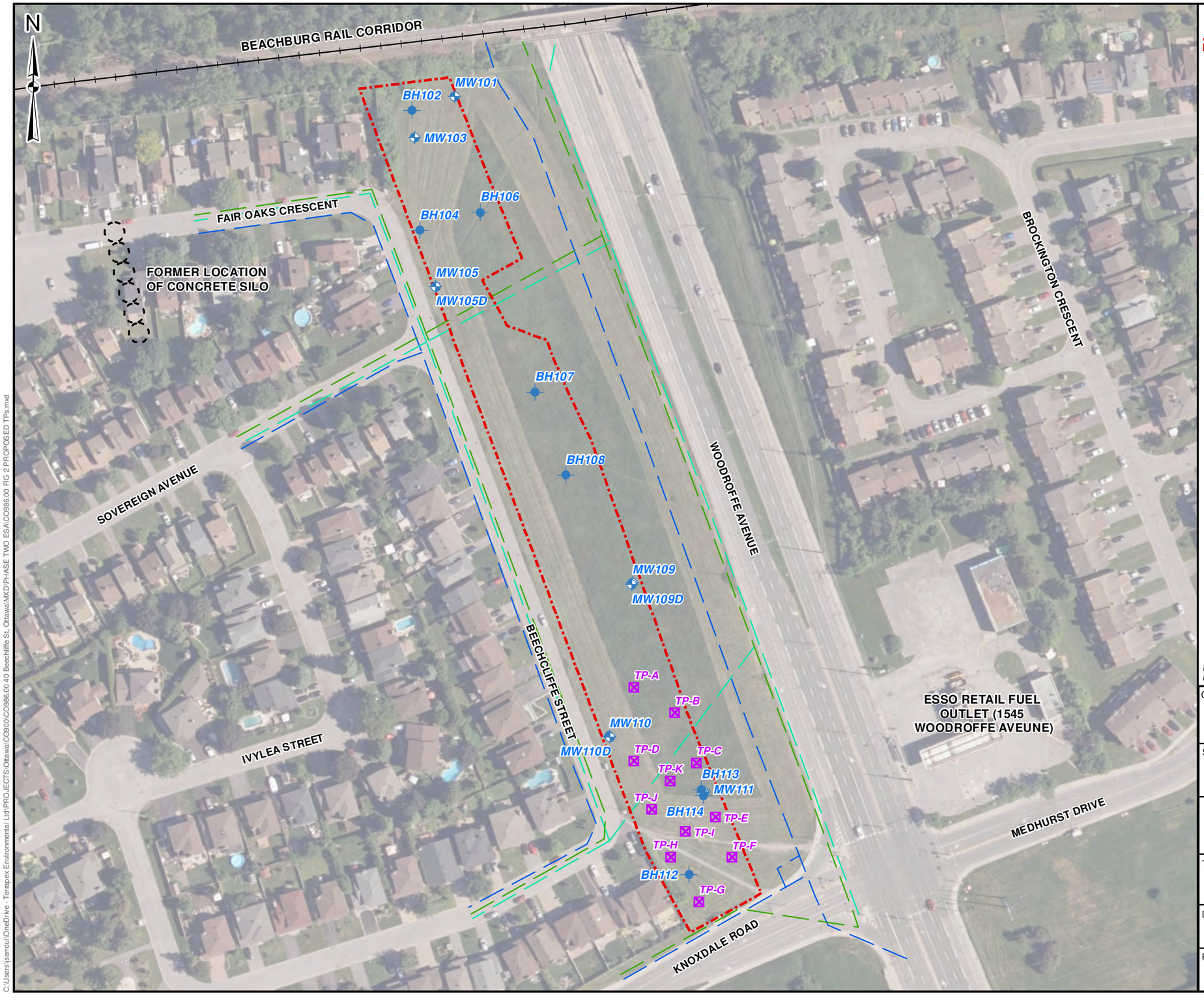
SUB-CONTRACTORS

All sub-contractors used in the test pit program will be approved suppliers according to Terrapex's approval process. The following sub-contractors will be retained for this project:

Private utility locates: Multiview Locates Inc.
Borehole drilling and well installation: Strata Soil Sampling
Laboratory analyses: Paracel Laboratories Ltd.

ATTACHMENTS

Figure 1 – Proposed Sample Locations
Table 1 – Proposed Sampling Plan
Table 2 – Media to be Investigated and Chemicals of Concern
Table 3 – Sample Containers and Preservation Plan



C:\Users\jserroul\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO900\CO986.00 40 Beechliffe St, Ottawa\MXD\PHASE TWO ESA\CO986.00 FIG 2 PROPOSED TPs.mxd

LEGEND

- SITE BOUNDARY
- BOREHOLE
- MONITORING WELL
- PROPOSED TEST PIT
- CANADIAN NATIONAL RAILWAY

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
PROPOSED TEST PITS

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS	CO986.00	KB
REVISION: 00	DATE: JANUARY 2025	FIGURE: **2**

TABLE 1 PROPOSED PHASE TWO ESA PROGRAM

40 Beechclife Street, Ottawa, ON

APEC	LOCATION	CONTAMINANTS OF POTENTIAL CONCERN	MEDIA POTENTIALLY IMPACTED	PROPOSED SAMPLING LOCATIONS	Comments
APEC 1	Throughout southern portion of the Site to delienate PAH impacts in fill as	- PAHs	- Soil	TPA, TPB, TPC	Locations of the test pits to be determined in the field based observations. A days worth of test pits are to be completed.

PAHs: polycyclic aromatic hydrocarbons

TABLE 2 MEDIA INVESTIGATED, CONTAMINANTS OF CONCERN AND METHODS

40 Beechclife Street, Ottawa, ON

Media	Contaminants of Concern	Investigation Method	Equipment	Sample Collection Method
Soil	Polycyclic aromatic hydrocarbons	Test pits	Backhoe	Collection of sample from directly from bucket of the backhoe

TABLE 3 SAMPLE CONTAINERS AND PRESERVATION

Media	Analytical Parameter	Field Filtered	Sample Container	Preservation	Holding Time (preserved)
Soil	PAHs	Not applicable	120 mL glass jar, teflon lined lid	5 ± 3 °C	60 days

BTEX = benzene, toluene, ethylbenzene, xylenes
PHC F1 - F4 = petroleum hydrocarbons F1 to F4 fractions
VOCs = volatile organic compounds
PAHs = polycyclic aromatic hydrocarbons (O. Reg. 153/04)
TCLP = toxicity characterization leachate procedure
HDPE = high density polyethylene
OC = Oragnochlorine pesticides
SVOC = semi volatile organics compounds

SAMPLING AND ANALYSIS PLAN
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

Site: 40 Beechcliffe Street, Ottawa, Ontario
Project No: CO986.00
Date: November 18, 2024

OBJECTIVES

On behalf of the City of Ottawa, Terrapex Environmental Ltd. (Terrapex) has prepared this sampling and analysis plan for a Supplemental Phase Two Environmental Site Assessment (ESA) at 40 Beechcliffe Street, Ontario, the "Phase Two Property". The Phase Two ESA is being conducted in accordance with the requirements of Ontario Regulation (O. Reg.) 153/04, *Records of Site Condition - Part XV.1 of the Act.* it is understood that a Record of Site Condition (RSC) is required as there an intended change in land use. The objective of this ESA is to determine the location and concentration of contaminants in the land or water on, in or under the Phase Two Property.

SAMPLING PROGRAM

The media to be investigated and the contaminants of concern have been determined based on findings from previous investigations. The rationale for each sampling location, and the proposed laboratory analytical program for each location, is shown on Table 1. The media, contaminants, investigation and sampling methods are summarized on Table 2. Modifications may be made to the program during the course of implementation, based on field observations, and will be documented in the Phase Two ESA report.

STANDARD OPERATING PROCEDURES

The following Terrapex Standard Operating Procedures (SOPs) may be used:

SOP E01.00 – Field Meter Calibration
SOP E03.03 – Borehole Advancement Using Direct Push Methodology
SOP E04.00 – Monitoring Well Installation
SOP E05.00 – Monitoring Well Development
SOP E06.00 – Groundwater Monitoring
SOP E07.00 – Groundwater Sampling using inertial pump

SOP E09.00 – Soil Sample Handling
SOP E10.00 – Soil Classification
SOP E11.01 – Measuring and Surveying Using Total Station
SOP E12.00 – Field Program Quality Assurance & Quality Control

DATA QUALITY OBJECTIVES

The investigation will be completed following Terrapex SOP *E12.00 - Field Program Quality Assurance & Quality Control*, which specifies requirements for minimizing cross-contamination, record-keeping, sample storage, sample submission, field QA/QC samples and data quality objectives. If the data quality objectives are not met, the Qualified Person for the project will review the results and determine whether the deviation affects decision-making or the overall objectives of the investigation.

LABORATORY PROGRAM

Project Laboratory: Paracel Laboratories Ltd.

Accreditation: Canadian Association for Laboratory Accreditation Inc. (CALA) in accordance with the International Standard ISO/IEC17025-2005 – *General Requirements for the Competence of Testing and Calibration Laboratories*

Proposed Analytical Program: See Table 3, attached.

Analytical Methods: The laboratory will use the methods specified in the *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011 (Analytical Protocol).*

Sample Containers and Preservatives: See Table 4, attached.
Paracel's Quality Assurance/Quality Control (QA/QC) program will consist of the analysis of method blanks, laboratory control samples, matrix spikes, sample duplicates, and surrogates, as appropriate for the particular analysis protocol and as specified in the *Analytical Protocol.*

SUB-CONTRACTORS

All sub-contractors used in the Phase Two ESA will be approved suppliers according to Terrapex's approval process. The following sub-contractors will be retained for this project:

Private utility locates: Multiview Locates Inc.
Borehole drilling and well installation: Strata Soil Sampling
Laboratory analyses: Paracel Laboratories Ltd.

ATTACHMENTS

TABLE 1A PROPOSED PHASE TWO ESA PROGRAM

40 Beechclife Street, Ottawa, ON

APEC	LOCATION	CONTAMINANTS OF POTENTIAL CONCERN	MEDIA POTENTIALLY IMPACTED	PROPOSED SAMPLING LOCATIONS	Comments
APEC 1	Importation of fill throghout the entirety of the Site.	- M&I - PAHs - BTEX - PHCs	- Soil	MWA, MWB, MWC, BHD, BHE, MWE, MWF, MWG, MWH, BHI, BHJ, BHK and BHL	Fill located in tehse sampling locations are to be analysed for the COPC
APEC 2	Northwestern portion of property closest to former concrete plan.	- M&I - PAHs - VOCs - PHCs	- Soil - Groundwater	MWB, MWC and BHE	Shallow soil is expected to have maximum concentrations of PAHs and metals and inorganics from APEC 2. Soil samples collected from the apparent groundwater table are expceted to have maximum concetrations of VOCs and PHCs.
APEC 3	Northern portion of the Site	- OC - M&I - ABNs -PAHs	- Soil	BHD and MWA	Shallow soil is expected to be the area of maximum concentration.
APEC 4A APEC 4B	Southeast Portion of the Site	- metals - VOCs - BTEX	- Soil - Groundwater	MWF and MWG	Soils samples collected from the apparent water table are expected to exhibit the maximum concentration of COPCs.

BTEX benzene, toluene, ethylbenzene, xylenes

PHCs: petroleum hydrocarbons (F1-F4)

VOCs Volatile Organic compounds

PAHs: polycyclic aromatic hydrocarbons

M&I Metals and Inorganics

OC organochlorine pesticides

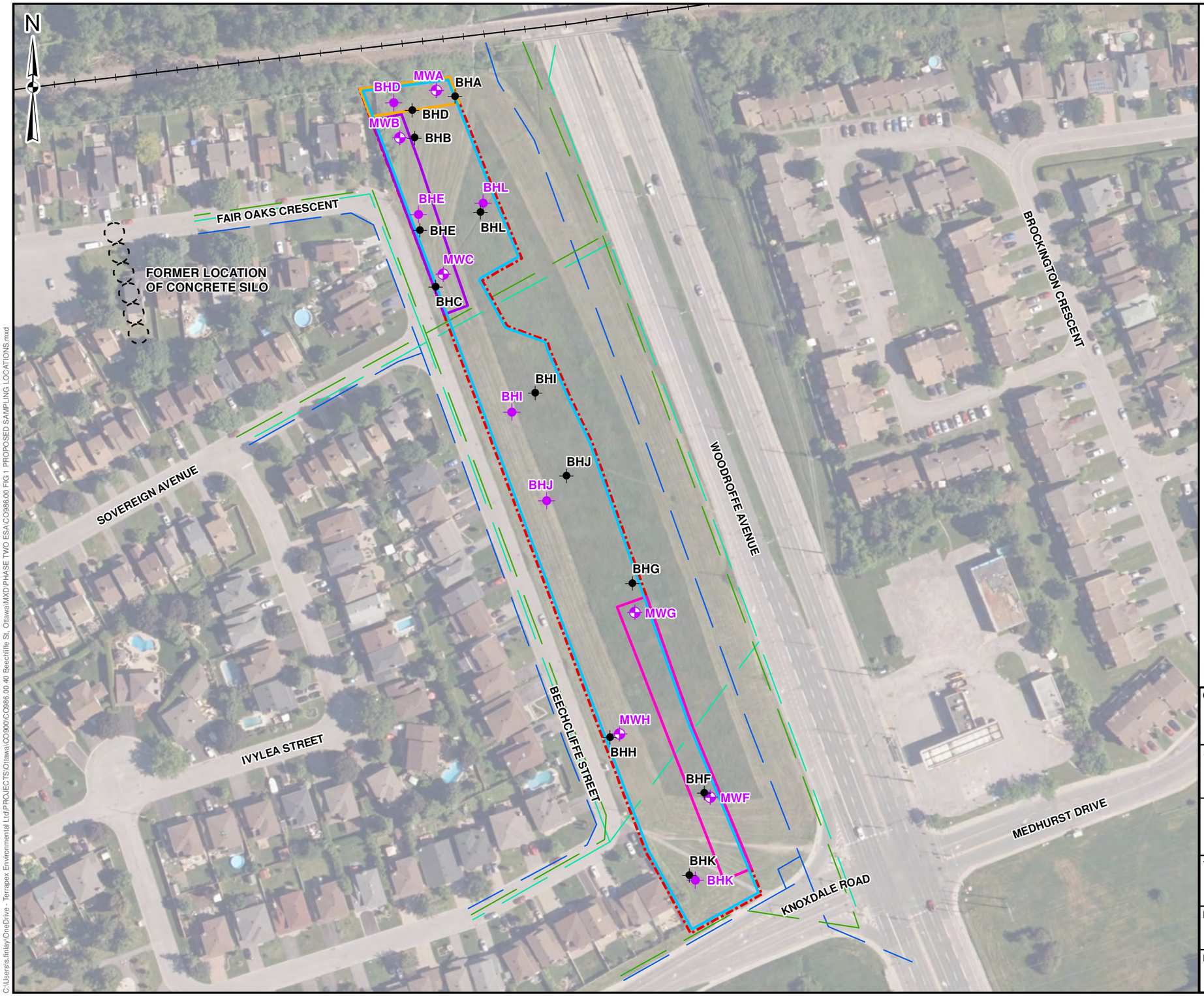
SVOCs semi Volatile Organic compounds

TABLE 1B PROPOSED PHASE TWO ESA PROGRAM

40 Beechclife Street, Ottawa, ON

LOCATION	Depth	APEC	CONTAMINANTS OF POTENTIAL CONCERN	MEDIA POTENTIALLY IMPACTED	Comments
MWA,	Water table (7.6 m bg)	APEC 1 (FILL),	- M&I - PAHs - BTEX - PHCs	- Soil	Collection of fill sample best representative of majority of fill. Select base on CV, or visual or odour impact
		APEC 3 (Rail)	- OC - M&I - SVOCs	Soil	Collection of shallow soil sample to represent worst case condtions from the rail
MWB and MWC	Water table (7.6 m bg)	APEC 1 (FILL),	- M&I - PAHs - BTEX	Soil	Collection of fill sample best representative of majority of fill. Select base on CV, or visual or odour impact
		APEC 2 (Concrete plant)	- M&I - PAHs - VOCs - PHCs	Soil Groundwater	Collection of soil sample from water table
BHD	Depth until native is encoutered (4.6)	APEC 1 (FILL),	- M&I - PAHs - BTEX - PHCs	- Soil	Collection of fill sample best representative of majority of fill. Select base on CV, or visual or odour impact
		APEC 3 (Rail)	- OC - M&I - SVOCs	Soil	Collection of shallow soil sample to represent worst case condtions from the rail
BHE	Water table (7.6 m bg)	APEC 1 (FILL),	- M&I - PAHs - BTEX	- Soil	Collection of fill sample best representative of majority of fill. Select base on CV, or visual or odour impact
		APEC 2 (Concrete plant)	- M&I - PAHs - VOCs	Soil Groundwater	Collection of soil sample from water table
MWF and MWG	Water table (7.6 m bg)	APEC 1 (FILL),	- M&I - PAHs - BTEX - PHCs	- Soil	Collection of fill sample best representative of majority of fill. Select base on CV, or visual or odour impact
		APEC 4A and 4B (RFO and Garage)	- metals - VOCs - BTEX - PHCs	Soil	Collection of soil sample from water table
MWH	Water table (7.6 m bg)	APEC 1 (FILL), Third position for flow direction	- BTEX - PHCs	Soil	
BHI, BHJ. BHK BHL	Depth until native is encoutered (4.6)	APEC 1 (FILL),	- M&I - PAHs - BTEX - PHCs	soil	Collection of fill sample best representative of majority of fill. Select base on CV, or visual or odour impact

BTEX	benzene, toluene, ethylbenzene, xylenes
PHCs:	petroleum hydrocarbons (F1-F4)
VOCs	Volatile Organic compounds
PAHs:	polycyclic aromatic hydrocarbons
M&I	Metals and Inorganics
OC	organochlorine pesticides
SVOCs	semi Volatile Organic compounds



C:\Users\s.finlay\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO900\CO986.00 40 Beechcliffe St, Ottawa\MXD\PHASE TWO ESA\CO986.00 FIG 1 PROPOSED SAMPLING LOCATIONS.mxd

LEGEND

- SITE BOUNDARY
- PROPOSED MONITORING WELL
- PROPOSED BOREHOLE
- STAKED BOREHOLE LOCATIONS
- CANADIAN NATIONAL RAILWAY

UNDERGROUND UTILITES

- STORM SEWER
- SANITARY SEWER
- WATERMAIN

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

- APEC-1 (ENTIRE SITE)
- APEC-2
- APEC-3
- APEC-4

APEC	PCA ID	PCA TYPE	DESCRIPTION
1	1	30	IMPORTATION OF FILL MATERIAL OF UNKNOWN QUALITY
2	2	12	CONCRETE, CEMENT AND LIME MANUFACTURING
3	3	46	RAIL YARDS, TRACKS AND SPURS
4	4A	27	GARAGES AND MAINTENANCE AND REPAIR OF RAILCARS, MARINE VEHICLES AND AVIATION VEHICLES
	4B	28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS

0 20 40 60
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT: Ottawa

SITE LOCATION:
40 BEECHCLIFFE STREET
OTTAWA, ONTARIO

TERRAPEX

TITLE:
PROPOSED SAMPLING LOCATIONS

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SF	CO986.00	KB
REVISION: 00	DATE: NOVEMBER 2024	FIGURE: 1

TABLE 2 MEDIA INVESTIGATED, CONTAMINANTS OF CONCERN AND METHODS

40 Beechclife Street, Ottawa, ON

Media	Contaminants of Concern	Investigation Method	Equipment	Sample Collection Method
Soil	Petroleum hydrocarbons Polycyclic aromatic hydrocarbons Volatile organic compounds Benzene, toluene, ethylbenzene, xylenes oragnochlorine pesticides semi volatile organic compounds	Boreholes	Geoprobe drill rig	direct push with a dedicated plastic liner, sample every 1.5 m
Groundwater	Petroleum hydrocarbons Polycyclic aromatic hydrocarbons Volatile organic compounds Benzene, toluene, ethylbenzene, xylenes Metals, metal hydrides Mercury Chromium VI Sodium, chloride Semi volatile organic compounds	Monitoring wells	Geoprobe drill rig	Low-flow sampling using peristaltic pump, target top 0.5 m of water column

TABLE 3 SAMPLE CONTAINERS AND PRESERVATION

Media	Analytical Parameter	Field Filtered	Sample Container	Preservation	Holding Time (preserved)
Soil	Metals, metal hydrides, hot water soluble boron, chromium VI, SAR, EC, pH, OC, SVOC	Not applicable	250 mL glass jar	5 ± 3 °C	180 days
	BTEX, PHC F1	Not applicable	40 mL glass vial and 60 mL glass jar, no headspace	10 mL methanol, 5 ± 3 °C	14 days
	BTEX, PHC F1	Not applicable	Hermetic sampler (Encore™)	5 ± 3 oC	Extract within 48 hrs
	PHCs F2-F4	Not applicable	120 mL glass jar, teflon lined lid	5 ± 3 °C	14 days
	VOCs	Not applicable	40 mL glass vial and 60 mL glass jar, no headspace	10 mL methanol, 5 ± 3 °C	14 days
	PAHs	Not applicable	120 mL glass jar, teflon lined lid	5 ± 3 °C	60 days
	Reg. 558 TCLP - non-volatiles	Not applicable	250 mL glass jar	5 ± 3 °C	
	Reg. 558 TCLP - volatiles	Not applicable	120 mL glass jar, teflon lined lid	5 ± 3 °C	
Groundwater	Metals, metal hydrides, sodium	Yes	250 mL HDPE bottle	HNO_3 to pH < 2 5 ± 3 oC	60 days
	Mercury	Yes	125 mL clear glass bottle	HCl to pH < 2 5 ± 3 oC	28 days
	Chromium VI	Yes	250 mL HDPE bottle	$(NH_4)_2SO_4/HN_4OH$ 5 ± 3 oC	28 days
	BTEX, PHC F1	No	3 x 40 mL clear glass septum vial, no headspace	$NaHSO_4$ to pH < 2 5 ± 3 $_o$C	14 days
	PHCs F2-F4	No	2 x 500 mL amber glass bottle	$NaHSO_4$ to pH < 2 5 ± 3 $_o$C	40 days
	VOCs	No	3 x 40 mL clear glass septum vial, no headspace	$NaHSO_4$ to pH < 2 5 ± 3 $_o$C	14 days
	PAHs, SVOCs, OCs	No	1 L amber glass bottle	5 ± 3 °C	14 days

BTEX = benzene, toluene, ethylbenzene, xylenes
PHC F1 - F4 = petroleum hydrocarbons F1 to F4 fractions
VOCs = volatile organic compounds
PAHs = polycyclic aromatic hydrocarbons (O. Reg. 153/04)
TCLP = toxicity characterization leachate procedure
HDPE = high density polyethylene
OC = Oragnochlorine pesticides
SVOC = semi volatile organics compounds

APPENDIX V
BOREHOLE LOGS

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: BH107**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 5020506.783	EASTING (m): 440930.761 ELEV. (m) 88.52
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm):	WELL DIAMETER (cm): -	SCREEN SLOT #: - SAND TYPE: - SEALANT TYPE: -

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, dark brown silty clay some gravel, organics	0	88.5			1A		66	<5 ppm			
		FILL moist, light brown silty sand trace gravel	0.5 1 1.5 2	88 87.5 87 86.5			1B 2A		66 80	<5 ppm <5 ppm	METALS, PAHs, BTEX, PHCs		
		wet, brown/olive SILTY CLAY	2.5 3 3.5	86 85.5 85			2B 3A		- -	<5 ppm 130 ppm	BTEX, PHCs, VOCs		
		light brown SAND	4	84.5			3B		100	<5 ppm			
		END OF BOREHOLE	4.5	84									

TERRAPEX

LOGGED BY: JM	DRILLING DATE: 21-NOV-2024
INPUT BY: SAF	MONITORING DATE: -
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: BH108**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 5020474.732	EASTING (m): 440942.768 ELEV. (m) 87.80
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm):	WELL DIAMETER (cm): -	SCREEN SLOT #: - SAND TYPE: - SEALANT TYPE: -

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, dark brown silty sand some gravel, trace organics	0 0.5	87.5			1A		66	<5 ppm	METALS, PAHs, BTEX, PHCs		
		moist, brown SILTY CLAY trace gravel, sand	1 1.5 2	87 86.5 86			1B 2A		- -	<5 ppm <5 ppm			
		moist, brown SILTY SAND	2.5 3	85.5 85			3A		-	<5 ppm			
		wet, brown SAND	3.5 4 4.5	84.5 84 83.5			3B		- -	<5 ppm			
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: JM	DRILLING DATE: 21-NOV-2024
INPUT BY: SAF	MONITORING DATE: -
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: MW109**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 440968.17	EASTING (m): 5020432.67 ELEV. (m) 88.32
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm): 9.53	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: #2 SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, dark brown silty clay some gravel, trace sand, trace organics	0 0.5	88			1A			<5 ppm	METALS, PAHs		GW ELEVATION: DRY
		FILL moist, light brown silty sand	1 1.5	87.5 87			1B 2A			<5 ppm <5 ppm	BTEX, PHCs		
		FILL moist, dark brown silty clay some gravel, trace sand, trace organics, trace brick --- wet	2 2.5	86.5 86			2B			<5 ppm			
		moist to wet SANDY SILT --- saturated	3 3.5	85.5 85			3A			<5 ppm	BTEX, PHCs, VOCs		
		saturated, brown SAND	4 4.5	84.5 84			3B			<5 ppm			
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: MK	DRILLING DATE: 22-NOV-2024
INPUT BY: SW	MONITORING DATE: 02-DEC-2024
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: MW109D**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 440968.17	EASTING (m): 5020432.67 ELEV. (m) 88.32
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm): 9.53	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: #2 SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		NO SAMPLES COLLECTED ABOVE 4.5 m bgs	0	88									
			0.5										
			1	87.5									
			1.5	87									
			2	86.5									
			2.5	86									
			3	85.5									
			3.5	85									
			4	84.5									
			4.5	84									
		wet, brown, coarse SILTY SAND	5	83.5			1		70	<5 ppm			
			5.5	83			2		70	<5 ppm			
			6	82.5									
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 6-DEC-24
INPUT BY: BW	MONITORING DATE: 11-DEC-2024
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: MW110**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 440959.686	EASTING (m): 5020373.796 ELEV. (m) 88.475
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm): 9.53	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 / SAND TYPE: #2 / SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, brown silty clay trace concrete, trace asphalt, trace organics	0 0.5 1	88 87.5			1A		73	<5 ppm	METALS, PAHs, BTEX PHCs		GW ELEVATION: DRY
		FILL light brown silty sand	1.5	87			1B						
		FILL moist, brown sandy silt trace clay, trace gravel	2 2.5	86.5 86			2A		47	<5 ppm			
		FILL wet, grey silty clay some gravel, trace sand	3	85.5			2B		47	<5 ppm			
		wet, brown SAND	3.5 4	85 84.5			3		47	<5 ppm			
		END OF BOREHOLE	4.5	84									

TERRAPEX

LOGGED BY: MK	DRILLING DATE: 22-NOV-2024
INPUT BY: BW	MONITORING DATE: 02-DEC-2024
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: MW110D**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 440959.686	EASTING (m): 5020373.796 ELEV. (m) 88.475
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm): 9.53	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: #2 SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		NO SAMPLES COLLECTED ABOVE 4.5 m bgs	0	88			-						
			0.5										
			1	87.5									
			1.5	87									
			2	86.5									
			2.5	86									
			3	85.5									
			3.5	85									
			4	84.5									
		wet, light grey fine SILTY SAND	4.5	84									
			5	83.5			1		90	<5 ppm			
			5.5	83			2		90	<5 ppm			
			6	82.5									
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 6-DEC-24
INPUT BY: BW	MONITORING DATE: 11-DEC-2024
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: MW111**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 5020352.362	EASTING (m): 440995.17 ELEV. (m) 88.688
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm):	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: #2 SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, dark brown silty sand trace clay, trace organics	0 0.5	88.5			1A						
		FILL moist, dark brown silty clay trace brick, trace sand, trace asphalt	1 1.5	88 87.5			1B		87	<5 ppm	METALS, PAHs, BTEX, PHCs		
		moist, light brown SAND	2	87			2A 2B		100 100	<5 ppm <5 ppm			
		wet, light brown, grey SILTY CLAY trace sand --- saturated	2.5 3	86.5 86			2C			<5 ppm	METALS, PAHs, BTEX, PHCs, VOCs		DUP MW110-1D
		light brown SAND	3.5 4 4.5	85.5 85 84.5			3A 3B		100	<5 ppm <5 ppm			
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: MK	DRILLING DATE: 22-NOV-2024
INPUT BY: BW	MONITORING DATE: 02-DEC-2024
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: MW111D**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 5020352.362	EASTING (m): 440995.17 ELEV. (m) 88.688
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm):	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: #2 SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, dark brown silty clay some gravel, trace sand	0 0.5 1	88.5 88			4						
		NO SAMPLES COLLECTED BETWEEN 1.5 TO 4.6 m bgs	1.5 2 2.5 3 3.5 4	87.5 87 86.5 86 85.5 85			5		100	40 ppm	PAHs		
		wet, brown SILTY SAND	4.5 5 5.5	84.5 84 83.5			6		90	<5 ppm			
			6	83			7		90	<5 ppm			
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 6-DEC-24
INPUT BY: BW	MONITORING DATE: 11-DEC-2024
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: BH112**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 5020320.692	EASTING (m): 440990.215 ELEV. (m) 88.687
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm):	WELL DIAMETER (cm): -	SCREEN SLOT #: - SAND TYPE: - SEALANT TYPE: -

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, dark brown silty clay trace sand, trace organics	0	88.5			1A		63	<5 ppm			
		FILL moist, light brown silty clay trace sand, trace gravel, trace asphalt	0.5 1	88 87.5			1B		63	<5 ppm	METALS, PAHs, BTEX, PHCs		
		FILL moist, grey silty clay and organics	1.5 2	87 86.5			2A		31	<5 ppm			
		moist to wet, light brown SANDY SILT	2.5	86			2B		-	<5 ppm			
		wet, light brown SAND	3				2C		-	<5 ppm			
			3.5	85.5 85			3A		-	<5 ppm			
		wet, light brown SILTY SAND	4	84.5			3B			<5 ppm			
		END OF BOREHOLE	4.5										

TERRAPEX

LOGGED BY: MK	DRILLING DATE: 22-NOV-2024
INPUT BY: BW	MONITORING DATE: -
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: BH113**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 5020353.504	EASTING (m): 440995.114 ELEV. (m) 88.668
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm):	WELL DIAMETER (cm): -	SCREEN SLOT #: - SAND TYPE: - SEALANT TYPE: -

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) 40 80 120 160 / N-VALUE (Blows/300mm) 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, dark brown silty clay trace sand, trace gravel	0 0.5 1 1.5	88.5 88 87.5			- 1		100 100	- 30 ppm	 PAHs		
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 06-DEC-2024
INPUT BY: BW	MONITORING DATE: -
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: CITY OF OTTAWA	PROJECT NO.: CO986.00	**RECORD OF: BH114**
ADDRESS: 40 BEECHCLIFFE STREET	STATION:	
CITY/PROVINCE: OTTAWA, ONTARIO	NORTHING (m): 5020351.241	EASTING (m): 440995.719 ELEV. (m) 88.699
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm):	WELL DIAMETER (cm): -	SCREEN SLOT #: - SAND TYPE: - SEALANT TYPE: -

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, dark brown silty clay trace sand, trace gravel	0	88.5			-		100	-			
			0.5	88									
			1	87.5			1		100	45 ppm	PAHs		
			1.5										
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 06-DEC-2024
INPUT BY: BW	MONITORING DATE: -
REVIEWED BY: GS	PAGE 1 OF 1

TP101 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0.0 – 0.5	SILTY SAND, TRACE CLAY AND GRAVEL (FILL) Brown	None	<5 ppm	TP101-1	0.5	
0.5 – 1.8	SILTY CLAY AND GRAVEL, TRACE SAND (FILL)	None	<5 ppm	TP101-2	1.0	
		None	<5 ppm	TP101-3	1.3	
		None	<5 ppm	TP101-4	1.6	
1.8 – 2.0	SILTY CLAY, TRACE SAND (NATIVE)	None	<5 ppm	TP101-5	1.9	

TP102 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.5	SILTY SAND, TRACE CLAY AND GRAVEL, METAL (FILL) Brown	None	<5 ppm	TP102-1	0.5	
0.5 – 1.4	SILTY CLAY, TRACE SAND, ASPHALT (FILL) Brown	None	<5 ppm	TP102-2	1.0	
		None	<5 ppm	TP102-3	1.4	
1.4 – 1.7	SILTY CLAY, TRACE ORGANICS AND ASPHALT (FILL) Red/Yellow, Brown	None	<5 ppm	TP102-4	1.7	
1.7 – 1.8	SILTY SAND (NATIVE) Brown, wet	None	<5 ppm	TP102-5	1.8	

TP103 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.5	SILTY SAND AND GRAVEL (FILL) Brown	None	<5 ppm	TP103-1	0.5	
0.5 – 1.0	SILTY SAND, TRACE CLAY AND GRAVEL, METAL (FILL) Brown	None	<5 ppm	TP103-2	1.0	PAH
1.0 – 1.5	SILTY CLAY, TRACE SAND AND PLASTIC, GRAVEL (FILL) Brown	None	<5 ppm	TP103-3	1.5	
1.5 – 1.6	SILTY SAND (Native) Grey, wet	None	<5 ppm	TP103-4	1.6	

TP104 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.5	SILTY SAND AND GRAVEL, TRACE CLAY (Fill) Brown. Large concrete blocks in Test pit	None	<5 ppm	TP104-1	0.5	
0.5 – 1.8	SILTY SAND AND GRAVEL (Fill) Brown, wet	None	<5 ppm	TP104-2	1.0	PAH (DUP sample ID: 104-12)
		None	<5 ppm	TP104-3	1.6	
1.8 – 2.1	SILTY CLAY (Native) Grey, wet	None	<5 ppm	TP104-4	2.1	

TP105 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.5	SILTY SAND AND GRAVEL (Fill) Brown	None	<5 ppm	TP105-1	0.5	
0.5 – 1.2	SILTY CLAY AND GRAVEL, TRACE SAND (Fill) Brown	None	<5 ppm	TP105-2	1.2	
1.2 – 1.5	SANDY SILT, TRACE CLAY AND GRAVEL (Fill) Brown	None	<5 ppm	TP105-3	1.5	
1.5 – 1.7	SILTY SAND (Native) Brown, moist	None	<5 ppm	TP105-4	1.7	

TP106 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.5	SAND AND GRAVEL, TRACE SILT (Fill) Brown	None	<5 ppm	TP106-1	0.5	
0.5 – 1.1	SAND coarse (Fill) Brown	None	<5 ppm	TP106-2	1.1	
1.1 – 1.5	SILTY CLAY AND GRAVEL (Fill) Brown, wet	None	<5 ppm	TP106-3	1.5	PAH
1.5 – 2.0	SILTY CLAY AND GRAVEL with ASPHALT (Fill) Brown, wet	None	<5 ppm	TP106-4	1.8	
2.0 – 2.2	SILTY CLAY, TRACE SAND (Native) Brown, wet	None	<5 ppm	TP106-5	2.2	

TP107 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.5	SILTY SAND AND GRAVEL (Fill) Brown	None	<5 ppm	TP107-1	0.5	
0.5 – 1.1	SILTY CLAY AND GRAVEL, TRACE BRICK (Fill) Red/Brown	None	<5 ppm	TP107-2	1.1	PAH (DUP sample ID: 107-12)
1.1 – 1.6	SILTY C:AY, TRACE GRAVEL (Fill) Brown, wet	None	<5 ppm	TP107-3	1.6	
1.6 – 1.8	SILTY CLAY (Native) Brown, moist	None	<5 ppm	TP107-4	1.8	PAH

TP108 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.8	SILTY SAND AND GRAVEL with ASPHALT (Fill) Brown	None	<5 ppm	TP108-1	0.8	
0.8 – 1.4	SILTY CLAY with GRAVEL AND ASPHALT (Fill) Brown	None	<5 ppm	TP108-2	1.2	PAH
1.4 – 1.7	SILTY SAND (Native) Brown, moist	None	<5 ppm	TP108-3	1.65	

TP109 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.5	SILTY CLAY AND GRAVEL (Fill) Brown	None	<5 ppm	TP109-1	0.5	PAH Concrete piping insulation found
0.5 – 1.7	SILTY CLAY, TRACE SAND AND GRAVEL (Fill) Brown	None	<5 ppm	TP109-2	1.1	
		None	<5 ppm	TP109-3	1.5	
		None	<5 ppm	TP109-4	1.7	
1.7 – 1.9	SILTY CLAY (Native) Brown	None	<5 ppm	TP109-5	1.9	

TP110 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.6	SILTY SAND AND GRAVEL, TRACE CLAY (Fill) Brown	None	<5 ppm	TP110-1	0.6	
0.6 – 1.1	SILTY CLAY AND GRAVEL (Fill) Brown, Concrete slabs found in TP	None	<5 ppm	TP110-2	1.1	PAH
1.1 – 1.7	SILTY CLAY AND GRAVEL, TRACE SAND (Fill) Brown	None	<5 ppm	TP110-3	1.7	
1.7 – 1.9	SILTY CLAY (Native) Brown, moist	None	<5 ppm	TP110-4	1.9	

TP111 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 1.1	SILTY CLAY AND GRAVEL (Fill) Brown	None	<5 ppm	TP111-1	0.6	
		None	<5 ppm	TP111-2	1.1	
1.1 – 1.4	SILTY CLAY AND TOPSOIL, TRACE GRAVEL (Fill) Black/brown	None	<5 ppm	TP111-3	1.4	PAH
1.4 – 1.6	SILTY CLAY (Native) Grey/black, moist	None	<5 ppm	TP111-4	1.6	

TP112 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.5	SAND AND GRAVEL, TRACE CLAY (Fill) Brown	None	<5 ppm	TP112-1	0.5	
0.5 – 1.2	SILTY CLAY AND TRACE GRAVEL (Fill) Brown	None	<5 ppm	TP112-2	1.0	
1.2 – 1.65	SILTY SAND (Native) Brown, moist	None	<5 ppm	TP112-3	1.65	

TP113 Date: January 15, 2025

Stratigraphy		Sample Data				
Depth (m)	Soil Description	Odours	CSV	I.D.	Depth (m)	Lab Analysis/ Comments
0 – 0.5	SILTY CLAY AND GRAVEL with WOOD DEBRIS (Fill) Brown	None	<5 ppm	TP113-1	0.5	
0.5 – 1.0	SILTY CLAY AND GRAVEL with WOOD DEBRIS AND METAL (Fill) Brown	None	<5 ppm	TP113-2	1.0	
						Refusal at 1.0 m

APPENDIX VI
LABORATORY CERTIFICATES OF ANALYSIS

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Certificate of Analysis

Terrapex Environmental Ltd. (Ottawa)
20 Gurdwara Rd. Unit #1
Ottawa, ON K2E 8B3
Attn: Greg Sabourin

Client PO:
Project: CO986.00/40 Beechcliffe Street
Custody:

Report Date: 21-Jan-2025
Order Date: 16-Jan-2025

Order #: 2503397

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2503397-01	TP103-2
2503397-02	TP103-4
2503397-03	TP104-2
2503397-04	TP106-3
2503397-05	TP107-2
2503397-06	TP107-12
2503397-07	TP108-2
2503397-08	TP110-2
2503397-09	TP107-4

Approved By:

Mark Foto, M.Sc.
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	17-Jan-25	19-Jan-25
Solids, %	CWS Tier 1 - Gravimetric	17-Jan-25	20-Jan-25

Certificate of Analysis

Report Date: 21-Jan-2025

Client: **Terrapex Environmental Ltd. (Ottawa)**

Order Date: 16-Jan-2025

Client PO:

Project Description: CO986.00/40 Beechcliffe Street

	Client ID:	TP103-2	TP103-4	TP104-2	TP106-3	-	-
	Sample Date:	15-Jan-25 09:10	15-Jan-25 09:30	15-Jan-25 09:40	15-Jan-25 10:45		
	Sample ID:	2503397-01	2503397-02	2503397-03	2503397-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	90.8	87.6	89.4	87.7	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Anthracene	0.02 ug/g	0.03	<0.02	<0.02	<0.02	-	-
Benzo [a] anthracene	0.02 ug/g	0.03	0.03	<0.02	<0.02	-	-
Benzo [a] pyrene	0.02 ug/g	0.03	0.03	<0.02	<0.02	-	-
Benzo [b] fluoranthene	0.02 ug/g	0.04	0.03	<0.02	<0.02	-	-
Benzo [g,h,i] perylene	0.02 ug/g	0.03	0.02	<0.02	<0.02	-	-
Benzo [k] fluoranthene	0.02 ug/g	0.02	0.02	<0.02	<0.02	-	-
Chrysene	0.02 ug/g	0.03	0.03	<0.02	<0.02	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Fluoranthene	0.02 ug/g	0.10	0.08	0.06	0.04	-	-
Fluorene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	<0.04	<0.04	<0.04	-	-
Naphthalene	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Phenanthrene	0.02 ug/g	0.07	0.04	0.03	<0.02	-	-
Pyrene	0.02 ug/g	0.08	0.07	0.05	0.04	-	-
2-Fluorobiphenyl	Surrogate	53.2%	66.7%	65.1%	53.3%	-	-
Terphenyl-d14	Surrogate	70.6%	89.0%	88.3%	74.1%	-	-

	Client ID:	TP107-2	TP107-12	TP108-2	TP110-2	-	-
	Sample Date:	15-Jan-25 11:10	15-Jan-25 11:10	15-Jan-25 11:40	15-Jan-25 12:40		
	Sample ID:	2503397-05	2503397-06	2503397-07	2503397-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	86.4	86.6	85.2	87.9	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	0.03	0.57	<0.02	0.04	-	-
Acenaphthylene	0.02 ug/g	0.15	0.48	0.15	0.07	-	-
Anthracene	0.02 ug/g	0.24	1.95	0.18	0.16	-	-
Benzo [a] anthracene	0.02 ug/g	0.52	1.66	0.27	0.20	-	-
Benzo [a] pyrene	0.02 ug/g	0.47	1.26	0.29	0.18	-	-
Benzo [b] fluoranthene	0.02 ug/g	0.47	1.37	0.31	0.19	-	-
Benzo [g,h,i] perylene	0.02 ug/g	0.29	0.76	0.18	0.11	-	-
Benzo [k] fluoranthene	0.02 ug/g	0.31	0.88	0.20	0.11	-	-
Chrysene	0.02 ug/g	0.48	1.69	0.26	0.21	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	0.08	0.21	0.05	0.03	-	-
Fluoranthene	0.02 ug/g	1.40	7.09	0.72	0.64	-	-
Fluorene	0.02 ug/g	0.03	0.93	<0.02	0.06	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.29	0.83	0.18	0.11	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	0.17	<0.02	<0.02	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	0.20	<0.02	<0.02	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	0.37	<0.04	<0.04	-	-
Naphthalene	0.01 ug/g	<0.01	0.22	<0.01	0.04	-	-
Phenanthrene	0.02 ug/g	0.52	7.44	0.27	0.54	-	-
Pyrene	0.02 ug/g	1.20	4.97	0.61	0.51	-	-
2-Fluorobiphenyl	Surrogate	59.4%	62.3%	56.6%	55.0%	-	-
Terphenyl-d14	Surrogate	80.0%	88.0%	79.0%	81.1%	-	-

	Client ID:	TP107-4				-	-
	Sample Date:	15-Jan-25 11:30					
	Sample ID:	2503397-09					
	Matrix:	Soil					
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	85.2	-	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	-	-	-	-
Acenaphthylene	0.02 ug/g	<0.02	-	-	-	-	-
Anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Chrysene	0.02 ug/g	<0.02	-	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Fluoranthene	0.02 ug/g	0.04	-	-	-	-	-
Fluorene	0.02 ug/g	<0.02	-	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	-	-	-	-
Naphthalene	0.01 ug/g	<0.01	-	-	-	-	-
Phenanthrene	0.02 ug/g	<0.02	-	-	-	-	-
Pyrene	0.02 ug/g	0.04	-	-	-	-	-
2-Fluorobiphenyl	Surrogate	57.5%	-	-	-	-	-
Terphenyl-d14	Surrogate	88.3%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.853*		*%*	*64.0*	*50-140*			
Surrogate: Terphenyl-d14	*1.11*		*%*	*83.3*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Physical Characteristics									
% Solids	87.5	0.1	% by Wt.	87.6			0.2	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	0.021	0.02	ug/g	0.023			9.0	40	
Benzo [a] anthracene	0.030	0.02	ug/g	0.037			21.0	40	
Benzo [a] pyrene	0.023	0.02	ug/g	0.029			22.0	40	
Benzo [b] fluoranthene	0.027	0.02	ug/g	0.037			29.1	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	0.025			NC	40	
Chrysene	0.033	0.02	ug/g	0.035			7.3	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	0.087	0.02	ug/g	0.093			6.2	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	0.045	0.02	ug/g	0.052			14.6	40	
Pyrene	0.070	0.02	ug/g	0.076			8.4	40	
Surrogate: 2-Fluorobiphenyl	*0.813*		*%*		*54.6*	*50-140*			
Surrogate: Terphenyl-d14	*1.11*		*%*		*74.7*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles									
Acenaphthene	0.165	0.02	ug/g	ND	88.9	50-140			
Acenaphthylene	0.167	0.02	ug/g	ND	89.8	50-140			
Anthracene	0.190	0.02	ug/g	0.023	89.5	50-140			
Benzo [a] anthracene	0.143	0.02	ug/g	0.037	57.2	50-140			
Benzo [a] pyrene	0.127	0.02	ug/g	0.029	52.7	50-140			
Benzo [b] fluoranthene	0.149	0.02	ug/g	0.037	60.3	50-140			
Benzo [g,h,i] perylene	0.146	0.02	ug/g	ND	78.4	50-140			
Benzo [k] fluoranthene	0.154	0.02	ug/g	0.025	69.2	50-140			
Chrysene	0.188	0.02	ug/g	0.035	82.1	50-140			
Dibenzo [a,h] anthracene	0.130	0.02	ug/g	ND	69.7	50-140			
Fluoranthene	0.244	0.02	ug/g	0.093	81.7	50-140			
Fluorene	0.164	0.02	ug/g	ND	88.4	50-140			
Indeno [1,2,3-cd] pyrene	0.147	0.02	ug/g	ND	79.3	50-140			
1-Methylnaphthalene	0.146	0.02	ug/g	ND	78.6	50-140			
2-Methylnaphthalene	0.156	0.02	ug/g	ND	84.1	50-140			
Naphthalene	0.176	0.01	ug/g	ND	94.4	50-140			
Phenanthrene	0.228	0.02	ug/g	0.052	94.8	50-140			
Pyrene	0.236	0.02	ug/g	0.076	85.9	50-140			
Surrogate: 2-Fluorobiphenyl	*0.886*		*%*		*59.5*	*50-140*			
Surrogate: Terphenyl-d14	*1.18*		*%*		*79.1*	*50-140*			

Qualifier Notes:

Login Qualifiers :

Container and COC sample IDs don't match. Report includes container IDs as directed by client. - Sample is labelled TP107-2; chain of custody reads TPP107-2.

Applies to Samples: TP107-2

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

PARACEL LABORATORIES LTD.

Paracel ID: 2503397

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2503397	

Client Name: Terrapex Environmental Ltd.	Project Ref: CO986.00	Page 1 of 1	
Contact Name: Greg Sabourin	Quote #: QO945.03	Turnaround Time	
Address: 20 Gurdwara Road Ottawa ON	PO #: City of Ottawa	☐ 1 day ☐ 3 day	
	E-mail: G.sabourin@terrapex.com	☐ 2 day ☑ Regular	
Telephone: 613-558-7571		Date Required:	

☐ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☑ Med/Fine
☐ Table 2 ☑ Res/Park ☐ Coarse
☑ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☑ Yes ☐ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun: ___
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name		Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)					
1	TP103-2	BNK354	S	-	1	-	Jan 15	9:10			X									
2	TP103-4	355	S	-	1	-	Jan 15	9:30			X									
3	TP104-2	356	S	-	1	-	Jan 15	9:40			X									
4	TP106-3	357	S	-	1	-	Jan 15	10:45			X									
5	TP107-2	358	S	-	1	-	Jan 15	11:10			X									
6	TP107-12	359	S	-	1	-	Jan 15	11:30			X									
7	TP108-2	360	S	-	1	-	Jan 15	11:40			X									
8	TP110-2	361	S	-	1	-	Jan 15	12:40			X									
9	TP107-4	362	S	-	1	-	Jan 15	11:30			X									
10																				

Comments: City of Ottawa Project, Vahid Arasteh City Project Manager. 40 Beechcliffe Street Ottawa ON

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot:	Received at Lab: JM	Verified By: JM
Relinquished By (Print): Greg Sabourin	Date/Time:	Date/Time: Jan 16-25 1634	Date/Time: Jan 17-25 944
Date/Time: 15 JAN 25 16:33	Temperature: °C	Temperature: 4.6	pH Verified: ☐ By:

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Certificate of Analysis

Terrapex Environmental Ltd. (Ottawa)
20 Gurdwara Rd. Unit #1
Ottawa, ON K2E 8B3
Attn: Greg Sabourin

Client PO:
Project: CO986.00/40 Beechcliffe Street
Custody:

Report Date: 27-Jan-2025
Order Date: 16-Jan-2025

Order #: 2503399

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2503399-06	TP109-1
2503399-08	TP111-3

Approved By:

Mark Foto, M.Sc.
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	24-Jan-25	25-Jan-25
Solids, %	CWS Tier 1 - Gravimetric	22-Jan-25	23-Jan-25

Certificate of Analysis

Report Date: 27-Jan-2025

Client: **Terrapex Environmental Ltd. (Ottawa)**

Order Date: 16-Jan-2025

Client PO:

Project Description: CO986.00/40 Beechcliffe Street

	Client ID:	TP109-1	TP111-3	-	-	-	-
	Sample Date:	15-Jan-25 12:00	15-Jan-25 13:15	-	-		
	Sample ID:	2503399-06	2503399-08	-	-		
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	87.3	78.3	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	0.04	<0.02	-	-	-	-
Acenaphthylene	0.02 ug/g	0.32	<0.02	-	-	-	-
Anthracene	0.02 ug/g	0.33	0.04	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	0.81	0.23	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	0.89	0.20	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	0.84	0.20	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	0.46	0.11	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	0.49	0.12	-	-	-	-
Chrysene	0.02 ug/g	0.69	0.15	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	0.11	0.02	-	-	-	-
Fluoranthene	0.02 ug/g	1.56	0.31	-	-	-	-
Fluorene	0.02 ug/g	0.06	<0.02	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.40	0.09	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	<0.04	-	-	-	-
Naphthalene	0.01 ug/g	0.03	<0.01	-	-	-	-
Phenanthrene	0.02 ug/g	0.79	0.08	-	-	-	-
Pyrene	0.02 ug/g	1.30	0.27	-	-	-	-
2-Fluorobiphenyl	Surrogate	72.8%	78.2%	-	-	-	-
Terphenyl-d14	Surrogate	65.1%	66.3%	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*1.05*		*%*	*78.8*	*50-140*			
Surrogate: Terphenyl-d14	*0.946*		*%*	*70.9*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Physical Characteristics									
% Solids	80.7	0.1	% by Wt.	80.8			0.1	25	
Semi-Volatiles									
Acenaphthene	0.028	0.02	ug/g	0.036			24.5	40	
Acenaphthylene	0.278	0.02	ug/g	0.318			13.6	40	
Anthracene	0.325	0.02	ug/g	0.331			1.9	40	
Benzo [a] anthracene	0.748	0.02	ug/g	0.813			8.3	40	
Benzo [a] pyrene	0.862	0.02	ug/g	0.894			3.6	40	
Benzo [b] fluoranthene	1.21	0.02	ug/g	0.838			36.4	40	
Benzo [g,h,i] perylene	0.460	0.02	ug/g	0.463			0.6	40	
Benzo [k] fluoranthene	0.617	0.02	ug/g	0.486			23.9	40	
Chrysene	0.672	0.02	ug/g	0.686			2.0	40	
Dibenzo [a,h] anthracene	0.104	0.02	ug/g	0.109			5.4	40	
Fluoranthene	1.62	0.02	ug/g	1.56			3.6	40	
Fluorene	0.063	0.02	ug/g	0.063			0.0	40	
Indeno [1,2,3-cd] pyrene	0.381	0.02	ug/g	0.404			5.7	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	0.019	0.01	ug/g	0.025			31.1	40	
Phenanthrene	0.720	0.02	ug/g	0.787			8.9	40	
Pyrene	1.33	0.02	ug/g	1.30			2.2	40	
Surrogate: 2-Fluorobiphenyl	*1.12*		*%*		*73.3*	*50-140*			
Surrogate: Terphenyl-d14	*1.05*		*%*		*69.1*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles									
Acenaphthene	0.231	0.02	ug/g	0.036	102	50-140			
Acenaphthylene	0.142	0.02	ug/g	ND	85.1	50-140			
Anthracene	0.125	0.02	ug/g	ND	75.2	50-140			
Benzo [a] anthracene	0.117	0.02	ug/g	ND	70.4	50-140			
Benzo [a] pyrene	0.114	0.02	ug/g	ND	68.7	50-140			
Benzo [b] fluoranthene	0.120	0.02	ug/g	ND	72.1	50-140			
Benzo [g,h,i] perylene	0.101	0.02	ug/g	ND	60.5	50-140			
Benzo [k] fluoranthene	0.098	0.02	ug/g	ND	58.9	50-140			
Chrysene	0.139	0.02	ug/g	ND	83.6	50-140			
Dibenzo [a,h] anthracene	0.096	0.02	ug/g	ND	57.6	50-140			
Fluoranthene	0.130	0.02	ug/g	ND	78.0	50-140			
Fluorene	0.283	0.02	ug/g	0.063	115	50-140			
Indeno [1,2,3-cd] pyrene	0.092	0.02	ug/g	ND	55.1	50-140			
1-Methylnaphthalene	0.207	0.02	ug/g	ND	109	50-140			
2-Methylnaphthalene	0.223	0.02	ug/g	ND	117	50-140			
Naphthalene	0.268	0.01	ug/g	0.025	127	50-140			
Phenanthrene	0.158	0.02	ug/g	ND	94.7	50-140			
Pyrene	0.129	0.02	ug/g	ND	77.6	50-140			
Surrogate: 2-Fluorobiphenyl	*1.21*		*%*		*79.6*	*50-140*			
Surrogate: Terphenyl-d14	*1.06*		*%*		*69.1*	*50-140*			

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

PARACEL LABORATORIES LTD.

Paracel ID: 2503399

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2503399	

Client Name:	Terrapex Environmental Ltd.	Project Ref:	CO986.00
Contact Name:	Greg Sabourin	Quote #:	QO945.03
Address:	20 Gurdwara Road Ottawa ON	PO #:	City of Ottawa
Telephone:	613-558-7571	E-mail:	G.sabourin@terrapex.com

Page __ of __

Turnaround Time

☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required: _____

☐ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☒ Med/Fine
☐ Table 2 ☒ Res/Park ☐ Coarse
☒ Table 3 ☐ Ind/Comm
☐ Table ___
For RSC: ☒ Yes ☐ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU - Storm
Mun: _____
☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name		Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	PAHs (Hold)			
1	TP101-1	BNK363	S	-	1	-	Jan 15	8:00								X			
2	TP101-5	364	S	-	1	-	Jan 15	8:20								X			
3	TP102-2	365	S	-	1	-	Jan 15	8:40								X			
4	TP105-2	366	S	-	1	-	Jan 15	10:10								X			
5	TP105-12	367	S	-	1	-	Jan 15	10:10								X			
6	TP109-1	368	S	-	1	-	Jan 15	12:06								X			
7	TP109-5	369	S	-	1	-	Jan 15	12:30								X			
8	TP111-3	370	S	-	1	-	Jan 15	13:15								X			
9	TP112-2	371	S	-	1	-	Jan 15	13:40								X			
10	TP113-2	372	S	-	1	-	Jan 15	14:20								X			

Comments: City of Ottawa Project, Vahid Arasteh City Project Manager. 40 Beechcliffe Street Ottawa ON
Samples to be Placed on Hold

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot:	Received at Lab: JM	Verified By: JM
Relinquished By (Print): Greg Sabourin	Date/Time:	Date/Time: Jan 16-25 1633	Date/Time: Jan 17-25 957
Date/Time: Jan 15, 2025 16:38	Temperature: °C	Temperature: 2.5	pH Verified: ☐ By:

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Certificate of Analysis

Terrapex Environmental Ltd. (Ottawa)
20 Gurdwara Rd. Unit #1
Ottawa, ON K2E 8B3
Attn: Greg Sabourin

Report Date: 12-Dec-2024
Order Date: 25-Nov-2024

Client PO:
Project: CO986.00/40 Beechcliffe Street
Custody: 145885, 145887

Revised Report

Order #: 2448154

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2448154-01	BH107-1B
2448154-02	MW107-3A
2448154-03	BH108-1A
2448154-04	MW109-2A
2448154-05	MW109-1A
2448154-06	MW109-3A
2448154-07	MW110-1A
2448154-08	MW111-2C
2448154-09	MW111-2D
2448154-10	MW110-1D
2448154-11	BH112-1B
2448154-12	Methanol Blank
2448154-13	MW111-1B

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	28-Nov-24	28-Nov-24
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	29-Nov-24	30-Nov-24
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	27-Nov-24	27-Nov-24
Conductivity	MOE E3138 - probe @25 °C, water ext	28-Nov-24	28-Nov-24
Cyanide, free	MOE E3015 - Auto Colour, water extraction	27-Nov-24	27-Nov-24
Mercury by CVAA	EPA 7471B - CVAA, digestion	28-Nov-24	28-Nov-24
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	27-Nov-24	27-Nov-24
PHC F1	CWS Tier 1 - P&T GC-FID	29-Nov-24	30-Nov-24
PHC F4G (gravimetric)	CWS Tier 1 - Extraction Gravimetric	28-Nov-24	29-Nov-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	27-Nov-24	29-Nov-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	28-Nov-24	28-Nov-24
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	28-Nov-24	28-Nov-24
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	29-Nov-24	30-Nov-24
SAR	Calculated	28-Nov-24	28-Nov-24
Solids, %	CWS Tier 1 - Gravimetric	29-Nov-24	2-Dec-24
Texture - Coarse Med/Fine	Based on ASTM D2487	27-Nov-24	29-Nov-24

	Client ID:	BH107-1B	MW107-3A	BH108-1A	MW109-2A	-	-
	Sample Date:	21-Nov-24 14:05	21-Nov-24 14:40	21-Nov-24 14:55	22-Nov-24 08:20		
	Sample ID:	2448154-01	2448154-02	2448154-03	2448154-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	86.9	74.8	84.3	82.8	-	-
>75 um	0.1 %	-	-	47.6	-	-	-
<75 um	0.1 %	-	-	52.4	-	-	-
Texture	0.1 %	-	-	Med/Fine	-	-	-
General Inorganics							
SAR	0.01 N/A	0.08	-	0.08	-	-	-
Conductivity	5 uS/cm	158	-	169	-	-	-
Cyanide, free	0.03 ug/g	<0.03	-	<0.03	-	-	-
pH	0.05 pH Units	7.50	-	7.35	-	-	-
Metals							
Antimony	1.0 ug/g	<1.0	-	<1.0	-	-	-
Arsenic	1.0 ug/g	2.6	-	2.5	-	-	-
Barium	1.0 ug/g	137	-	116	-	-	-
Beryllium	0.5 ug/g	<0.5	-	<0.5	-	-	-
Boron	5.0 ug/g	6.9	-	5.7	-	-	-
Boron, available	0.5 ug/g	<0.5	-	<0.5	-	-	-
Cadmium	0.5 ug/g	<0.5	-	<0.5	-	-	-
Chromium (VI)	0.2 ug/g	<0.2	-	<0.2	-	-	-
Chromium	5.0 ug/g	24.9	-	28.1	-	-	-
Cobalt	1.0 ug/g	7.2	-	7.4	-	-	-
Copper	5.0 ug/g	25.3	-	25.1	-	-	-
Lead	1.0 ug/g	14.7	-	12.8	-	-	-
Mercury	0.1 ug/g	<0.1	-	<0.1	-	-	-
Molybdenum	1.0 ug/g	<1.0	-	<1.0	-	-	-
Nickel	5.0 ug/g	16.2	-	16.6	-	-	-

	Client ID:	BH107-1B	MW107-3A	BH108-1A	MW109-2A	-	-
	Sample Date:	21-Nov-24 14:05	21-Nov-24 14:40	21-Nov-24 14:55	22-Nov-24 08:20		
	Sample ID:	2448154-01	2448154-02	2448154-03	2448154-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Selenium	1.0 ug/g	<1.0	-	<1.0	-	-	-
Silver	0.3 ug/g	<0.3	-	<0.3	-	-	-
Thallium	1.0 ug/g	<1.0	-	<1.0	-	-	-
Uranium	1.0 ug/g	<1.0	-	<1.0	-	-	-
Vanadium	10.0 ug/g	28.0	-	33.6	-	-	-
Zinc	20.0 ug/g	40.2	-	46.9	-	-	-
Volatiles							
Acetone	0.50 ug/g	-	<0.50	-	-	-	-
Benzene	0.02 ug/g	-	<0.02	-	-	-	-
Bromodichloromethane	0.05 ug/g	-	<0.05	-	-	-	-
Bromoform	0.05 ug/g	-	<0.05	-	-	-	-
Bromomethane	0.05 ug/g	-	<0.05	-	-	-	-
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	-	-	-
Chlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
Chloroform	0.05 ug/g	-	<0.05	-	-	-	-
Dibromochloromethane	0.05 ug/g	-	<0.05	-	-	-	-
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	-	-	-
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	-	-	-
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-

	Client ID:	BH107-1B	MW107-3A	BH108-1A	MW109-2A	-	-
	Sample Date:	21-Nov-24 14:05	21-Nov-24 14:40	21-Nov-24 14:55	22-Nov-24 08:20		
	Sample ID:	2448154-01	2448154-02	2448154-03	2448154-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	-	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	-	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	-	<0.05	-	-	-	-
Ethylbenzene	0.05 ug/g	-	<0.05	-	-	-	-
Hexane	0.05 ug/g	-	<0.05	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	-	-	-
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	-	-	-
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	-	-	-
Methylene Chloride	0.05 ug/g	-	<0.05	-	-	-	-
Styrene	0.05 ug/g	-	<0.05	-	-	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	-	-	-
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
Toluene	0.05 ug/g	-	<0.05	-	-	-	-
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	-	-	-
Trichloroethylene	0.05 ug/g	-	<0.05	-	-	-	-
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	-	-	-
Vinyl chloride	0.02 ug/g	-	<0.02	-	-	-	-
m,p-Xylenes	0.05 ug/g	-	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	-	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	-	<0.05	-	-	-	-
Dibromofluoromethane	Surrogate	-	104%	-	-	-	-

	Client ID:	BH107-1B	MW107-3A	BH108-1A	MW109-2A	-	-
	Sample Date:	21-Nov-24 14:05	21-Nov-24 14:40	21-Nov-24 14:55	22-Nov-24 08:20		
	Sample ID:	2448154-01	2448154-02	2448154-03	2448154-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Toluene-d8	Surrogate	-	119%	-	-	-	-
4-Bromofluorobenzene	Surrogate	-	114%	-	-	-	-
Benzene	0.02 ug/g	<0.02	-	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	-	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	-	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	-	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	-	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	-	<0.05	<0.05	-	-
Toluene-d8	Surrogate	109%	-	112%	114%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	103	<8	35	29	-	-
F4 PHCs (C34-C50)	6 ug/g	376 [1]	<6	85	128 [1]	-	-
F4G PHCs (gravimetric)	50 ug/g	1250	-	-	520	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Acenaphthylene	0.02 ug/g	0.03	-	0.03	-	-	-
Anthracene	0.02 ug/g	<0.02	-	0.04	-	-	-
Benzo [a] anthracene	0.02 ug/g	<0.02	-	0.06	-	-	-
Benzo [a] pyrene	0.02 ug/g	0.03	-	0.10	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	0.02	-	0.08	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	0.02	-	0.08	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	0.05	-	-	-
Chrysene	0.02 ug/g	<0.02	-	0.07	-	-	-

	Client ID:	BH107-1B	MW107-3A	BH108-1A	MW109-2A	-	-
	Sample Date:	21-Nov-24 14:05	21-Nov-24 14:40	21-Nov-24 14:55	22-Nov-24 08:20		
	Sample ID:	2448154-01	2448154-02	2448154-03	2448154-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Fluoranthene	0.02 ug/g	0.06	-	0.15	-	-	-
Fluorene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	0.06	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	<0.04	-	-	-
Naphthalene	0.01 ug/g	<0.01	-	0.01	-	-	-
Phenanthrene	0.02 ug/g	0.05	-	0.09	-	-	-
Pyrene	0.02 ug/g	0.07	-	0.13	-	-	-
2-Fluorobiphenyl	Surrogate	53.0%	-	53.1%	-	-	-
Terphenyl-d14	Surrogate	65.5%	-	67.2%	-	-	-

	Client ID:	MW109-1A	MW109-3A	MW110-1A	MW111-2C	-	-
	Sample Date:	22-Nov-24 08:05	22-Nov-24 08:55	22-Nov-24 09:05	22-Nov-24 10:40		
	Sample ID:	2448154-05	2448154-06	2448154-07	2448154-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	87.3	68.0	83.8	70.5	-	-
>75 um	0.1 %	-	4.0	-	-	-	-
<75 um	0.1 %	-	96.0	-	-	-	-
Texture	0.1 %	-	Med/Fine	-	-	-	-
General Inorganics							
SAR	0.01 N/A	0.08	-	0.10	-	-	-
Conductivity	5 uS/cm	220	-	195	-	-	-
Cyanide, free	0.03 ug/g	<0.03	-	<0.03	-	-	-
pH	0.05 pH Units	7.37	7.38	7.41	-	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	2.3	2.3	2.2	2.5	-	-
Barium	1.0 ug/g	124	180	107	306	-	-
Beryllium	0.5 ug/g	<0.5	<0.5	<0.5	0.7	-	-
Boron	5.0 ug/g	5.4	<5.0	<5.0	5.9	-	-
Boron, available	0.5 ug/g	<0.5	-	<0.5	-	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	31.1	39.6	25.6	62.0	-	-
Chromium (VI)	0.2 ug/g	<0.2	-	<0.2	-	-	-
Cobalt	1.0 ug/g	8.1	9.6	6.9	14.6	-	-
Copper	5.0 ug/g	25.6	23.2	18.9	32.9	-	-
Lead	1.0 ug/g	11.4	3.5	6.3	5.2	-	-
Mercury	0.1 ug/g	<0.1	-	<0.1	-	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Nickel	5.0 ug/g	20.4	21.7	14.7	35.5	-	-

	Client ID:	MW109-1A	MW109-3A	MW110-1A	MW111-2C	-	-
	Sample Date:	22-Nov-24 08:05	22-Nov-24 08:55	22-Nov-24 09:05	22-Nov-24 10:40		
	Sample ID:	2448154-05	2448154-06	2448154-07	2448154-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	1.1	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	37.3	48.2	34.5	65.4	-	-
Zinc	20.0 ug/g	53.6	48.0	38.3	78.6	-	-
Volatiles							
Acetone	0.50 ug/g	-	<0.50	-	<0.50	-	-
Benzene	0.02 ug/g	-	<0.02	-	<0.02	-	-
Bromodichloromethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Bromoform	0.05 ug/g	-	<0.05	-	<0.05	-	-
Bromomethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	<0.05	-	-
Chlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Chloroform	0.05 ug/g	-	<0.05	-	<0.05	-	-
Dibromochloromethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-

	Client ID:	MW109-1A	MW109-3A	MW110-1A	MW111-2C	-	-
	Sample Date:	22-Nov-24 08:05	22-Nov-24 08:55	22-Nov-24 09:05	22-Nov-24 10:40		
	Sample ID:	2448154-05	2448154-06	2448154-07	2448154-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	<0.05	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	<0.05	-	-
Ethylbenzene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	-	<0.05	-	<0.05	-	-
Hexane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	<0.05	-	-
Methylene Chloride	0.05 ug/g	-	<0.05	-	<0.05	-	-
Styrene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Toluene	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Trichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	<0.05	-	-
Vinyl chloride	0.02 ug/g	-	<0.02	-	<0.02	-	-
m,p-Xylenes	0.05 ug/g	-	<0.05	-	<0.05	-	-
o-Xylene	0.05 ug/g	-	<0.05	-	<0.05	-	-
Xylenes, total	0.05 ug/g	-	<0.05	-	<0.05	-	-
4-Bromofluorobenzene	Surrogate	-	118%	-	115%	-	-

	Client ID:	MW109-1A	MW109-3A	MW110-1A	MW111-2C	-	-
	Sample Date:	22-Nov-24 08:05	22-Nov-24 08:55	22-Nov-24 09:05	22-Nov-24 10:40		
	Sample ID:	2448154-05	2448154-06	2448154-07	2448154-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Toluene-d8	Surrogate	-	121%	-	119%	-	-
Dibromofluoromethane	Surrogate	-	107%	-	106%	-	-
Benzene	0.02 ug/g	-	-	<0.02	-	-	-
Ethylbenzene	0.05 ug/g	-	-	<0.05	-	-	-
Toluene	0.05 ug/g	-	-	<0.05	-	-	-
m,p-Xylenes	0.05 ug/g	-	-	<0.05	-	-	-
o-Xylene	0.05 ug/g	-	-	<0.05	-	-	-
Xylenes, total	0.05 ug/g	-	-	<0.05	-	-	-
Toluene-d8	Surrogate	-	-	113%	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	-	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	-	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	-	<8	<8	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	-	<6	<6	<6	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	<0.02	<0.02	-	-
Acenaphthylene	0.02 ug/g	<0.02	-	<0.02	<0.02	-	-
Anthracene	0.02 ug/g	0.03	-	<0.02	<0.02	-	-
Benzo [a] anthracene	0.02 ug/g	0.05	-	<0.02	<0.02	-	-
Benzo [a] pyrene	0.02 ug/g	0.07	-	0.03	<0.02	-	-
Benzo [b] fluoranthene	0.02 ug/g	0.05	-	0.02	<0.02	-	-
Benzo [g,h,i] perylene	0.02 ug/g	0.06	-	<0.02	<0.02	-	-
Benzo [k] fluoranthene	0.02 ug/g	0.03	-	<0.02	<0.02	-	-
Chrysene	0.02 ug/g	0.06	-	<0.02	<0.02	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	<0.02	<0.02	-	-

	Client ID:	MW109-1A	MW109-3A	MW110-1A	MW111-2C	-	-
	Sample Date:	22-Nov-24 08:05	22-Nov-24 08:55	22-Nov-24 09:05	22-Nov-24 10:40		
	Sample ID:	2448154-05	2448154-06	2448154-07	2448154-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
Fluoranthene	0.02 ug/g	0.16	-	0.05	<0.02	-	-
Fluorene	0.02 ug/g	<0.02	-	<0.02	<0.02	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.04	-	<0.02	<0.02	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	<0.02	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	<0.02	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	<0.04	<0.04	-	-
Naphthalene	0.01 ug/g	<0.01	-	<0.01	<0.01	-	-
Phenanthrene	0.02 ug/g	0.13	-	<0.02	<0.02	-	-
Pyrene	0.02 ug/g	0.14	-	0.05	<0.02	-	-
2-Fluorobiphenyl	Surrogate	50.9%	-	61.0%	66.6%	-	-
Terphenyl-d14	Surrogate	73.2%	-	95.1%	91.3%	-	-

	Client ID:	MW111-2D	MW110-1D	BH112-1B	Methanol Blank	-	-
	Sample Date:	22-Nov-24 10:40	22-Nov-24 09:05	22-Nov-24 10:50	25-Nov-24 12:30		
	Sample ID:	2448154-09	2448154-10	2448154-11	2448154-12		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	70.2	87.7	86.8	100	-	-
General Inorganics							
SAR	0.01 N/A	-	0.09	0.09	-	-	-
Conductivity	5 uS/cm	-	158	161	-	-	-
Cyanide, free	0.03 ug/g	-	<0.03	<0.03	-	-	-
pH	0.05 pH Units	-	7.37	7.47	-	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	-	-	-
Arsenic	1.0 ug/g	2.7	2.3	3.0	-	-	-
Barium	1.0 ug/g	280	126	228	-	-	-
Beryllium	0.5 ug/g	0.6	<0.5	0.6	-	-	-
Boron, available	0.5 ug/g	-	<0.5	<0.5	-	-	-
Boron	5.0 ug/g	5.9	<5.0	7.3	-	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	-	-	-
Chromium (VI)	0.2 ug/g	-	<0.2	<0.2	-	-	-
Chromium	5.0 ug/g	57.1	26.4	37.7	-	-	-
Cobalt	1.0 ug/g	13.8	6.9	10.8	-	-	-
Copper	5.0 ug/g	30.7	18.9	30.6	-	-	-
Lead	1.0 ug/g	4.9	5.6	17.5	-	-	-
Mercury	0.1 ug/g	-	<0.1	<0.1	-	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	<1.0	-	-	-
Nickel	5.0 ug/g	32.1	15.8	24.2	-	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	-	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	-	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	-	-	-

Certificate of Analysis

Report Date: 12-Dec-2024

Client: **Terrapex Environmental Ltd. (Ottawa)**

Order Date: 25-Nov-2024

Client PO:

Project Description: CO986.00/40 Beechcliffe Street

	Client ID:	MW111-2D	MW110-1D	BH112-1B	Methanol Blank	-	-
	Sample Date:	22-Nov-24 10:40	22-Nov-24 09:05	22-Nov-24 10:50	25-Nov-24 12:30		
	Sample ID:	2448154-09	2448154-10	2448154-11	2448154-12		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	<1.0	<1.0	<1.0	-	-	-
Vanadium	10.0 ug/g	60.7	33.6	47.1	-	-	-
Zinc	20.0 ug/g	73.2	36.5	62.3	-	-	-
Volatiles							
Acetone	0.50 ug/g	<0.50	-	-	<0.50	-	-
Benzene	0.02 ug/g	<0.02	-	-	<0.02	-	-
Bromodichloromethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
Bromoform	0.05 ug/g	<0.05	-	-	<0.05	-	-
Bromomethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
Carbon Tetrachloride	0.05 ug/g	<0.05	-	-	<0.05	-	-
Chlorobenzene	0.05 ug/g	<0.05	-	-	<0.05	-	-
Chloroform	0.05 ug/g	<0.05	-	-	<0.05	-	-
Dibromochloromethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,1-Dichloroethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,2-Dichloroethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	-	-	<0.05	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	<0.05	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,2-Dichloropropane	0.05 ug/g	<0.05	-	-	<0.05	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	<0.05	-	-

	Client ID:	MW111-2D	MW110-1D	BH112-1B	Methanol Blank	-	-
	Sample Date:	22-Nov-24 10:40	22-Nov-24 09:05	22-Nov-24 10:50	25-Nov-24 12:30		
	Sample ID:	2448154-09	2448154-10	2448154-11	2448154-12		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
1,3-Dichloropropene, total	0.05 ug/g	<0.05	-	-	<0.05	-	-
Ethylbenzene	0.05 ug/g	<0.05	-	-	<0.05	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	-	-	<0.05	-	-
Hexane	0.05 ug/g	<0.05	-	-	<0.05	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	-	-	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	-	-	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	-	-	<0.05	-	-
Methylene Chloride	0.05 ug/g	<0.05	-	-	<0.05	-	-
Styrene	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
Tetrachloroethylene	0.05 ug/g	<0.05	-	-	<0.05	-	-
Toluene	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
Trichloroethylene	0.05 ug/g	<0.05	-	-	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g	<0.05	-	-	<0.05	-	-
Vinyl chloride	0.02 ug/g	<0.02	-	-	<0.02	-	-
m,p-Xylenes	0.05 ug/g	<0.05	-	-	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	<0.05	-	-
4-Bromofluorobenzene	Surrogate	114%	-	-	98.9%	-	-
Toluene-d8	Surrogate	119%	-	-	102%	-	-
Dibromofluoromethane	Surrogate	107%	-	-	89.6%	-	-
Benzene	0.02 ug/g	-	-	<0.02	-	-	-

	Client ID:	MW111-2D	MW110-1D	BH112-1B	Methanol Blank	-	-
	Sample Date:	22-Nov-24 10:40	22-Nov-24 09:05	22-Nov-24 10:50	25-Nov-24 12:30		
	Sample ID:	2448154-09	2448154-10	2448154-11	2448154-12		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Ethylbenzene	0.05 ug/g	-	-	<0.05	-	-	-
Toluene	0.05 ug/g	-	-	<0.05	-	-	-
m,p-Xylenes	0.05 ug/g	-	-	<0.05	-	-	-
o-Xylene	0.05 ug/g	-	-	<0.05	-	-	-
Xylenes, total	0.05 ug/g	-	-	<0.05	-	-	-
Toluene-d8	Surrogate	-	-	108%	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	-	<4	-	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	-	25	-	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	-	30	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	-	<0.02	<0.02	-	-	-
Acenaphthylene	0.02 ug/g	-	<0.02	0.09	-	-	-
Anthracene	0.02 ug/g	-	<0.02	0.09	-	-	-
Benzo [a] anthracene	0.02 ug/g	-	0.02	0.20	-	-	-
Benzo [a] pyrene	0.02 ug/g	-	0.04	0.27	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	-	0.03	0.19	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	-	0.03	0.18	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	-	0.02	0.14	-	-	-
Chrysene	0.02 ug/g	-	0.04	0.23	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	-	<0.02	0.04	-	-	-
Fluoranthene	0.02 ug/g	-	0.08	0.62	-	-	-
Fluorene	0.02 ug/g	-	<0.02	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	-	0.02	0.15	-	-	-

	Client ID:	MW111-2D	MW110-1D	BH112-1B	Methanol Blank	-	-
	Sample Date:	22-Nov-24 10:40	22-Nov-24 09:05	22-Nov-24 10:50	25-Nov-24 12:30		
	Sample ID:	2448154-09	2448154-10	2448154-11	2448154-12		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Semi-Volatiles							
1-Methylnaphthalene	0.02 ug/g	-	<0.02	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g	-	<0.02	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	-	<0.04	<0.04	-	-	-
Naphthalene	0.01 ug/g	-	<0.01	<0.01	-	-	-
Phenanthrene	0.02 ug/g	-	0.03	0.29	-	-	-
Pyrene	0.02 ug/g	-	0.07	0.53	-	-	-
2-Fluorobiphenyl	Surrogate	-	56.7%	58.9%	-	-	-
Terphenyl-d14	Surrogate	-	82.1%	83.2%	-	-	-

	Client ID:	MW111-1B				-	-
	Sample Date:	22-Nov-24 10:50					
	Sample ID:	2448154-13					
	Matrix:	Soil					
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	88.7	-	-	-	-	-
General Inorganics							
SAR	0.01 N/A	0.07	-	-	-	-	-
Conductivity	5 uS/cm	166	-	-	-	-	-
Cyanide, free	0.03 ug/g	<0.03	-	-	-	-	-
pH	0.05 pH Units	7.38	-	-	-	-	-
Metals							
Antimony	1.0 ug/g	<1.0	-	-	-	-	-
Arsenic	1.0 ug/g	2.8	-	-	-	-	-
Barium	1.0 ug/g	178	-	-	-	-	-
Beryllium	0.5 ug/g	0.5	-	-	-	-	-
Boron	5.0 ug/g	7.9	-	-	-	-	-
Boron, available	0.5 ug/g	<0.5	-	-	-	-	-
Cadmium	0.5 ug/g	<0.5	-	-	-	-	-
Chromium	5.0 ug/g	29.8	-	-	-	-	-
Chromium (VI)	0.2 ug/g	<0.2	-	-	-	-	-
Cobalt	1.0 ug/g	8.7	-	-	-	-	-
Copper	5.0 ug/g	24.8	-	-	-	-	-
Lead	1.0 ug/g	19.2	-	-	-	-	-
Mercury	0.1 ug/g	<0.1	-	-	-	-	-
Molybdenum	1.0 ug/g	<1.0	-	-	-	-	-
Nickel	5.0 ug/g	19.3	-	-	-	-	-
Selenium	1.0 ug/g	<1.0	-	-	-	-	-
Silver	0.3 ug/g	<0.3	-	-	-	-	-
Thallium	1.0 ug/g	<1.0	-	-	-	-	-

	Client ID:	MW111-1B				-	-
	Sample Date:	22-Nov-24 10:50					
	Sample ID:	2448154-13					
	Matrix:	Soil					
	MDL/Units						
Metals							
Uranium	1.0 ug/g	<1.0	-	-	-	-	-
Vanadium	10.0 ug/g	36.8	-	-	-	-	-
Zinc	20.0 ug/g	68.1	-	-	-	-	-
Volatiles							
Benzene	0.02 ug/g	<0.02	-	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	-	-
Toluene	0.05 ug/g	<0.05	-	-	-	-	-
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	-	-
Toluene-d8	Surrogate	109%	-	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	-	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	27	-	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	46	-	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	0.02	-	-	-	-	-
Acenaphthylene	0.02 ug/g	0.10	-	-	-	-	-
Anthracene	0.02 ug/g	0.11	-	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	0.27	-	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	0.36	-	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	0.26	-	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	0.25	-	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	0.20	-	-	-	-	-

	Client ID:	MW111-1B				-	-
	Sample Date:	22-Nov-24 10:50					
	Sample ID:	2448154-13					
	Matrix:	Soil					
	MDL/Units						
Semi-Volatiles							
Chrysene	0.02 ug/g	0.28	-	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	0.06	-	-	-	-	-
Fluoranthene	0.02 ug/g	0.80	-	-	-	-	-
Fluorene	0.02 ug/g	0.03	-	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.20	-	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	-	-	-	-
Naphthalene	0.01 ug/g	<0.01	-	-	-	-	-
Phenanthrene	0.02 ug/g	0.38	-	-	-	-	-
Pyrene	0.02 ug/g	0.63	-	-	-	-	-
2-Fluorobiphenyl	Surrogate	61.5%	-	-	-	-	-
Terphenyl-d14	Surrogate	88.0%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G PHCs (gravimetric)	ND	50	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.721*		*%*	*54.1*	*50-140*			
Surrogate: Terphenyl-d14	*1.74*		*%*	*130*	*50-140*			
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	*8.00*		*%*	*100*	*50-140*			

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	*7.05*		*%*	*88.1*	*50-140*			
Surrogate: Toluene-d8	*8.42*		*%*	*105*	*50-140*			
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.42*		*%*	*105*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	ND	0.01	N/A	0.07			NC	30	
Conductivity	196	5	uS/cm	193			1.2	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.18	0.05	pH Units	7.17			0.1	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	2.3	1.0	ug/g	2.7			18.5	30	
Barium	102	1.0	ug/g	113			10.8	30	
Beryllium	ND	0.5	ug/g	0.5			NC	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	5.7	5.0	ug/g	7.0			19.5	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	0.2			NC	35	
Chromium	26.6	5.0	ug/g	30.1			12.4	30	
Cobalt	6.9	1.0	ug/g	7.9			12.5	30	
Copper	18.1	5.0	ug/g	19.5			7.3	30	
Lead	12.1	1.0	ug/g	13.2			8.7	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	1.1			NC	30	
Nickel	15.3	5.0	ug/g	16.8			9.3	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	33.7	10.0	ug/g	37.4			10.5	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Zinc	42.6	20.0	ug/g	47.1			10.0	30	
Physical Characteristics									
% Solids	80.1	0.1	% by Wt.	79.9			0.3	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	0.025			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	0.022	0.02	ug/g	0.026			17.8	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	0.021			NC	40	
Benzo [g,h,i] perylene	0.026	0.02	ug/g	0.022			15.4	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	0.043	0.02	ug/g	0.059			32.0	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	0.028	0.02	ug/g	0.045			NC	40	
Pyrene	0.052	0.02	ug/g	0.070			29.3	40	
Surrogate: 2-Fluorobiphenyl	*0.776*		*%*		*50.5*	*50-140*			
Surrogate: Terphenyl-d14	*1.13*		*%*		*73.5*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*9.07*		*%*		*104*	*50-140*			
Surrogate: Dibromofluoromethane	*8.44*		*%*		*96.4*	*50-140*			
Surrogate: Toluene-d8	*9.38*		*%*		*107*	*50-140*			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*9.38*		*%*		*107*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.307	0.03	ug/g	ND	95.9	50-150			
Hydrocarbons									
F1 PHCs (C6-C10)	195	7	ug/g	ND	97.4	85-115			
F2 PHCs (C10-C16)	80	4	ug/g	ND	87.8	60-140			
F3 PHCs (C16-C34)	225	8	ug/g	ND	101	60-140			
F4 PHCs (C34-C50)	120	6	ug/g	ND	85.1	60-140			
F4G PHCs (gravimetric)	1000	50	ug/g	ND	100	80-120			
Metals									
Antimony	35.7	1.0	ug/g	ND	71.3	70-130			
Arsenic	47.9	1.0	ug/g	1.1	93.6	70-130			
Barium	86.0	1.0	ug/g	45.3	81.4	70-130			
Beryllium	48.4	0.5	ug/g	ND	96.5	70-130			
Boron, available	3.72	0.5	ug/g	ND	74.4	70-122			
Boron	47.2	5.0	ug/g	ND	88.8	70-130			
Cadmium	44.3	0.5	ug/g	ND	88.4	70-130			
Chromium (VI)	4.8	0.2	ug/g	0.2	81.0	48-112			
Chromium	58.5	5.0	ug/g	12.0	93.0	70-130			
Cobalt	51.1	1.0	ug/g	3.1	96.0	70-130			
Copper	53.5	5.0	ug/g	7.8	91.3	70-130			
Lead	48.7	1.0	ug/g	5.3	86.9	70-130			
Mercury	1.48	0.1	ug/g	ND	98.4	70-130			
Molybdenum	45.0	1.0	ug/g	ND	89.2	70-130			
Nickel	53.2	5.0	ug/g	6.7	93.1	70-130			
Selenium	45.1	1.0	ug/g	ND	89.8	70-130			
Silver	43.7	0.3	ug/g	ND	87.3	70-130			
Thallium	45.0	1.0	ug/g	ND	89.9	70-130			
Uranium	47.2	1.0	ug/g	ND	93.7	70-130			
Vanadium	60.7	10.0	ug/g	15.0	91.4	70-130			
Zinc	61.4	20.0	ug/g	ND	85.1	70-130			
Semi-Volatiles									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Acenaphthene	0.187	0.02	ug/g	ND	97.4	50-140			
Acenaphthylene	0.196	0.02	ug/g	0.025	88.9	50-140			
Anthracene	0.200	0.02	ug/g	ND	104	50-140			
Benzo [a] anthracene	0.157	0.02	ug/g	ND	81.9	50-140			
Benzo [a] pyrene	0.213	0.02	ug/g	0.026	97.4	50-140			
Benzo [b] fluoranthene	0.159	0.02	ug/g	0.021	72.0	50-140			
Benzo [g,h,i] perylene	0.216	0.02	ug/g	0.022	101	50-140			
Benzo [k] fluoranthene	0.174	0.02	ug/g	ND	90.9	50-140			
Chrysene	0.196	0.02	ug/g	ND	102	50-140			
Dibenzo [a,h] anthracene	0.159	0.02	ug/g	ND	83.1	50-140			
Fluoranthene	0.230	0.02	ug/g	0.059	89.0	50-140			
Fluorene	0.153	0.02	ug/g	ND	79.7	50-140			
Indeno [1,2,3-cd] pyrene	0.191	0.02	ug/g	ND	99.5	50-140			
1-Methylnaphthalene	0.136	0.02	ug/g	ND	70.8	50-140			
2-Methylnaphthalene	0.146	0.02	ug/g	ND	76.3	50-140			
Naphthalene	0.181	0.01	ug/g	ND	94.2	50-140			
Phenanthrene	0.213	0.02	ug/g	0.045	87.1	50-140			
Pyrene	0.248	0.02	ug/g	0.070	92.6	50-140			
Surrogate: 2-Fluorobiphenyl	*0.874*		*%*		*57.0*	*50-140*			
Surrogate: Terphenyl-d14	*1.13*		*%*		*73.6*	*50-140*			
Volatiles									
Acetone	8.98	0.50	ug/g	ND	89.8	50-140			
Benzene	4.07	0.02	ug/g	ND	102	60-130			
Bromodichloromethane	3.60	0.05	ug/g	ND	90.0	60-130			
Bromoform	3.22	0.05	ug/g	ND	80.5	60-130			
Bromomethane	4.46	0.05	ug/g	ND	111	50-140			
Carbon Tetrachloride	3.56	0.05	ug/g	ND	89.1	60-130			
Chlorobenzene	3.20	0.05	ug/g	ND	80.0	60-130			
Chloroform	3.73	0.05	ug/g	ND	93.3	60-130			
Dibromochloromethane	3.76	0.05	ug/g	ND	94.0	60-130			
Dichlorodifluoromethane	4.03	0.05	ug/g	ND	101	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	3.46	0.05	ug/g	ND	86.5	60-130			
1,3-Dichlorobenzene	3.45	0.05	ug/g	ND	86.2	60-130			
1,4-Dichlorobenzene	3.32	0.05	ug/g	ND	83.0	60-130			
1,1-Dichloroethane	3.18	0.05	ug/g	ND	79.5	60-130			
1,2-Dichloroethane	3.97	0.05	ug/g	ND	99.2	60-130			
1,1-Dichloroethylene	3.54	0.05	ug/g	ND	88.6	60-130			
cis-1,2-Dichloroethylene	3.73	0.05	ug/g	ND	93.3	60-130			
trans-1,2-Dichloroethylene	3.59	0.05	ug/g	ND	89.8	60-130			
1,2-Dichloropropane	3.92	0.05	ug/g	ND	98.0	60-130			
cis-1,3-Dichloropropylene	3.64	0.05	ug/g	ND	91.0	60-130			
trans-1,3-Dichloropropylene	3.76	0.05	ug/g	ND	94.1	60-130			
Ethylbenzene	3.49	0.05	ug/g	ND	87.4	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	3.45	0.05	ug/g	ND	86.1	60-130			
Hexane	4.17	0.05	ug/g	ND	104	60-130			
Methyl Ethyl Ketone (2-Butanone)	10.2	0.50	ug/g	ND	102	50-140			
Methyl Isobutyl Ketone	10.7	0.50	ug/g	ND	107	50-140			
Methyl tert-butyl ether	10.7	0.05	ug/g	ND	107	50-140			
Methylene Chloride	3.75	0.05	ug/g	ND	93.7	60-130			
Styrene	3.19	0.05	ug/g	ND	79.8	60-130			
1,1,1,2-Tetrachloroethane	3.24	0.05	ug/g	ND	80.9	60-130			
1,1,2,2-Tetrachloroethane	3.09	0.05	ug/g	ND	77.3	60-130			
Tetrachloroethylene	3.13	0.05	ug/g	ND	78.4	60-130			
Toluene	3.36	0.05	ug/g	ND	83.9	60-130			
1,1,1-Trichloroethane	3.62	0.05	ug/g	ND	90.6	60-130			
1,1,2-Trichloroethane	3.81	0.05	ug/g	ND	95.2	60-130			
Trichloroethylene	3.98	0.05	ug/g	ND	99.5	60-130			
Trichlorofluoromethane	4.39	0.05	ug/g	ND	110	50-140			
Vinyl chloride	4.22	0.02	ug/g	ND	105	50-140			
m,p-Xylenes	6.87	0.05	ug/g	ND	85.9	60-130			
o-Xylene	3.50	0.05	ug/g	ND	87.6	60-130			
Surrogate: 4-Bromofluorobenzene	*7.89*		*%*		*98.6*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	*6.92*		*%*		*86.5*	*50-140*			
Surrogate: Toluene-d8	*8.00*		*%*		*100*	*50-140*			
Benzene	4.07	0.02	ug/g	ND	102	60-130			
Ethylbenzene	3.49	0.05	ug/g	ND	87.4	60-130			
Toluene	3.36	0.05	ug/g	ND	83.9	60-130			
m,p-Xylenes	6.87	0.05	ug/g	ND	85.9	60-130			
o-Xylene	3.50	0.05	ug/g	ND	87.6	60-130			
Surrogate: Toluene-d8	*8.00*		*%*		*100*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: GC-FID signal did not return to baseline by C50

Applies to Samples: BH107-1B, MW109-2A

QC Qualifiers:

Sample Data Revisions:

None

Work Order Revisions / Comments:

Revision-1: This report includes additional PAH analysis for sample MW111-2C (2448154-08) as per the client.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

PARACEL LABORATORIES LTD.

Paracel ID: 2448154

Paracel Order Number (Lab Use Only)	Chain of Custody (Lab Use Only)
2448154	№ 145885

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Client Name: Terraprax Environmental Ltd	Project Ref: C0986.00
Contact Name: Greg Sabourin	Quote #: PO945.03 City of Ottawa
Address: 1-20 Gurdwara Rd. Ottawa ON K2E 8B3	PO #: City of Ottawa
Telephone: 613 745 6471	E-mail: g.sabourin@terraprax.com

Turnaround Time

☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular

Date Required: _____

☐ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Res/Park ☐ Med/Fine

☐ Table 2 ☒ Ind/Comm ☒ Coarse

☒ Table 3 ☐ Agri/Other

☐ Table ___

For RSC: ☐ Yes ☐ No

Other Regulation

☐ REG 558 ☐ PWQO

☐ CCME ☐ MISA

☐ SU - Sani ☐ SU-Storm

Mun: _____

☐ Other

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name		Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	O. Reg 153 Mtl	PAHs	pH/grain size 75um		
1	~~BH106-1B~~		S		3	~~21 NOV 24~~	~~13:40~~	X	X						X	X			
2	BH107-1B	BNK 221	S	~	3	21 NOV 24	14:05	X	X						X	X			
3	MW107-3A	222	S	~	2	21 NOV 24	14:40	X	X										
4	BH108-1A	223	S	~	4	21 NOV 24	14:55	X	X						X	X	X		
5	MW109-2A	224	S	~	2	22 NOV 24	8:20	X	X										
6	MW109-1A	225	S	~	2	22 NOV 24	8:05								X	X			
7	MW109-3A	226	S	~	3	22 NOV 24	8:55	X	X		X						X		
8	MW110-1A	227	S	~	3	22 NOV 24	9:05	X	X						X	X			
9	MW111-2C	228	S	~	2	22 NOV 24	10:40	X	X		X								
10	MW111-2D	229	S	~	2	22 NOV 24	10:40	X	X		X								

Comments: MW107-1B limited soil volume.

City of Ottawa Project, Nahid Arasteh city PM

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot:	Received at Lab: SS	Verified By: JM
Relinquished By (Print):	Date/Time:	Date/Time: 25 Nov 24 1614	Date/Time: 11-25-24 11:50
Date/Time: 25 Nov 24 16:15	Temperature: °C	Temperature: 3.9 7.7 °C	pH Verified: ☐ By:

PARACEL LABORATORIES LTD.

Paracel ID: 2448154

Paracel Order Number (Lab Use Only)

Chain of Custody (Lab Use Only)

№ 145887

Client Name: Terrapex Environmental Ltd	Project Ref: C0926.w [illegible]
Contact Name: Greg Sabourin	Quote #: 80945.03 / City of Ottawa
Address: 1-20 Gurdwara Rd. Ottawa ON	PO #: City of Ottawa
Telephone: 613 745 6471	E-mail: g.sabourin@terrapex.com

Page 2 of 2

Turnaround Time

☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular

Date Required: ____

☐ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☒ Ind/Comm ☒ Coarse
☒ Table 3 ☐ Agri/Other
☐ Table ____

For RSC: ☐ Yes ☐ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU-Storm
Mun: ____
☐ Other

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint A (Air) O (Other)

Required Analysis

#	Sample ID/Location Name		Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	O.Reg 153 M+I	PHC F1			
1	MW110-1D	BNK 230	S	-	2	22 Nov 24	9:05			X					X				
2	BH112-1B	231	S	-	~~2~~ 3	22 Nov 24	~~11:05~~ 10:50	X	~~X~~	X					X				
3	~~BH112-2D~~	~~232~~	~~S~~	-	~~2~~	~~22 Nov 24~~	~~11:05 10:50~~		~~X~~										
4	Methanol Blank	232	-	-	1		12:30		X							X			
5	MW111-1B	233	S	-	3	22 Nov 24	10:50	X		X					X				
6																			
7																			
8																			
9																			
10																			

Comments: City of Ottawa Project, [illegible] City PM

Method of Delivery: Walk in

Relinquished By (Sign): [signature]	Received at Depot:	Received at Lab: SS	Verified By: JM
Relinquished By (Print): Jeff Mirey	Date/Time:	Date/Time: 25 Nov 24 1614	Date/Time: 11-26-24 11:50
Date/Time: 25 Nov 24 16:15	Temperature: °C	Temperature: 3.9 7.7	pH Verified: ☐ By:

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Certificate of Analysis

Terrapex Environmental Ltd. (Ottawa)
20 Gurdwara Rd. Unit #1
Ottawa, ON K2E 8B3
Attn: Greg Sabourin

Client PO:
Project: CO986.00/40 Beechcliffe Street
Custody: 145883

Report Date: 16-Dec-2024
Order Date: 9-Dec-2024

Order #: 2450112

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2450112-01	MW111D-5
2450112-02	BH113-1
2450112-03	BH114-1

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	11-Dec-24	13-Dec-24
Solids, %	CWS Tier 1 - Gravimetric	13-Dec-24	16-Dec-24

Certificate of Analysis

Report Date: 16-Dec-2024

Client: **Terrapex Environmental Ltd. (Ottawa)**

Order Date: 9-Dec-2024

Client PO:

Project Description: CO986.00/40 Beechcliffe Street

	Client ID:	MW111D-5	BH113-1	BH114-1	-	-	-
	Sample Date:	06-Dec-24 14:30	06-Dec-24 14:40	06-Dec-24 14:50	-		
	Sample ID:	2450112-01	2450112-02	2450112-03	-		
	Matrix:	Soil	Soil	Soil	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	89.2	88.1	88.2	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	0.03	<0.02	<0.02	-	-	-
Acenaphthylene	0.02 ug/g	0.14	0.18	0.08	-	-	-
Anthracene	0.02 ug/g	0.18	0.18	0.08	-	-	-
Benzo [a] anthracene	0.02 ug/g	0.36	0.32	0.14	-	-	-
Benzo [a] pyrene	0.02 ug/g	0.39	0.44	0.15	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	0.44	0.52	0.19	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	0.33	0.37	0.11	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	0.31	0.31	0.14	-	-	-
Chrysene	0.02 ug/g	0.32	0.30	0.14	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	0.08	0.09	0.03	-	-	-
Fluoranthene	0.02 ug/g	0.89	0.70	0.35	-	-	-
Fluorene	0.02 ug/g	0.03	0.03	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	0.31	0.34	0.11	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	<0.04	<0.04	-	-	-
Naphthalene	0.01 ug/g	0.03	<0.01	<0.01	-	-	-
Phenanthrene	0.02 ug/g	0.41	0.31	0.11	-	-	-
Pyrene	0.02 ug/g	0.75	0.63	0.30	-	-	-
2-Fluorobiphenyl	Surrogate	60.8%	65.5%	59.8%	-	-	-
Terphenyl-d14	Surrogate	68.6%	69.1%	63.5%	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.708*		*%*	*53.1*	*50-140*			
Surrogate: Terphenyl-d14	*0.721*		*%*	*54.1*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Physical Characteristics									
% Solids	85.5	0.1	% by Wt.	85.5			0.0	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	0.029			NC	40	
Acenaphthylene	0.124	0.02	ug/g	0.139			11.2	40	
Anthracene	0.149	0.02	ug/g	0.185			21.4	40	
Benzo [a] anthracene	0.269	0.02	ug/g	0.357			28.1	40	
Benzo [a] pyrene	0.314	0.02	ug/g	0.387			20.9	40	
Benzo [b] fluoranthene	0.264	0.02	ug/g	0.441			50.1	40	QR-04
Benzo [g,h,i] perylene	0.230	0.02	ug/g	0.334			36.6	40	
Benzo [k] fluoranthene	0.172	0.02	ug/g	0.305			55.7	40	QR-04
Chrysene	0.258	0.02	ug/g	0.323			22.6	40	
Dibenzo [a,h] anthracene	0.049	0.02	ug/g	0.082			49.7	40	QR-04
Fluoranthene	0.656	0.02	ug/g	0.893			30.7	40	
Fluorene	ND	0.02	ug/g	0.034			NC	40	
Indeno [1,2,3-cd] pyrene	0.194	0.02	ug/g	0.309			45.6	40	QR-04
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	0.029			NC	40	
Phenanthrene	0.262	0.02	ug/g	0.408			43.5	40	QR-04
Pyrene	0.543	0.02	ug/g	0.754			32.5	40	
Surrogate: 2-Fluorobiphenyl	*1.00*		*%*		*66.9*	*50-140*			
Surrogate: Terphenyl-d14	*1.19*		*%*		*79.8*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles									
Acenaphthene	0.156	0.02	ug/g	0.029	67.5	50-140			
Acenaphthylene	0.258	0.02	ug/g	0.139	64.1	50-140			
Anthracene	0.294	0.02	ug/g	0.185	58.5	50-140			
Benzo [a] anthracene	0.421	0.02	ug/g	0.357	34.4	50-140			QM-06
Benzo [a] pyrene	0.458	0.02	ug/g	0.387	38.2	50-140			QM-06
Benzo [b] fluoranthene	0.101	0.02	ug/g	ND	60.6	50-140			
Benzo [g,h,i] perylene	0.450	0.02	ug/g	0.334	62.6	50-140			
Benzo [k] fluoranthene	0.089	0.02	ug/g	ND	53.4	50-140			
Chrysene	0.384	0.02	ug/g	0.323	32.6	50-140			QM-06
Dibenzo [a,h] anthracene	0.193	0.02	ug/g	0.082	59.2	50-140			
Fluoranthene	0.118	0.02	ug/g	ND	70.7	50-140			
Fluorene	0.169	0.02	ug/g	0.034	72.4	50-140			
Indeno [1,2,3-cd] pyrene	0.420	0.02	ug/g	0.309	59.5	50-140			
1-Methylnaphthalene	0.154	0.02	ug/g	ND	82.5	50-140			
2-Methylnaphthalene	0.154	0.02	ug/g	ND	82.3	50-140			
Naphthalene	0.177	0.01	ug/g	0.029	79.5	50-140			
Phenanthrene	0.130	0.02	ug/g	ND	78.3	50-140			
Pyrene	0.121	0.02	ug/g	ND	72.7	50-140			
Surrogate: 2-Fluorobiphenyl	*0.884*		*%*		*59.2*	*50-140*			
Surrogate: Terphenyl-d14	*1.09*		*%*		*73.0*	*50-140*			

Qualifier Notes:

QC Qualifiers:

QM-06	Due to noted non-homogeneity of the QC sample matrix, the spike recoveries were out side the accepted range. Batch data accepted based on other QC.
QR-04	Duplicate results exceeds RPD limits due to non-homogeneous matrix.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

PARACE LABORATORIES L

Paracel ID: 2450112

ilvd. 4J8 s.com

Paracel Order Number (Lab Use Only): 2450112

Chain of Custody (Lab Use Only) № 145883

Page 1 of 1

Client Name: Terrapex Environmental Ltd.
Contact Name: Greg Sabourin
Address: 1-20 Cleopatra Rd, Nepean, Ottawa ON K2E 8B3.
Telephone: 613 745 6471

Project Ref: C0986.00
Quote #: Q0945.03 / City of Ottawa Job
PO #: City of Ottawa
E-mail: g.sabourin@terrapex.com

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ Regular
Date Required: _____

☒ REG 153/04 ☐ REG 406/19

☐ Table 1 ☒ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☒ Coarse
☒ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☐ Yes ☐ No

Other Regulation
☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU-Storm
Mun: _____
☐ Other

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)

	Sample ID/Location Name		Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)
1	MW111D-5	BNK 300	S	—	1	6/12/2024	14:30			/				
2	BH113-1	↓ 301	S	—	1	"	14:40			/				
3	BH114-1	↓ 302	S	—	1	"	14:50			/				
4														
5														
6														
7														
8														
9														
10														

Comments: City of Ottawa Job Nahid Arasteh, City PM

Method of Delivery: Walk in

Relinquished By (Sign):
Relinquished By (Print): SREE
Date/Time: 09/12/2024 12:00 pm.

Received at Depot:
Date/Time:
Temperature: °C

Received at Lab: JM
Date/Time: 12-09-24 1634
Temperature: 1.8 °C

Verified By:
Date/Time: Dec. 10 835
pH Verified: ☐ By:

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Certificate of Analysis

Terrapex Environmental Ltd. (Ottawa)
20 Gurdwara Rd. Unit #1
Ottawa, ON K2E 8B3
Attn: Greg Sabourin

Client PO:
Project: CO986.00/40 Beechcliffe Street
Custody: 77161

Report Date: 24-Dec-2024
Order Date: 13-Dec-2024

Order #: 2450539

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2450539-01	MW105D
2450539-02	MW101
2450539-03	MW103
2450539-04	MW1005

Approved By:

Dale Robertson, BSc
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Anions	EPA 300.1 - IC	16-Dec-24	16-Dec-24
Chromium, hexavalent - water	MOE E3056 - colourimetric	16-Dec-24	16-Dec-24
Cyanide, free	MOE E3015 - Auto Colour	16-Dec-24	16-Dec-24
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	16-Dec-24	16-Dec-24
Metals, ICP-MS	EPA 200.8 - ICP-MS	16-Dec-24	16-Dec-24
pH	EPA 150.1 - pH probe @25 °C	16-Dec-24	16-Dec-24
PHC F1	CWS Tier 1 - P&T GC-FID	16-Dec-24	17-Dec-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	19-Dec-24	19-Dec-24
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	23-Dec-24	23-Dec-24
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	16-Dec-24	17-Dec-24

Certificate of Analysis

Report Date: 24-Dec-2024

Client: **Terrapex Environmental Ltd. (Ottawa)**

Order Date: 13-Dec-2024

Client PO:

Project Description: CO986.00/40 Beechcliffe Street

	Client ID:	MW105D	MW101	MW103	MW1005	-	-
	Sample Date:	13-Dec-24 10:45	11-Dec-24 14:10	11-Dec-24 14:30	13-Dec-24 10:45		
	Sample ID:	2450539-01	2450539-02	2450539-03	2450539-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
General Inorganics							
Cyanide, free	2 ug/L	<2	-	<2	<2	-	-
pH	0.1 pH Units	7.5	-	7.4	7.6	-	-
Anions							
Chloride	1 mg/L	92	-	5	92	-	-
Metals							
Mercury	0.1 ug/L	<0.1	-	<0.1	<0.1	-	-
Antimony	0.5 ug/L	<0.5	-	<0.5	<0.5	-	-
Arsenic	1 ug/L	<1	-	<1	<1	-	-
Barium	1 ug/L	67	-	133	66	-	-
Beryllium	0.5 ug/L	<0.5	-	<0.5	<0.5	-	-
Boron	10 ug/L	21	-	23	19	-	-
Cadmium	0.1 ug/L	<0.1	-	<0.1	<0.1	-	-
Chromium (VI)	10 ug/L	<10	-	<10	<10	-	-
Chromium	1 ug/L	<1	-	<1	<1	-	-
Cobalt	0.5 ug/L	7.8	-	1.0	7.8	-	-
Copper	0.5 ug/L	1.6	-	1.3	1.5	-	-
Lead	0.1 ug/L	<0.1	-	<0.1	<0.1	-	-
Molybdenum	0.5 ug/L	4.1	-	6.0	4.3	-	-
Nickel	1 ug/L	12	-	2	13	-	-
Selenium	1 ug/L	<1	-	<1	<1	-	-
Silver	0.1 ug/L	<0.1	-	<0.1	<0.1	-	-
Sodium	200 ug/L	59900	-	10900	60600	-	-
Thallium	0.1 ug/L	<0.1	-	<0.1	<0.1	-	-
Uranium	0.1 ug/L	7.3	-	2.5	7.4	-	-
Vanadium	0.5 ug/L	<0.5	-	1.1	<0.5	-	-

Certificate of Analysis

Report Date: 24-Dec-2024

Client: **Terrapex Environmental Ltd. (Ottawa)**

Order Date: 13-Dec-2024

Client PO:

Project Description: CO986.00/40 Beechcliffe Street

	Client ID:	MW105D	MW101	MW103	MW1005	-	-
	Sample Date:	13-Dec-24 10:45	11-Dec-24 14:10	11-Dec-24 14:30	13-Dec-24 10:45		
	Sample ID:	2450539-01	2450539-02	2450539-03	2450539-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Metals							
Zinc	5 ug/L	<5	-	<5	<5	-	-
Volatiles							
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	-	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-

	Client ID:	MW105D	MW101	MW103	MW1005	-	-
	Sample Date:	13-Dec-24 10:45	11-Dec-24 14:10	11-Dec-24 14:30	13-Dec-24 10:45		
	Sample ID:	2450539-01	2450539-02	2450539-03	2450539-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Volatiles							
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	-	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0	-	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	-	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	-	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
4-Bromofluorobenzene	Surrogate	92.1%	92.3%	93.2%	91.1%	-	-
Dibromofluoromethane	Surrogate	76.3%	76.5%	76.4%	76.0%	-	-
Toluene-d8	Surrogate	112%	111%	112%	112%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100 [3]	<100	-	-

	Client ID:	MW105D	MW101	MW103	MW1005	-	-
	Sample Date:	13-Dec-24 10:45	11-Dec-24 14:10	11-Dec-24 14:30	13-Dec-24 10:45		
	Sample ID:	2450539-01	2450539-02	2450539-03	2450539-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Hydrocarbons							
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100 [3]	<100	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100 [3]	<100	-	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Acenaphthylene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Anthracene	0.01 ug/L	<0.01	-	<0.01	<0.01	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	-	<0.01	<0.01	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	-	<0.01	<0.01	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Chrysene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Fluoranthene	0.01 ug/L	<0.01	-	<0.01	<0.01	-	-
Fluorene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	-	<0.10	<0.10	-	-
Naphthalene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Phenanthrene	0.05 ug/L	<0.05	-	<0.05	<0.05	-	-
Pyrene	0.01 ug/L	<0.01	-	<0.01	<0.01	-	-
2-Fluorobiphenyl	Surrogate	68.4%	-	58.7%	68.2%	-	-
Terphenyl-d14	Surrogate	110%	-	70.0%	102%	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions								
Chloride	ND	1	mg/L					
General Inorganics								
Cyanide, free	ND	2	ug/L					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
Metals								
Mercury	ND	0.1	ug/L					
Antimony	ND	0.5	ug/L					
Arsenic	ND	1	ug/L					
Barium	ND	1	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10	ug/L					
Cadmium	ND	0.1	ug/L					
Chromium (VI)	ND	10	ug/L					
Chromium	ND	1	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.1	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1	ug/L					
Selenium	ND	1	ug/L					
Silver	ND	0.1	ug/L					
Sodium	ND	200	ug/L					
Thallium	ND	0.1	ug/L					
Uranium	ND	0.1	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5	ug/L					
Semi-Volatiles								
Acenaphthene	ND	0.05	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Acenaphthylene	ND	0.05	ug/L					
Anthracene	ND	0.01	ug/L					
Benzo [a] anthracene	ND	0.01	ug/L					
Benzo [a] pyrene	ND	0.01	ug/L					
Benzo [b] fluoranthene	ND	0.05	ug/L					
Benzo [g,h,i] perylene	ND	0.05	ug/L					
Benzo [k] fluoranthene	ND	0.05	ug/L					
Chrysene	ND	0.05	ug/L					
Dibenzo [a,h] anthracene	ND	0.05	ug/L					
Fluoranthene	ND	0.01	ug/L					
Fluorene	ND	0.05	ug/L					
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L					
1-Methylnaphthalene	ND	0.05	ug/L					
2-Methylnaphthalene	ND	0.05	ug/L					
Methylnaphthalene (1&2)	ND	0.10	ug/L					
Naphthalene	ND	0.05	ug/L					
Phenanthrene	ND	0.05	ug/L					
Pyrene	ND	0.01	ug/L					
Surrogate: 2-Fluorobiphenyl	*13.8*		*%*	*69.1*	*50-140*			
Surrogate: Terphenyl-d14	*19.3*		*%*	*96.3*	*50-140*			
Volatiles								
Acetone	ND	5.0	ug/L					
Benzene	ND	0.5	ug/L					
Bromodichloromethane	ND	0.5	ug/L					
Bromoform	ND	0.5	ug/L					
Bromomethane	ND	0.5	ug/L					
Carbon Tetrachloride	ND	0.2	ug/L					
Chlorobenzene	ND	0.5	ug/L					
Chloroform	ND	0.5	ug/L					
Dibromochloromethane	ND	0.5	ug/L					
Dichlorodifluoromethane	ND	1.0	ug/L					
1,2-Dichlorobenzene	ND	0.5	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,3-Dichlorobenzene	ND	0.5	ug/L					
1,4-Dichlorobenzene	ND	0.5	ug/L					
1,1-Dichloroethane	ND	0.5	ug/L					
1,2-Dichloroethane	ND	0.5	ug/L					
1,1-Dichloroethylene	ND	0.5	ug/L					
cis-1,2-Dichloroethylene	ND	0.5	ug/L					
trans-1,2-Dichloroethylene	ND	0.5	ug/L					
1,2-Dichloropropane	ND	0.5	ug/L					
cis-1,3-Dichloropropylene	ND	0.5	ug/L					
trans-1,3-Dichloropropylene	ND	0.5	ug/L					
1,3-Dichloropropene, total	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L					
Hexane	ND	1.0	ug/L					
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L					
Methyl Isobutyl Ketone	ND	5.0	ug/L					
Methyl tert-butyl ether	ND	2.0	ug/L					
Methylene Chloride	ND	5.0	ug/L					
Styrene	ND	0.5	ug/L					
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L					
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L					
Tetrachloroethylene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
1,1,1-Trichloroethane	ND	0.5	ug/L					
1,1,2-Trichloroethane	ND	0.5	ug/L					
Trichloroethylene	ND	0.5	ug/L					
Trichlorofluoromethane	ND	1.0	ug/L					
Vinyl chloride	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: 4-Bromofluorobenzene	*72.6*		*%*	*90.7*	*50-140*			

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	*60.5*		*%*	*75.6*	*50-140*			
Surrogate: Toluene-d8	*83.0*		*%*	*104*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	4.01	1	mg/L	3.99			0.5	20	
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
pH	8.1	0.1	pH Units	8.1			0.1	3.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	ND	0.5	ug/L	0.66			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	17.9	1	ug/L	17.0			4.8	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	16	10	ug/L	15			0.5	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	2.21	0.5	ug/L	2.17			1.7	20	
Lead	ND	0.1	ug/L	ND			NC	20	
Molybdenum	2.66	0.5	ug/L	2.45			8.3	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	16600	200	ug/L	15800			4.5	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	ND	0.1	ug/L	ND			NC	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	13	5	ug/L	12			1.0	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*74.4*		*%*		*93.1*	*50-140*			
Surrogate: Dibromofluoromethane	*67.8*		*%*		*84.7*	*50-140*			
Surrogate: Toluene-d8	*85.2*		*%*		*106*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	13.7	1	mg/L	3.99	96.7	70-124			
General Inorganics									
Cyanide, free	47.5	2	ug/L	ND	94.9	61-139			
Hydrocarbons									
F1 PHCs (C6-C10)	1900	25	ug/L	ND	110	85-115			
F2 PHCs (C10-C16)	1570	100	ug/L	ND	97.9	60-140			
F3 PHCs (C16-C34)	4540	100	ug/L	ND	116	60-140			
F4 PHCs (C34-C50)	2640	100	ug/L	ND	106	60-140			
Metals									
Mercury	3.12	0.1	ug/L	ND	104	70-130			
Arsenic	48.8	1	ug/L	ND	96.8	80-120			
Barium	59.6	1	ug/L	17.0	85.2	80-120			
Beryllium	44.0	0.5	ug/L	ND	88.0	80-120			
Boron	57	10	ug/L	15	82.8	80-120			
Cadmium	41.5	0.1	ug/L	ND	83.1	80-120			
Chromium (VI)	187	10	ug/L	ND	93.5	75-115			
Chromium	47.6	1	ug/L	ND	94.8	80-120			
Cobalt	48.6	0.5	ug/L	ND	97.2	80-120			
Copper	43.9	0.5	ug/L	2.17	83.4	80-120			
Lead	36.4	0.1	ug/L	ND	72.8	80-120			QM-07
Molybdenum	38.5	0.5	ug/L	0.80	75.5	80-120			QM-07
Nickel	44.6	1	ug/L	ND	88.5	80-120			
Selenium	43.2	1	ug/L	ND	86.4	80-120			
Silver	48.3	0.1	ug/L	ND	96.7	80-120			
Sodium	26200	200	ug/L	15800	103	80-120			
Thallium	44.8	0.1	ug/L	ND	89.6	80-120			
Uranium	41.6	0.1	ug/L	ND	83.1	80-120			
Vanadium	47.4	0.5	ug/L	ND	94.6	80-120			
Zinc	52	5	ug/L	12	79.2	80-120			QM-07
Semi-Volatiles									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Acenaphthene	4.16	0.05	ug/L	ND	83.2	50-140			
Acenaphthylene	4.10	0.05	ug/L	ND	82.0	50-140			
Anthracene	5.13	0.01	ug/L	ND	103	50-140			
Benzo [a] anthracene	3.75	0.01	ug/L	ND	74.9	50-140			
Benzo [a] pyrene	3.63	0.01	ug/L	ND	72.6	50-140			
Benzo [b] fluoranthene	3.94	0.05	ug/L	ND	78.8	50-140			
Benzo [g,h,i] perylene	3.61	0.05	ug/L	ND	72.2	50-140			
Benzo [k] fluoranthene	3.76	0.05	ug/L	ND	75.1	50-140			
Chrysene	4.35	0.05	ug/L	ND	86.9	50-140			
Dibenzo [a,h] anthracene	3.92	0.05	ug/L	ND	78.4	50-140			
Fluoranthene	5.05	0.01	ug/L	ND	101	50-140			
Fluorene	3.64	0.05	ug/L	ND	72.7	50-140			
Indeno [1,2,3-cd] pyrene	3.87	0.05	ug/L	ND	77.5	50-140			
1-Methylnaphthalene	3.62	0.05	ug/L	ND	72.4	50-140			
2-Methylnaphthalene	3.82	0.05	ug/L	ND	76.3	50-140			
Naphthalene	4.06	0.05	ug/L	ND	81.1	50-140			
Phenanthrene	4.78	0.05	ug/L	ND	95.6	50-140			
Pyrene	5.25	0.01	ug/L	ND	105	50-140			
Surrogate: 2-Fluorobiphenyl	*15.1*		*%*		*75.7*	*50-140*			
Surrogate: Terphenyl-d14	*20.5*		*%*		*102*	*50-140*			
Volatiles									
Acetone	77.8	5.0	ug/L	ND	77.8	50-140			
Benzene	36.4	0.5	ug/L	ND	91.1	60-130			
Bromodichloromethane	33.5	0.5	ug/L	ND	83.8	60-130			
Bromoform	35.7	0.5	ug/L	ND	89.2	60-130			
Bromomethane	30.5	0.5	ug/L	ND	76.4	50-140			
Carbon Tetrachloride	32.1	0.2	ug/L	ND	80.2	60-130			
Chlorobenzene	36.4	0.5	ug/L	ND	91.1	60-130			
Chloroform	35.2	0.5	ug/L	ND	88.1	60-130			
Dibromochloromethane	34.6	0.5	ug/L	ND	86.6	60-130			
Dichlorodifluoromethane	33.5	1.0	ug/L	ND	83.6	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	38.2	0.5	ug/L	ND	95.4	60-130			
1,3-Dichlorobenzene	37.5	0.5	ug/L	ND	93.7	60-130			
1,4-Dichlorobenzene	38.5	0.5	ug/L	ND	96.2	60-130			
1,1-Dichloroethane	36.1	0.5	ug/L	ND	90.4	60-130			
1,2-Dichloroethane	37.3	0.5	ug/L	ND	93.2	60-130			
1,1-Dichloroethylene	34.4	0.5	ug/L	ND	85.9	60-130			
cis-1,2-Dichloroethylene	34.5	0.5	ug/L	ND	86.3	60-130			
trans-1,2-Dichloroethylene	35.1	0.5	ug/L	ND	87.7	60-130			
1,2-Dichloropropane	34.4	0.5	ug/L	ND	85.9	60-130			
cis-1,3-Dichloropropylene	32.3	0.5	ug/L	ND	80.8	60-130			
trans-1,3-Dichloropropylene	31.3	0.5	ug/L	ND	78.2	60-130			
Ethylbenzene	39.3	0.5	ug/L	ND	98.2	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	31.0	0.2	ug/L	ND	77.6	60-130			
Hexane	34.8	1.0	ug/L	ND	87.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	72.3	5.0	ug/L	ND	72.3	50-140			
Methyl Isobutyl Ketone	67.2	5.0	ug/L	ND	67.2	50-140			
Methyl tert-butyl ether	85.1	2.0	ug/L	ND	85.1	50-140			
Methylene Chloride	34.0	5.0	ug/L	ND	85.0	60-130			
Styrene	36.6	0.5	ug/L	ND	91.6	60-130			
1,1,1,2-Tetrachloroethane	32.5	0.5	ug/L	ND	81.2	60-130			
1,1,2,2-Tetrachloroethane	32.1	0.5	ug/L	ND	80.4	60-130			
Tetrachloroethylene	39.9	0.5	ug/L	ND	99.7	60-130			
Toluene	37.6	0.5	ug/L	ND	94.1	60-130			
1,1,1-Trichloroethane	31.6	0.5	ug/L	ND	79.0	60-130			
1,1,2-Trichloroethane	32.3	0.5	ug/L	ND	80.8	60-130			
Trichloroethylene	35.6	0.5	ug/L	ND	89.0	60-130			
Trichlorofluoromethane	30.0	1.0	ug/L	ND	74.9	60-130			
Vinyl chloride	34.2	0.5	ug/L	ND	85.6	50-140			
m,p-Xylenes	72.5	0.5	ug/L	ND	90.7	60-130			
o-Xylene	33.8	0.5	ug/L	ND	84.4	60-130			
Surrogate: 4-Bromofluorobenzene	*79.9*		*%*		*99.9*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	*76.8*		*%*		*96.0*	*50-140*			
Surrogate: Toluene-d8	*83.3*		*%*		*104*	*50-140*			

Qualifier Notes:

Login Qualifiers :

Sample - Received with >5% sediment, directed by client to perform whole bottle extraction and include sediment

Applies to Samples: MW103

Sample Qualifiers :

3: Water sample included significant amount of sediment which was included in extraction process. The inclusion of sediment in the extraction is expected to reduce accuracy and results may be biased high.

Applies to Samples: MW103

QC Qualifiers:

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

PARACE LABORATORIES LT

Paracel ID: 2450539

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2450539	№ 77161

Client Name: Terraper Environmental	Project Ref: C0986-00
Contact Name: Greg Sabourin	Quote #: 90745-03 / City of Ottawa Job
Address: 1-20 Gurdwara Rd, Nepean, ON	PO #: City of Ottawa
Telephone: 613 745 6471	E-mail: g.sabourin@terraper.com

Page 1 of 1

Turnaround Time

☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular

Date Required:

☐ REG 153/04 ☐ REG 406/19	Other Regulation
☐ Table 1 ☐ Agri/Other ☐ Med/Fine	☐ REG 558 ☐ PWQO
☐ Table 2 ☒ Res/Park ☒ Coarse	☐ CCME ☐ MISA
☒ Table 3 ☐ Ind/Comm	☐ SU - Sani ☐ SU - Storm
☐ Table ___	Mun:
For RSC: ☐ Yes ☐ No	☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name		Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken Date	Sample Taken Time	Required Analysis: VOCs/PHC F1-F4 + BTEX	PAHs	Metals (Inorganics)
1	MW105D	BNK 308	GW		9	Y	13/12/2024	10:45	✓	✓	✓
2	MW101	309	"		3	N	11/12/2024	14:10	✓		
3	MW103	310	"		9	Y	"	14:30	✓	✓	✓
4	MW1005	311	"		9	Y	13/12/2024	10:45	✓	✓	✓
5											
6											
7											
8											
9											
10											

Comments: MW103 has sediments in it; Sample As is.

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot:	Received at Lab: JM	Verified By: SS
Relinquished By (Print): SREE	Date/Time:	Date/Time: 14-12-24 1220	Date/Time: 13 Dec 24 1427
Date/Time: 13/12/2024 11:30	Temperature: °C	Temperature: 7.3/°24.8	pH Verified: ☒ By: JM

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Certificate of Analysis

Terrapex Environmental Ltd. (Ottawa)
20 Gurdwara Rd. Unit #1
Ottawa, ON K2E 8B3
Attn: Greg Sabourin

Client PO:
Project: CO986.00/40 Beechcliffe Street
Custody: 77159

Report Date: 18-Dec-2024
Order Date: 13-Dec-2024

Order #: 2450540

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2450540-01	TRIP BLANK

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	16-Dec-24	17-Dec-24
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	16-Dec-24	17-Dec-24

	Client ID:	TRIP BLANK	-	-	-		
	Sample Date:	26-Nov-24 09:00	-	-	-	-	-
	Sample ID:	2450540-01	-	-	-		
	Matrix:	Water	-	-	-		
	MDL/Units						
Volatiles							
Acetone	5.0 ug/L	<5.0	-	-	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-	-	-
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	-	-	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-	-	-

	Client ID:	TRIP BLANK	-	-	-		
	Sample Date:	26-Nov-24 09:00	-	-	-	-	-
	Sample ID:	2450540-01	-	-	-		
	Matrix:	Water	-	-	-		
	MDL/Units						
Volatiles							
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-	-	-
4-Bromofluorobenzene	Surrogate	91.9%	-	-	-	-	-
Dibromofluoromethane	Surrogate	75.9%	-	-	-	-	-
Toluene-d8	Surrogate	112%	-	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
Volatiles								
Acetone	ND	5.0	ug/L					
Benzene	ND	0.5	ug/L					
Bromodichloromethane	ND	0.5	ug/L					
Bromoform	ND	0.5	ug/L					
Bromomethane	ND	0.5	ug/L					
Carbon Tetrachloride	ND	0.2	ug/L					
Chlorobenzene	ND	0.5	ug/L					
Chloroform	ND	0.5	ug/L					
Dibromochloromethane	ND	0.5	ug/L					
Dichlorodifluoromethane	ND	1.0	ug/L					
1,2-Dichlorobenzene	ND	0.5	ug/L					
1,3-Dichlorobenzene	ND	0.5	ug/L					
1,4-Dichlorobenzene	ND	0.5	ug/L					
1,1-Dichloroethane	ND	0.5	ug/L					
1,2-Dichloroethane	ND	0.5	ug/L					
1,1-Dichloroethylene	ND	0.5	ug/L					
cis-1,2-Dichloroethylene	ND	0.5	ug/L					
trans-1,2-Dichloroethylene	ND	0.5	ug/L					
1,2-Dichloropropane	ND	0.5	ug/L					
cis-1,3-Dichloropropylene	ND	0.5	ug/L					
trans-1,3-Dichloropropylene	ND	0.5	ug/L					
1,3-Dichloropropene, total	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L					
Hexane	ND	1.0	ug/L					
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L					
Methyl Isobutyl Ketone	ND	5.0	ug/L					
Methyl tert-butyl ether	ND	2.0	ug/L					
Methylene Chloride	ND	5.0	ug/L					
Styrene	ND	0.5	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L					
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L					
Tetrachloroethylene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
1,1,1-Trichloroethane	ND	0.5	ug/L					
1,1,2-Trichloroethane	ND	0.5	ug/L					
Trichloroethylene	ND	0.5	ug/L					
Trichlorofluoromethane	ND	1.0	ug/L					
Vinyl chloride	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: 4-Bromofluorobenzene	*72.6*		*%*	*90.7*	*50-140*			
Surrogate: Dibromofluoromethane	*60.5*		*%*	*75.6*	*50-140*			
Surrogate: Toluene-d8	*83.0*		*%*	*104*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*74.4*		*%*		*93.1*	*50-140*			
Surrogate: Dibromofluoromethane	*67.8*		*%*		*84.7*	*50-140*			
Surrogate: Toluene-d8	*85.2*		*%*		*106*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1900	25	ug/L	ND	110	85-115			
Volatiles									
Acetone	77.8	5.0	ug/L	ND	77.8	50-140			
Benzene	36.4	0.5	ug/L	ND	91.1	60-130			
Bromodichloromethane	33.5	0.5	ug/L	ND	83.8	60-130			
Bromoform	35.7	0.5	ug/L	ND	89.2	60-130			
Bromomethane	30.5	0.5	ug/L	ND	76.4	50-140			
Carbon Tetrachloride	32.1	0.2	ug/L	ND	80.2	60-130			
Chlorobenzene	36.4	0.5	ug/L	ND	91.1	60-130			
Chloroform	35.2	0.5	ug/L	ND	88.1	60-130			
Dibromochloromethane	34.6	0.5	ug/L	ND	86.6	60-130			
Dichlorodifluoromethane	33.5	1.0	ug/L	ND	83.6	50-140			
1,2-Dichlorobenzene	38.2	0.5	ug/L	ND	95.4	60-130			
1,3-Dichlorobenzene	37.5	0.5	ug/L	ND	93.7	60-130			
1,4-Dichlorobenzene	38.5	0.5	ug/L	ND	96.2	60-130			
1,1-Dichloroethane	36.1	0.5	ug/L	ND	90.4	60-130			
1,2-Dichloroethane	37.3	0.5	ug/L	ND	93.2	60-130			
1,1-Dichloroethylene	34.4	0.5	ug/L	ND	85.9	60-130			
cis-1,2-Dichloroethylene	34.5	0.5	ug/L	ND	86.3	60-130			
trans-1,2-Dichloroethylene	35.1	0.5	ug/L	ND	87.7	60-130			
1,2-Dichloropropane	34.4	0.5	ug/L	ND	85.9	60-130			
cis-1,3-Dichloropropylene	32.3	0.5	ug/L	ND	80.8	60-130			
trans-1,3-Dichloropropylene	31.3	0.5	ug/L	ND	78.2	60-130			
Ethylbenzene	39.3	0.5	ug/L	ND	98.2	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	31.0	0.2	ug/L	ND	77.6	60-130			
Hexane	34.8	1.0	ug/L	ND	87.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	72.3	5.0	ug/L	ND	72.3	50-140			
Methyl Isobutyl Ketone	67.2	5.0	ug/L	ND	67.2	50-140			
Methyl tert-butyl ether	85.1	2.0	ug/L	ND	85.1	50-140			
Methylene Chloride	34.0	5.0	ug/L	ND	85.0	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Styrene	36.6	0.5	ug/L	ND	91.6	60-130			
1,1,1,2-Tetrachloroethane	32.5	0.5	ug/L	ND	81.2	60-130			
1,1,2,2-Tetrachloroethane	32.1	0.5	ug/L	ND	80.4	60-130			
Tetrachloroethylene	39.9	0.5	ug/L	ND	99.7	60-130			
Toluene	37.6	0.5	ug/L	ND	94.1	60-130			
1,1,1-Trichloroethane	31.6	0.5	ug/L	ND	79.0	60-130			
1,1,2-Trichloroethane	32.3	0.5	ug/L	ND	80.8	60-130			
Trichloroethylene	35.6	0.5	ug/L	ND	89.0	60-130			
Trichlorofluoromethane	30.0	1.0	ug/L	ND	74.9	60-130			
Vinyl chloride	34.2	0.5	ug/L	ND	85.6	50-140			
m,p-Xylenes	72.5	0.5	ug/L	ND	90.7	60-130			
o-Xylene	33.8	0.5	ug/L	ND	84.4	60-130			
Surrogate: 4-Bromofluorobenzene	*79.9*		*%*		*99.9*	*50-140*			
Surrogate: Dibromofluoromethane	*76.8*		*%*		*96.0*	*50-140*			
Surrogate: Toluene-d8	*83.3*		*%*		*104*	*50-140*			

Certificate of Analysis

Report Date: 18-Dec-2024

Client: **Terrapex Environmental Ltd. (Ottawa)**

Order Date: 13-Dec-2024

Client PO:

Project Description: CO986.00/40 Beechcliffe Street

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

The Sample Date for lab provided Trip QC samples is based on the date of preparation at the lab.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

PARACE LABORATORIES

Paracel ID: 2450540

Blvd. 4J8

...s.com

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2450540	№ 77159

Client Name: Terraplex Environmental Ltd

Contact Name: Greg Sabourin

Address: 1-20 Guardsman Rd, Nepean, ON

Telephone: 613 745 6471

Project Ref: C0986.00

Quote #: Q0945.03 | city of ottawa Job

PO #: City of Ottawa

E-mail: g.sabourin@terraplex.com

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Turnaround Time

☐ 1 day ☐ 3 day

☐ 2 day ☑ Regular

Date Required:

☐ REG 153/04 ☐ REG 406/19

☐ Table 1 ☐ Agri/Other ☐ Med/Fine

☐ Table 2 ☑ Res/Park ☑ Coarse

☑ Table 3 ☐ Ind/Comm

☐ Table ___

For RSC: ☐ Yes ☐ No

Other Regulation

☐ REG 558 ☐ PWQO

☐ CCME ☐ MISA

☐ SU - Sani ☐ SU - Storm

Mun:

☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	Required Analysis: VOC / BTEX / PHC F1
1	TRIP BLANK BNK 312	✓		1	N	~~11/12/2024~~ Nov 26	~~14:30~~	1
2								
3								
4								
5								
6								
7								
8								
9								
10								

Comments: City of Ottawa Project / Nahid Acosteh 40 Beechcliffe

Method of Delivery: Walk in

Relinquished By (Sign):

Relinquished By (Print): SREE

Date/Time: 13/12/2024 11:30

Received at Depot:

Date/Time:

Temperature: °C

Received at Lab: JM

Date/Time: 12-13-24 1220

Temperature: 4.8 °C

Verified By: SS

Date/Time: 13 Dec 24 14.30

pH Verified: ☐ By:

APPENDIX VII
QA/QC RESULTS

APPENDIX VII: SUMMARY OF QA/QC SAMPLES AND RPD CALCULATIONS - GROUNDWATER
40 BEECHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	GROUNDWATER ALERT CRITERIA				MW111D	MW1111	RPD	TRIP BLANK
		FIELD DUPLICATE	BLANK	SPIKED RECOVERY					
				LOWER LIMIT	UPPER LIMIT				
Sample Type	-	-	-	-	-	PARENT	FIELD DUPLICATE	-	BLANK
Screen Interval	m bgs	-	-	-	-	3.4-6.4	3.4-6.4	-	#N/A
Sampling Date	dd-mmm-yy	-	-	-	-	12-Dec-24	12-Dec-24	-	26-Nov-24
Analysis Date (on or before)	dd-mmm-yy	-	-	-	-	24-Dec-24	24-Dec-24	-	#N/A
Certificate of Analysis No.	-	-	-	-	-	2450533	2450533	-	2450540
METALS									
Barium	ug/L	>20%	>RDL	<70%	>130%	69	66	4%	-
Beryllium	ug/L	>20%	>RDL	<70%	>130%	<0.5	<0.5	NC	-
Boron (Total)	ug/L	>20%	>RDL	<70%	>130%	70	71	1%	-
Cadmium	ug/L	>20%	>RDL	<70%	>130%	<0.1	<0.1	NC	-
Chromium Total	ug/L	>20%	>RDL	<70%	>130%	<1	<1	NC	-
Cobalt	ug/L	>20%	>RDL	<70%	>130%	3.4	3.4	0%	-
Copper	ug/L	>20%	>RDL	<70%	>130%	0.7	0.8	NC	-
Lead	ug/L	>20%	>RDL	<70%	>130%	<0.1	<0.1	NC	-
Molybdenum	ug/L	>20%	>RDL	<70%	>130%	4.9	5.0	2%	-
Nickel	ug/L	>20%	>RDL	<70%	>130%	12	12	0%	-
Silver	ug/L	>20%	>RDL	<70%	>130%	<0.1	<0.1	NC	-
Thallium	ug/L	>20%	>RDL	<70%	>130%	<0.1	<0.1	NC	-
Uranium	ug/L	>20%	>RDL	<70%	>130%	11.6	11.0	5%	-
Vanadium	ug/L	>20%	>RDL	<70%	>130%	<0.5	<0.5	NC	-
Zinc	ug/L	>20%	>RDL	<70%	>130%	<5	<5	NC	-
HYDRIDE-FORMING METALS									
Antimony	ug/L	>20%	>RDL	<70%	>130%	<0.5	<0.5	NC	-
Arsenic	ug/L	>20%	>RDL	<70%	>130%	<1	<1	NC	-
Selenium	ug/L	>20%	>RDL	<70%	>130%	<1	<1	NC	-
OTHER REGULATED PARAMETERS (ORPs)									
Cyanide (CN-)	ug/L	>20%	>RDL	<70%	>130%	<2	<2	NC	-
Chromium VI	ug/L	>20%	>RDL	<70%	>130%	<10	<10	NC	-
Mercury	ug/L	>20%	>RDL	<70%	>130%	<0.1	<0.1	NC	-
pH	-	0.3	>RDL	-	-	7.2	7.2	0%	-
Chloride	ug/L	>20%	>RDL	<70%	>130%	130	130	0%	-
Sodium	ug/L	>20%	>RDL	<70%	>130%	62800	62400	1%	-
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)									
Acenaphthene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Acenaphthylene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Anthracene	ug/L	>30%	>RDL	<50%	>140%	<0.01	<0.01	NC	-
Benz[a]anthracene	ug/L	>30%	>RDL	<50%	>140%	<0.01	<0.01	NC	-
Benzo[a]pyrene	ug/L	>30%	>RDL	<50%	>140%	<0.01	<0.01	NC	-
Benzo[b]fluoranthene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Benzo[ghi]perylene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Benzo[k]fluoranthene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Chrysene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Dibenz[a h]anthracene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Fluoranthene	ug/L	>30%	>RDL	<50%	>140%	<0.01	<0.01	NC	-
Fluorene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Indeno[1 2 3-cd]pyrene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Methlynaphthalene, 1-	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Methlynaphthalene, 2-	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Naphthalene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Phenanthrene	ug/L	>30%	>RDL	<50%	>140%	<0.05	<0.05	NC	-
Pyrene	ug/L	>30%	>RDL	<50%	>140%	<0.01	<0.01	NC	-
BENZENE, TOLUENE, ETHYBENZENE, XYLENES (BTEX)									
Benzene	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Toluene	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Ethylbenzene	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
m-Xylene & p-Xylene	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
o-Xylene	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
PETROLEUM HYDROCARBONS (PHCs)									
Petroleum Hydrocarbons F2	ug/L	30%	>RDL	<60%	>140%	<100	<100	NC	-
Petroleum Hydrocarbons F3	ug/L	30%	>RDL	60%	140%	<100	<100	NC	-
Petroleum Hydrocarbons F4	ug/L	30%	>RDL	<60%	>140%	<100	<100	NC	-
VOLATILE ORGANIC COMPOUNDS (VOCs)									
Acetone	ug/L	>30%	>RDL	<50%	>140%	<5.0	<5.0	NC	<5.0
Bromodichloromethane	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Bromoform	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Bromomethane	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Carbon Tetrachloride	ug/L	>30%	>RDL	<50%	>140%	<0.2	<0.2	NC	<0.2
Chlorobenzene	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Chloroform	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dibromochloromethane	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichlorobenzene, 1,2-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichlorobenzene, 1,3-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichlorobenzene, 1,4-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichlorodifluoromethane	ug/L	>30%	>RDL	<50%	>140%	<1.0	<1.0	NC	<1.0
Dichloroethane, 1,1-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichloroethane, 1,2-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichloroethylene, 1,1-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichloroethylene, 1,2-cis-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichloroethylene, 1,2-trans-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichloropropene,1,3-cis	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Dichloropropene,1,3-trans	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Ethylene dibromide	ug/L	>30%	>RDL	<50%	>140%	<0.2	<0.2	NC	<0.2
Hexane (n)	ug/L	>30%	>RDL	<50%	>140%	<1.0	<1.0	NC	<1.0
Methyl Ethyl Ketone	ug/L	>30%	>RDL	<50%	>140%	<5.0	<5.0	NC	<5.0
Methyl Isobutyl Ketone	ug/L	>30%	>RDL	<50%	>140%	<5.0	<5.0	NC	<5.0
Methyl tert-Butyl Ether (MTBE)	ug/L	>30%	>RDL	<50%	>140%	<2.0	<2.0	NC	<2.0
Methylene Chloride	ug/L	>30%	>RDL	<50%	>140%	<5.0	<5.0	NC	<5.0
Styrene	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Tetrachloroethane, 1,1,1,2-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Tetrachloroethane, 1,1,2,2-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Tetrachloroethylene	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Trichloroethane, 1,1,1-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Trichloroethane, 1,1,2-	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Trichloroethylene	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5
Trichlorofluoromethane	ug/L	>30%	>RDL	<50%	>140%	<1.0	<1.0	NC	<1.0
Vinyl Chloride	ug/L	>30%	>RDL	<50%	>140%	<0.5	<0.5	NC	<0.5

-	Not analyzed
m bgs	meters below ground surface
RPD	Relative percent difference
NC	RPD not calculable due to results <5x RDL or one and/or both results are <RDL
RDL	Reportable Detection Limit
Value	Exceeds applicable alert criteria or recovery range

APPENDIX VII: SUMMARY OF QA/QC SAMPLES AND RPD CALCULATIONS - SOIL
40 BEACHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	SOIL ALERT CRITERIA				MW110-1A	MW110-1D	RPD	MW111-2C	MW111-2D	RPD	TP107-2	TP107-12	RPD	Methanol Blank
		FIELD DUPLICATE	BLANK	SPIKED RECOVERY											
				LOWER LIMIT	UPPER LIMIT										
Sample Type	-	-	-	-	-	PARENT	FIELD DUPLICATE	-	PARENT	FIELD DUPLICATE	-	PARENT	FIELD DUPLICATE	-	BLANK
Sample Depth	m bgs	-	-	-	-	0.0-1.4	0.0-1.4	-	2.3-3.1	2.3-3.1	-	0.5-1.1	0.5-1.1	-	
Sampling Date	dd-mmm-yy	-	-	-	-	22-Nov-24	22-Nov-24	-	22-Nov-24	22-Nov-24	-	15-Jan-25	15-Jan-25	-	22-Nov-24
Analysis Date (on or before)	dd-mmm-yy	-	-	-	-	3-Dec-24	3-Dec-24	-	3-Dec-24	3-Dec-24	-	21-Jan-24	21-Jan-24	-	
Certificate of Analysis No.	-	-	-	-	-	2448154	2448154	-	2448154	2448154	-	2503397	2503397	-	2448144
METALS															
Barium	ug/g	>30%	>RDL	<70%	>130%	107	126	16%	306	280	9%	-	-	NC	-
Beryllium	ug/g	>30%	>RDL	<70%	>130%	<0.5	<0.5	NC	0.7	0.6	NC	-	-	NC	-
Boron (Total)	ug/g	>30%	>RDL	<70%	>130%	<5.0	<5.0	NC	5.9	5.9	NC	-	-	NC	-
Cadmium	ug/g	>30%	>RDL	<70%	>130%	<0.5	<0.5	NC	<0.5	<0.5	NC	-	-	NC	-
Chromium Total	ug/g	>30%	>RDL	<70%	>130%	25.6	26.4	3%	62.0	57.1	8%	-	-	NC	-
Cobalt	ug/g	>30%	>RDL	<70%	>130%	6.9	6.9	0%	14.6	13.8	6%	-	-	NC	-
Copper	ug/g	>30%	>RDL	<70%	>130%	18.9	18.9	NC	32.9	30.7	7%	-	-	NC	-
Lead	ug/g	>30%	>RDL	<70%	>130%	6.3	5.6	12%	5.2	4.9	NC	-	-	NC	-
Molybdenum	ug/g	>30%	>RDL	<70%	>130%	<1.0	<1.0	NC	<1.0	<1.0	NC	-	-	NC	-
Nickel	ug/g	>30%	>RDL	<70%	>130%	14.7	15.8	NC	35.5	32.1	10%	-	-	NC	-
Silver	ug/g	>30%	>RDL	<70%	>130%	<0.3	<0.3	NC	<0.3	<0.3	NC	-	-	NC	-
Thallium	ug/g	>30%	>RDL	<70%	>130%	<1.0	<1.0	NC	<1.0	<1.0	NC	-	-	NC	-
Uranium	ug/g	>30%	>RDL	<70%	>130%	<1.0	<1.0	NC	<1.0	<1.0	NC	-	-	NC	-
Vanadium	ug/g	>30%	>RDL	<70%	>130%	34.5	33.6	NC	65.4	60.7	7%	-	-	NC	-
Zinc	ug/g	>30%	>RDL	<70%	>130%	38.3	36.5	NC	78.6	73.2	NC	-	-	NC	-
HYDRIDE-FORMING METALS															
Antimony	ug/g	>30%	>RDL	<70%	>130%	<1.0	<1.0	NC	<1.0	<1.0	NC	-	-	NC	-
Arsenic	ug/g	>30%	>RDL	<70%	>130%	2.2	2.3	NC	2.5	2.7	NC	-	-	NC	-
Selenium	ug/g	>30%	>RDL	<70%	>130%	<1.0	<1.0	NC	<1.0	<1.0	NC	-	-	NC	-
OTHER REGULATED PARAMETERS (ORPs)															
Boron (Hot Water Soluble)	ug/g	>40%	>RDL	<60%	>140%	<0.5	<0.5	NC	-	-	NC	-	-	NC	-
Cyanide (CN-)	ug/g	>35%	>RDL	<70%	>130%	<0.03	<0.03	NC	-	-	NC	-	-	NC	-
Chromium VI	ug/g	>35%	>RDL	<70%	>130%	<0.2	<0.2	NC	-	-	NC	-	-	NC	-
Mercury	ug/g	>30%	>RDL	<70%	>130%	<0.1	<0.1	NC	-	-	NC	-	-	NC	-
pH	pH Units	0.3	>RDL	-	-	7.41	7.37	4%	-	-	NC	-	-	NC	-
Electrical Conductivity	uS/cm	>10%	>RDL	-	-	195	158	**21%**	-	-	NC	-	-	NC	-
Sodium Adsorption Ratio	N/A	-	>RDL	-	-	0.10	0.09	11%	-	-	NC	-	-	NC	-
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)												-			
Acenaphthene	ug/g	>40%	>RDL	<50%	>140%	<0.02	<0.02	NC	<0.02	-	NC	0.03	0.57	NC	-
Acenaphthylene	ug/g	>40%	>RDL	<50%	>140%	<0.02	<0.02	NC	<0.02	-	NC	0.15	0.48	**105%**	-
Anthracene	ug/g	>40%	>RDL	<50%	>140%	<0.02	<0.02	NC	<0.02	-	NC	0.24	1.95	**156%**	-
Benz[a]anthracene	ug/g	>40%	>RDL	<50%	>140%	<0.02	0.02	NC	<0.02	-	NC	0.52	1.66	**105%**	-
Benzo[a]pyrene	ug/g	>40%	>RDL	<50%	>140%	0.03	0.04	NC	<0.02	-	NC	0.47	1.26	**91%**	-
Benzo[b]fluoranthene	ug/g	>40%	>RDL	<50%	>140%	0.02	0.03	NC	<0.02	-	NC	0.47	1.37	**98%**	-
Benzo[ghi]perylene	ug/g	>40%	>RDL	<50%	>140%	<0.02	0.03	NC	<0.02	-	NC	0.29	0.76	**90%**	-
Benzo[k]fluoranthene	ug/g	>40%	>RDL	<50%	>140%	<0.02	0.02	NC	<0.02	-	NC	0.31	0.88	**96%**	-
Chrysene	ug/g	>40%	>RDL	<50%	>140%	<0.02	0.04	NC	<0.02	-	NC	0.48	1.69	**112%**	-
Dibenz[a h]anthracene	ug/g	>40%	>RDL	<50%	>140%	<0.02	<0.02	NC	<0.02	-	NC	0.08	0.21	NC	-
Fluoranthene	ug/g	>40%	>RDL	<50%	>140%	0.05	0.08	NC	<0.02	-	NC	1.40	7.09	**134%**	-
Fluorene	ug/g	>40%	>RDL	<50%	>140%	<0.02	<0.02	NC	<0.02	-	NC	0.03	0.93	NC	-
Indeno[1 2 3-cd]pyrene	ug/g	>40%	>RDL	<50%	>140%	<0.02	0.02	NC	<0.02	-	NC	0.29	0.83	**96%**	-
Methlynaphthalene, 1-	ug/g	>40%	>RDL	<50%	>140%	<0.02	<0.02	NC	<0.02	-	NC	<0.02	0.17	NC	-
Methlynaphthalene, 2-	ug/g	>40%	>RDL	<50%	>140%	<0.02	<0.02	NC	<0.02	-	NC	<0.02	0.20	NC	-
Methlynaphthalene, 2-(1-)	ug/g	-	>RDL	-	-	<0.04	<0.04	NC	<0.04	-	NC	<0.04	0.37	NC	-
Naphthalene	ug/g	>40%	>RDL	<50%	>140%	<0.01	<0.01	NC	<0.01	-	NC	<0.01	0.22	NC	-
Phenanthrene	ug/g	>40%	>RDL	<50%	>140%	<0.02	0.03	NC	<0.02	-	NC	0.52	7.44	**174%**	-
Pyrene	ug/g	>40%	>RDL	<50%	>140%	0.05	0.07	NC	<0.02	-	NC	1.20	4.97	**122%**	-
BENZENE, TOLUENE, ETHYBENZENE, XYLENES (BTEX)															
Benzene	ug/g	>50%	>RDL	<50%	>140%	<0.02	-	NC	<0.02	<0.02	NC	-	-	NC	<0.02
Toluene	ug/g	>50%	>RDL	<50%	>140%	<0.05	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Ethylbenzene	ug/g	>50%	>RDL	<50%	>140%	<0.05	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
m-Xylene & p-Xylene	ug/g	>50%	>RDL	<50%	>140%	<0.05	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
o-Xylene	ug/g	>50%	>RDL	<50%	>140%	<0.05	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
PETROLEUM HYDROCARBONS (PHCs)												-			
Petroleum Hydrocarbons F2	ug/g	30%	>RDL	<60%	>140%	<4	-	NC	<4	<4	NC	-	-	NC	-
Petroleum Hydrocarbons F3	ug/g	30%	>RDL	60%	140%	<8	-	NC	<8	<8	NC	-	-	NC	-
Petroleum Hydrocarbons F4	ug/g	30%	>RDL	<60%	>140%	<6	-	NC	<6	<6	NC	-	-	NC	-

TERRAPEX

APPENDIX VII: SUMMARY OF QA/QC SAMPLES AND RPD CALCULATIONS - SOIL
40 BEACHCLIFFE STREET, OTTAWA, ONTARIO

SAMPLE NAME	UNITS	SOIL ALERT CRITERIA				MW110-1A	MW110-1D	RPD	MW111-2C	MW111-2D	RPD	TP107-2	TP107-12	RPD	Methanol Blank
		FIELD DUPLICATE	BLANK	SPIKED RECOVERY											
				LOWER LIMIT	UPPER LIMIT										
Sample Type	-	-	-	-	-	PARENT	FIELD DUPLICATE	-	PARENT	FIELD DUPLICATE	-	PARENT	FIELD DUPLICATE	-	BLANK
Sample Depth	m bgs	-	-	-	-	0.0-1.4	0.0-1.4	-	2.3-3.1	2.3-3.1	-	0.5-1.1	0.5-1.1	-	
Sampling Date	dd-mmm-yy	-	-	-	-	22-Nov-24	22-Nov-24	-	22-Nov-24	22-Nov-24	-	15-Jan-25	15-Jan-25	-	22-Nov-24
Analysis Date (on or before)	dd-mmm-yy	-	-	-	-	3-Dec-24	3-Dec-24	-	3-Dec-24	3-Dec-24	-	21-Jan-24	21-Jan-24	-	
Certificate of Analysis No.	-	-	-	-	-	2448154	2448154	-	2448154	2448154	-	2503397	2503397	-	2448144
VOLATILE ORGANIC COMPOUNDS (VOCs)														NC	
Acetone	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.50	<0.50	NC	-	-	NC	<0.50
Bromodichloromethane	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Bromoform	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Bromomethane	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Carbon Tetrachloride	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Chlorobenzene	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Chloroform	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dibromochloromethane	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichlorobenzene, 1,2-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichlorobenzene, 1,3-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichlorobenzene, 1,4-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichlorodifluoromethane	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichloroethane, 1,1-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichloroethane, 1,2-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichloroethylene, 1,1-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichloroethylene, 1,2-cis-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichloroethylene, 1,2-trans-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichloropropene,1,3-cis	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Dichloropropene,1,3-trans	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Ethylene dibromide	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Hexane (n)	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Methyl Ethyl Ketone	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.50	<0.50	NC	-	-	NC	<0.50
Methyl Isobutyl Ketone	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.50	<0.50	NC	-	-	NC	<0.50
Methyl tert-Butyl Ether (MTBE)	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Methylene Chloride	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Styrene	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Tetrachloroethane, 1,1,1,2-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Tetrachloroethane, 1,1,2,2-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Tetrachloroethylene	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Trichloroethane, 1,1,1-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Trichloroethane, 1,1,2-	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Trichloroethylene	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Trichlorofluoromethane	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.05	<0.05	NC	-	-	NC	<0.05
Vinyl Chloride	ug/g	>50%	>RDL	<50%	>140%	-	-	NC	<0.02	<0.02	NC	-	-	NC	<0.02

-	Not analyzed
m bgs	meters below ground surface
RPD	Relative percent difference
NC	RPD not calculable due to results <5x RDL or one and/or both results are <RDL
RDL	Reportable Detection Limit
Value	Exceeds applicable alert criteria or recovery range

APPENDIX VIII
PHASE TWO CONCEPTUAL SITE MODEL

PHASE TWO CONCEPTUAL SITE MODEL
SOUTHERN PORTION OF 40 BEECHCLIFFE STREET IN OTTAWA, ONTARIO

A preliminary conceptual site model (CSM) was developed as part of the Phase One ESA which is discussed in Section 4.3 of the Phase Two ESA report. Following completion of the Phase Two ESA field program, the CSM has been updated to present the Site characteristics (prior to any efforts to reduce contaminant concentrations), identify and evaluate areas of contaminant impact, including their sources, exposure routes, and receptors at risk.

The Phase Two CSM narrative is provided below, illustrated and supported by Figures 1 through 23 (attached).

Requisite Component	Description & Assessment
Section 1. A description and assessment of,	
i. Areas where potentially contaminating activity (PCA) has occurred,	A total of one on-Site and two off-Site PCAs are deemed to have affected the property, as summarized in Table 2, appended. The locations of all PCAs within the Phase One Study Area are shown in Figure 4.
ii. areas of potential environmental concern (APECs),	A total of two APECs have been identified associated with the aforementioned on-Site and off-Site PCAs, as summarised in the appended Table 3 and on Figure 5A.
iii. any subsurface structures and utilities on, in or under the Phase Two Property that may affect contaminant distribution and transport.	During the Phase Two ESA work program, local utility companies were contacted in order to obtain stake outs and clearance with respect to buried services under the Phase Two Property. Private locating companies (Multiview Locates Inc. & USL-1) were also retained to provide clearance with respect to buried services in the drill and test pit excavation areas. Underground utilities at the Phase Two Property included storm and sanitary sewer lines, natural gas, electrical and telephone. These utilities are typically at depths ranging from 0.3 to 3.0 m below ground surface (bgs). Based on the presence of the sanitary and storm sewer at the Site, it may affect the shallow groundwater flow direction and thus may affect contaminant distribution. The depth of groundwater was measured to be at least 4.62 m bgs and the results of the Phase Two ESA indicate that the groundwater conditions at the Phase Two Property meet the Table 3 SCS. Sanitary and torm sewer are shown in the drawings and cross sections where applicable..
Section 2. Provide a narrative description of and, as appropriate, figures illustrating, the physical setting of the Phase Two Property and any areas under it including,	The Phase Two Property measures with an average ground surface elevation of 89 m above sea level (asl). Pertinent current and former site features are summarized in Figure 2. The Phase One Study Area (“surrounding area”) covers land uses within a 250 m radius of the Phase Two Property, as shown in Figure 3. There are no water bodies, permanent streams, rivers or similar watercourses, ponds, or areas of natural significance on the Phase Two Property or within the 250 m Phase One Study Area, as shown in Figure 3.
i. stratigraphy from ground surface to the deepest aquifer or aquitard investigated,	Fill material generally extended to depths of 2.6 m bgs throughout the Phase Two Property. The fill layer generally comprised brown and/or grey sand, gravel, and sandy to clayey silt, with occasional asphalt. The fill was underlain by native strata of silty clay to depths of 4.0 m bgs overlying sand to a depth of 6.1 m bgs (the maximum depth of investigation). Bedrock was not encountered during the investigation. Please refer to Cross-Sections A-A’, and B-B’, presented as Figures 6A, and 6B, respectively. The locations of the Cross-Sections are shown on Figure 5B.

Requisite Component	Description & Assessment
ii. hydrogeological characteristics, including aquifers, aquitards and, in each hydrostratigraphic unit where one or more contaminants is present at concentrations above the applicable site condition standards, lateral and vertical gradients,	Chemical impacts to soil and groundwater were identified at the southern portion of the Site. At this location fill material was identified as impacted with PAH parameters to a maximum inferred depth of 2.3 m bgs. There is a single hydrostratigraphic unit at the Phase Two Property, which extends to at least 6.1 m bgs. Groundwater monitoring wells completed for the investigation of chemical impacts to groundwater were installed to intersect groundwater strikes revealed during borehole drilling. The shallow groundwater was generally encountered within the silty clay to sand stratum at depths ranging between 4.62 to 4.89 m bgs. A lateral gradient of 0.020 was calculated with a flow direction towards the northeast. The QP determined that the soil at the Site is classified as coarse-textured (per the definitions of O. Reg. 153/04), as more than one-third of the soil (measured by volume) constitutes coarse-textured soil especially considering the presence of the native sand material underlying the native silty clay layer.
iii. approximate depth to bedrock,	Lower Ordovician dolostone, sandstone of the Beekmantown Group at is estimated at approximately 21 m bgs. Bedrock was not encountered during the subsurface investigations, which reached the maximum depth of 6.1 m bgs.
iv. approximate depth to water table,	Based on observations during borehole drilling and water level measurements, the shallow water table generally resides in the silty sand to sand stratum at depths ranging between 3.5 and 5.0 m bgs. Please refer to Figure 7.
v. any respect in which section 35, 41 or 43.1 of the regulation applies to the property,	Section 35 is not applicable. Ministry of Environment, Conservation and Parks (MECP) Well Records Dataset and ERIS Water Well Information System database report 17 well records on properties wholly or partially within 250 m radius of the Phase Two Property (Figure 3), two of which were identified for use for potable water supply. Based on date of installation of the wells and the redevelopment in the area it is not believed that these supply wells are still in use. The Phase Two Property is not located in an area designated in the municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of groundwater (IPZ 8.1). All properties within 250 m radius of the Phase Two Property boundaries are deemed to be supplied by a municipal drinking water system. The City of Ottawa has provided written confirmation (mmm dd, yyyy) that it does not object to the application of non-potable groundwater site condition standards in relation to environmental assessment of the Phase Two Property. Section 41 is not applicable. No Areas of Natural Significance were identified on the Phase Two Property, or in the Phase One study area. A total of 13 samples (including two duplicates) of surface and subsurface soil were collected from the Phase Two Property at various depths (including “surface” and “subsurface” samples) and analyzed for pH. The pH for surface and subsurface soils ranges between 7.3 and 75.0 (surface soil), and were 7.38 (subsurface soil), and are within acceptable limits. Section 43.1 is not applicable. The Phase Two Property is not considered to be a shallow soil property. The Phase Two Property does not include, nor is located within, 30 m of a water body.
vi. areas on, in or under the Phase Two Property where excess soil is finally placed, and	Although fill materials exist at the Phase Two Property, no soil has been imported to the Phase Two Property from another property during or subsequent to this Phase Two ESA.
vii. approximate locations, if known, of any proposed buildings and other structures.	It is proposed that new residential multi-storey buildings be constructed at the Site.

Requisite Component	Description & Assessment
Section 3. Provide where a contaminant is present, in or under the Phase Two Property at a concentration greater than the applicable site condition standard, identification of,	The evaluation of impacts in soil and groundwater is based upon analytical data obtained during this Phase Two ESA.
i. each area where a contaminant is present on, in or under the Phase Two Property at a concentration greater than the applicable site condition standard,	Figures 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20 illustrate sampling locations with respect to the APECs for soil and groundwater for the various parameter groups. Impact Area 1 (southern portion): Soils impacted with PAHs to maximum inferred depths of 1.6 and 2.3 m bgs, respectively.
ii. the contaminants associated with each of the areas referred to in subparagraph A,	Impact Area 1 • PAHs (acenaphthylene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]fluoranthene, benzo[k]fluoranthene, dibenz[a h]anthracene, fluoranthene, indeno[1 2 3-cd]pyrene and phenanthrene)
iii. each medium in which a contaminant associated with an area referred to in subparagraph is present,	Impact Area 1 • PAHs (acenaphthylene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]fluoranthene, benzo[k]fluoranthene, dibenz[a h]anthracene, fluoranthene, indeno[1 2 3-cd]pyrene and phenanthrene) - soil
iv. a description and assessment of what is known about each of the areas referred to in subparagraph A,	Impact Area 1 • Impact Area 1 is located to the south of the sanitary sewer located on the southeastern portion of the Site. The PAH impacts are present in the fill layer which has an approximate depth of between 1.5 to 2.3 m bgs. The fill layer is described as silty sand with trace amounts of gravel with various amounts of anthropogenic debris consisting of brick, asphalt and wood. The impact area is generally congruent with the area of the disturbed soil visible in the 1965 aerial Photograph. The area of impact could have potentially also affected by the construction work visible in 2012 aerial photograph.
v. the distribution, in each of the areas referred to in subparagraph A, of each contaminant present in the area at a concentration greater than the applicable site condition standard, for each medium in which the contaminant is present, together with figures showing the distribution,	Figures 11A through 11C show the distribution of contaminant impacts to soil beneath the Phase Two Property. Impact Area 1 The PAH impacted fill material present in the southeastern portion of the Site were identified in sample locations MW111/MW111D, BH113, TP107, TP108, and TP109. Maximum concentrations of PAH parameters were identified at test pit TP107 (duplicate sample TP107-12). Vertical delineation of the PAH impacted fill was provided by soil samples MW111-2C and TP107-4 which are located at maximum depth of 2.3 m bgs, collected in the underlying native silty clay soil. The PAH soil impacts likely extend to the Site's southern and eastern property boundaries. Delineation to the north is provided by sampling locations TP103, TP104 and TP106. Delineation to the west is provided by TP110, BH112 and TP111.
vi. Anything known about the reason for the discharge of the contaminants present on, in or under the Phase Two Property at a concentration greater than the applicable site condition standard into the natural environment,	Impact Area 1 PAH contaminant to fill material is anticipated to be related to APEC 1.
vii. Anything known about migration of the contaminants	Impact Area 1

Requisite Component	Description & Assessment
present on, in or under the Phase Two Property at a concentration greater than the applicable site condition standard away from any area of potential environmental concern, including the identification of any preferential pathways,	PAH impacts appear to be immobile and unlikely to migrate. No groundwater impacts were identified at MW111D (where soil impacts were identified) as additional support that the soil impacts are unlikely to migrate.
viii. Climatic or meteorological conditions that may have influenced distribution and migration of the contaminants, such as temporal fluctuations in groundwater levels, and	Climatic or meteorological conditions could influence the distribution and migration of any identified contaminants by raising or lowering the groundwater table. Since the PAH impacts in Impact Area 1 are located in the fill material, which is in the unsaturated zone, it is unlikely to be affected by climatic or meteorological conditions.
ix. If applicable, information concerning soil vapour intrusion of the contaminants into building including, (A) relevant construction features of a building, such as a basement or crawl space, (B) building heating, ventilation and air conditioning design and operation, (C) subsurface utilities.	Soil vapour intrusion has not been assessed for the PAH impacts.

Requisite Component	Description & Assessment
Section 4. Provide, where contaminants on, in or under the phase two property are present at concentrations greater than the applicable site condition standard, two or more cross-sections showing, by parameter group as defined in the Analytical Protocol for which a contaminant has been analysed, i. the lateral and vertical distribution of each contaminant in each area where the contaminant is present at a concentration greater than the applicable site condition standard in soil, ground water and sediment, ii. approximate depth to water table in each area referred to in subparagraph i, iii. stratigraphy from ground surface to the deepest aquifer or aquitard investigated, and iv. any subsurface structures and utilities that may affect contaminant distribution and transport in each area referred to in subparagraph i.	Impacts to Soil Cross-sections describing the vertical and lateral distribution of impacts to soil from PAHs are shown in the following Figures: • Figure 11A: Soil Contaminant Delineation – PAHs (Plan View) • Figure 11B: Soil Contaminant Delineation – PAHs (Section A-A') • Figure 11C: Soil Contaminant Delineation – PAHs (Section B-B') Impacts to Groundwater Not Applicable as all of the groundwater samples met the applicable Table 3 SCS.
Section 5. Provide, for each area where a contaminant is present on, in or under the property at a concentration greater than the applicable site condition standard for the contaminant, a diagram identifying, with narrative explanatory notes, i. the release mechanisms, ii. contaminant transport pathway, iii. the human and ecological receptors located on, in or under the phase two property, iv. receptor exposure points, and v. routes of exposure.	APEC 1 is related to the presence of PAH contaminant to the shallow fill layer beneath the southeastern portion of the Site. The presence of the PAH impacted fill is likely related to the importation of the fill. As the Phase Two Property is located in an urban area where groundwater is not extracted for potable consumption, potable water consumption pathway is not considered viable. There are no surface water bodies or areas of sediment present on the Phase Two Property, and as such these do not represent contaminant receptors. Generally, impacts can be transported through one or more of the following release mechanisms and transport pathways: • Contaminant leaching: Contaminants leach from the fill materials into surrounding soils and groundwater due to water infiltration and moisture movement. • Groundwater migration: contaminants dissolved in groundwater and migrated laterally and vertically. • Soil vapour migration: vapour can move through soil pores depending on soil permeability and vapour pressure. • Volatilization and vapour intrusion: vapour can volatilize from soil r into air depending on the physical condition of the environment and the chemical properties of COC. . Based on the results, the PAH impacts appear limited to the fill material on a portion of the Site. Based on the limited extent of the impacts and the nature of the contaminants, the risk of migration appears to be low. As future land use for the Site is residential, human receptors include resident, property visitor, subsurface worker, outdoor worker, and indoor worker.

Requisite Component	Description & Assessment
	Complete human health pathways include direct contact with soil (via incidental ingestion, dermal contact, and inhalation of particulates),, inhalation of soil contaminants of concern (CoCs) vapour in indoor air, and inhalation of soil CoCs vapour in outdoor / trench air. Based on the proposed residential property use, the anticipated ecological receptors include soil invertebrates and terrestrial plants, mammals and birds, and off-site aquatic receptors. Completed ecological pathways include the following: plants and soil invertebrates may be in direct soil contact (root uptake or dermal and/or ingestion), indirect soil contact (plant / stem / foliar uptake or inhalation of volatile/particulate in ambient air), or inhalation of volatile COCs in ambient air); mammals and birds may be in direct contact with impacted soil, ingestion of prey items, inhalation of volatiles/particulates in ambient air. As such, the release mechanisms, contaminant transport pathways, human and ecological receptors, receptor exposure points, and routes of exposure for the two APECs are presented in Figures 22A and 22B, respectively.
Section 6. If a non-standard delineation was conducted in accordance with section 7.1 of this Schedule as part of preparing the phase two environmental site assessment report, provide a narrative description of how the non-standard delineation satisfies the requirements in that section.	Not Applicable – A risk assessment has not been conducted for the Phase Two Property.
Section 7. If the exemption set out in paragraph 1, 1.1 or 2 of section 49.1 of the regulation is being relied upon, provide a statement as to the reliance upon the exemption and a narrative description of the rationale for relying upon the exemption, which may be based on information gathered during the site investigation.	Section 49.1 provides exemption if applicable site conditions standards are exceeded on the basis that: (1.) substances applied to surfaces for safety of vehicular or pedestrian traffic under conditions of snow or ice or both. (1.1) excess soil deposited at the Phase Two Property for final placement meets the soil quality standards that apply to the Phase Two Property as determined in accordance with the Excess Soil Standards (2.) due to a discharge of drinking water within the meaning of the Safe Drinking Water Act, 2002 Paragraph 1. of Section 49.1 is not being relied upon. Paragraphs 1.1 and 2 of section 49.1 are not being relied upon.
Section 8. If the exemption set out in paragraph 3 of section 49.1 of the regulation is being relied upon, provide, i. a statement as to the reliance upon the exemption, ii. a narrative description of the rationale for relying upon the exemption, which may be based on information gathered during the site investigation, and iii. one or more cross-sections and one or more figures in plan view of the phase two property that demonstrate, through identification of sample locations, sample depths and contaminant concentrations, the distribution of the contaminant in question laterally and vertically and the	Paragraph 3 of section 49.1 provides exemption if applicable site conditions standards are exceeded on the basis that the concentration of the contaminant does not exceed naturally occurring range of concentrations of that contaminant typically found within the area in which the Phase Two Property is located. Paragraph 3 of section 49.1 is not being relied upon.

Requisite Component	Description & Assessment
range of concentrations of that contaminant on, in or under the phase two property.	

The Phase Two CSM is based on the following Phase Two ESA summary information:

Terrapex was retained by the City of Ottawa (the City) to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 40 Beechcliffe Street, Ottawa, Ontario (the Phase Two Property, hereinafter also referred to as the Site).

It is understood that the Client is proposing to develop portions of the Site with a housing development. The Site has never been developed. However, instances of possible fill placement were identified in 1965 and during construction work associated with the installation of a sanitary sewer in 2012 which crosses the Site. The proposed change from a vacant property to residential development does not require the filing of a Record of Site Condition (RSC), per Ontario Regulation (O. Reg. 153/04) under the Environmental Protection Act (*Records of Site Condition – Part XV.1 of the Act*).

The date the last work on all of the planning of the site investigation, conducting the site investigation and reviewing and evaluating the information gathered through the site investigation required for the Phase Two ESA (per Section 35.5 (1) (a) of O. Reg. 153/04) is February 1, 2025, the date the Qualified Person reviewed the final laboratory results pertaining to samples recovered from the Phase Two Property.

A Phase One ESA was completed by Terrapex in January 2025 in accordance with the requirements of O. Reg. 153/04; the date of last work being January 17, 2025. The Phase One ESA identified three areas of potential environmental concern (APECs) at the Site, resulting from past importation of fill to the Site and off-Site properties.

The Phase Two ESA was subsequently conducted by Terrapex to investigate the environmental quality of soil and groundwater at and in the vicinity of the APECs identified at the Site. The Phase Two ESA consisted of the completion of seven boreholes to a maximum depth of 6.1 m bgs, installation of six groundwater monitoring wells (including the replacement of the three initial monitoring wells that were found to be dry), and the collection of soil and groundwater samples for laboratory analysis to augment previous sampling and analysis of contaminants of potential concern (COPCs) identified for the Site. An additional 13 test pits were excavated for delineation purposes.

A summary of the COPC sampling locations for each APEC and potentially affected media is provided in the table below.

SUMMARY OF SAMPLING LOCATIONS

APEC	MEDIA POTENTIALLY IMPACTED	CONTAMINANTS OF POTENTIAL CONCERN	SAMPLING LOCATIONS	
			SOIL	GROUNDWATER
APEC 1 (Imported Fill)	Soil (Fill Material)	Metals & Inorganics	BH107-1B. BH108-1A, MW109-1A, MW110-1A,MW111-B, BH112-1B.	
		PAHs	BH107-1B. BH108-1A, MW109-1A, MW110-1A, MW111-B, MW111-2C, MW111D-5, BH112-1B, BH113-1, BH114-1 TP103-2, TP103-4, TP104-2, TP106-3, TP107-2, TP107-4, TP108-2, TP109-1, TP110-2 and TP11-3.	
		PHCs F1-F4	MW107-1B. BH108-1A, MW109-1A, MW110-1A MW111-B, MW111-2C and BH112-1B.	
		BTEX	MW107-1B. BH108-1A, MW109-1A, MW110-1A, MW111-B, MW111-2C and BH112-1B.	
APEC 2 (Former garage and current retail fuel outlet)	Soil & Groundwater	Metals (including HFM metals)	MW109-3A and MW111-2C	MW109D and MW111D
		PHCs F1-F4	MW109-3A and MW111-2C	MW109D and MW111D
		BTEX	MW109-3A and MW111-2C	MW109D and MW111D
		VOCs	MW109-3A and MW111-2C	MW109D and MW111D
Supplemental Analysis*	N/A	PHCs F1-F4	BH107-3A	MW110D
		BTEX	BH107-3A	MW110D
		VOCs	BH107-3A	MW110D
		ORPs		MW111D
		PAHs		MW111D

BTEX: *Benzene, toluene, ethylbenzene, xylene*
PHCs: *Petroleum hydrocarbons (fractions F1 to F4)*
PAHs: *Polycyclic aromatic hydrocarbons*
VOCs: *Volatile Organic Compounds*
HFM: *hydride forming metals*
ORPs: *Other Regulated Parameters*

Due to the proposed development of the Site for residential property use, the generic full-depth Ministry of the Environment, Conservation and Parks (MECP) SCS applicable to residential property use in a non-potable groundwater condition with coarse-textured soil (Table 3 SCS) was selected to evaluate soil and groundwater quality at the Site.

Based on field observations and an evaluation of soil and groundwater quality data, the following conclusions are provided:

- The soil stratigraphy encountered in the boreholes and test pits at the Site generally consisted of a fill material consisting of sand containing varying gravel fractions ranging from some gravel to gravelly, trace silt, organics and/or construction debris. The fill materials were underlain by a deposit of native brownish olive silty clay, overlying grey sand soil. The colour of the native sand becomes brownish grey or grey at depths between 3 and 4 m bgs, and the boreholes were terminated within the sand deposit at depths between 4.5 to 6.1 m bgs, which represents the maximum depth of investigation.
- In December 2024, monitoring wells MW109D, MW110D, and MW111D were monitored. During the December 2024 monitoring event, the depth to groundwater was measured between 4.62 m bgs (MWMW109D) and 4.89 m bgs (MW111D).
- The findings of the December 11, 2024 monitoring event indicated that the groundwater flow is towards the northeast. The groundwater flow direction was likely influenced by the presence of nearby storm and sanitary sewer which transverse the southern portion of the Site. The groundwater monitoring data is summarised in Table 4 (appended) and the interpreted groundwater elevation contours are shown on Figure 7.
- No evidence of non aqueous phase liquids (i.e., NAPL) or free-product was encountered during monitoring, purging, or sampling of the monitoring wells.
- Comparison of the soil analytical results identified concentrations of PAH parameters greater than the Table 3 SCS; specifically present within the fill layer at the southeastern portion of the Site. All other parameters did not exhibit any concentrations greater than the Table 3 SCS.
- Comparison of the laboratory results to the Table 3 SCS did identify any groundwater contaminants at the Site.

Based on the findings of the Phase Two ESA, the environmental quality of soil and groundwater at the Site does not meet the Table 3 SCS. Therefore, an RSC cannot be filed for the Site unless a full-depth soil remediation and/or a risk assessment is completed in accordance with the requirements of O. Reg. 153/04. However, it is Terrapex's understanding that there in no intention to file an RSC at this time.

APPENDIX IX
QUALIFICATIONS OF ASSESSORS

KEITH BROWN, P.Eng., QP_{ESA}

Position: Senior Project Manager, Ottawa Office

Qualifications: B.Sc. (Eng) Environmental

Experience:

Terrapex Environmental Ltd.	2003 to present
Terrapex Environnement Ltée.	2000 to 2003
Regional Municipality of Ottawa – Carleton	May to Sep. 1999

Mr. Brown is a senior project manager responsible for supervising site assessments, and remediations for various residential, commercial and petroleum clients. Mr. Brown has conducted numerous Phase I/One Environmental Site Assessments (ESA), including historical research, site inspection and report preparation. Mr. Brown has extensive experience in Phase II/Two ESAs, small- and large-scale site remediations (both in-situ and ex-situ), environmental monitoring programs for sites impacted with petroleum, VOCs, PAHs and/or heavy metals, air sampling, peer reviews, and data interpretation. Mr. Brown is registered with the Ontario Ministry of the Environment, Conservation and Parks (MECP) as a Qualified Person (QP) for undertaking Environmental Site Assessment activities and certifying Records of Site Condition (RSC). He also provides senior technical review on all reports/correspondence issued for his projects. More recently, Mr. Brown has assumed a supervisor role responsible for personnel management, and quality control. His major clients have included Parkland Corp., Valero Energy Inc., Canadian Tire, Tim Hortons, and Minto Properties Inc.

Representative projects include the following:

Parkland Corp. Account Manager and Senior Technical Reviewer. Since 2013, Mr. Brown has been responsible for assigning work requests in Ontario. This includes managing projects (administering budgets, allocating technical resources, arranging subcontractors, and adhering to schedules), regular client updates; conducting data review/analysis; preparing ESA and remediation workplans and budget estimates; data interpretation, overall QA/QC of correspondence and reports, reviewing invoices and liaising with the public and regulatory agencies if required.

Valero Energy Inc. Account Manager and Senior Technical Reviewer. Since 2019, responsible for overseeing compliance sampling, site assessments and site investigations, overall QA/QC of correspondence and reports, and liaising with regulatory agencies if required.

Project Manager, Senior Technical Reviewer and QP for a project to complete a risk assessment and obtain a Record of Site Condition (RSC) of a petroleum hydrocarbon impacted site in Ottawa. This project included a data gap analyses, completion of a Phase One and Two ESA, supplemental investigations to assess soil vapour and sub-slab soil vapour conditions, development of a conceptual site model, preparation of a human health and ecological risk assessment, liaison with the MECP and other stakeholders.

Project Manager, Senior Technical Reviewer and QP for the completion of a multi-stage Phase Two ESA as part of the proposed development of a bulk fuel. Mr. Brown reviewed the previously completed Phase One ESA to identify any data gaps, developed the sampling and analysis plan to assess all the areas of potential environmental concern (APECs) for the identified contaminants of concern (COCs), directed the assessment work, reviewed the analytical results, developed the conceptual site model (CSM) and had overall responsibility for the Phase Two ESA in accordance with the requirements of O. Reg. 153/04.

Project Manager, Senior Technical Reviewer for a remediation project that included the excavation around the perimeter of two adjacent residences to expose the foundation and to allow for removal of a waterproofing membrane previously applied by others that was linked to chemical odours in the residences. It was further determined that during application the waterproofing product had been diluted with a xylene-based solved. The former waterproofing membrane was removed and necessary remediation was conducted, including excavation beneath the footing of one of the residences to excavate contaminated soil. In total 412.12 tonnes of soil and 3,620 L of water was pumped from the excavation as part of the remediation. Terrapex also assist with monitoring vapour concentrations inside the residences over the course of the project (indoor air sampling was conducted by another consultant).

GREGORY SABOURIN, P.Eng.

Education:	B.Eng. Environmental Engineering	2010	Carleton University, Ottawa
Professional Associations:	Professional Engineers of Ontario (PEO) – Membership Number: 100165530		

EXPERIENCE 2010 to present – Terrapex Environmental Ltd., Ottawa, Ontario

Mr Sabourin is project manager responsible for supervising environmental site assessments for various municipal residential, commercial and developer clients. Mr. Sabourin has a wide variety of field experience including but not limited to borehole drilling, groundwater sampling, soil and sub-slab vapor sampling, and remedial supervision. Mr. Sabourin Mr. Sabourin is registered with the Ontario Ministry of the Environment, Conservation and Parks (MECP) as a Qualified Person (QP) for undertaking Environmental Site Assessment activities and certifying Records of Site Condition (RSC) and has experience filing in the registry.

PROJECT EXPERIENCE

Municipal client: Completed several Phase I environmental site assessments (ESA) at properties owned by a municipality compliant with CSA standards. The work completed included site inspections to identify visible signs and/or potential sources of contamination possible, contaminant transport pathways, and potential receptors. Conducted interviews with relevant people who had a connection to the site. Conducted research and reviewed available documents including requesting information from public and private entities; interpreting aerial photographs; reviewing city directories, and previous environmental reports and acquired information; drafting of site plans; and, report composition. Additional responsibilities included client and tenant liaison. All Phase I ESAs were finalized with a recommendation for either no further work or the design and completion of a Phase II ESA.

Commercial Client: Was an integral part of a team that completed a Phase One ESA and a subsequent Phase Two ESA at a former industrial Site in Ottawa ON. The ESAs were completed so the Site could be re-developed into childcare facility. Since the Site was to be redeveloped into a more sensitive land use this necessitated the filing of a RSC with the Ministry of Environment, Conservation and Parks (MECP). Responsibilities included developing the conceptual site model (CSM), liaison with the clients and property owner for the supporting documentation needed for the RSC filing, filling out the electronic RSC form and addressing MECP comments during the initial review.

Petroleum Client: Conducted field and reporting tasks for a soil remediation project at a former gas station and commercial property, in Ottawa, Ontario. The area excavated was based on results of a previous Phase II ESA and observations of the soil conditions during the excavation. The total soil excavated and disposed of offsite was 4,700 metric tonnes. Responsibilities included supervision and direction n of all excavation activities, collection of confirmatory soil samples, interpretation of laboratory analytical data, drafting of site plans and analytical results figures, and report composition.

Technology Client: Conducted field and office activities for Human Health and Ecological Risk Assessment (HHERA) for site located in eastern Ontario that was contaminated by historic use and storage of chlorinated solvents. Responsibilities included management of sub-contractors, liaison with client and land owners, health and safety, groundwater monitoring and sampling, sub-slab vapour and ambient air sampling, drafting of site plans, review of historic reports, completion of data gap analysis, and annual report composition. In order to support the HHERA, Mr. Sabourin conducted a building floor and subgrade investigation consisting of the installation and sampling of sub-slab vapour probes and conducting preliminary pilot sub-slab communicative testing for the eventual design and installation of a sub-slab depressurization system.

Government Client: Provided multi-year environmental consulting services to a government campus in Ottawa, Ontario with respect to due diligence monitoring of the facilities sanitary effluent flow. Responsibilities included reviewing sanitary sewer plans and selecting sample locations, completion of a health and safety plan, supervising and training Terrapex staff in collection of sanitary effluent samples using manual and automatic sampling methodologies, and writing reports comparing the analytical results to the Ottawa's sewer-use bylaw. The sanitary effluent sampling program has since expanded to include additional buildings and facilities.

APPENDIX X
RESIDUE MANAGEMENT

BADGER DAYLIGHTING™
613-831-9763

31581

Date: 24/01/2025 Time in: 8:00 am Time out: 9:00 Job #: C0986.00

Address: 40 BEECHCLIF Truck #/ Area: PICK up 4 PO #:

Customer: TERRAPEX

Dumped at: ☐ 2355 McGee Side Road ☑ Other Drop at TOMLINSON

DESCRIPTION OF WORK

- COLLECT DRUM OF Soil cuttings

YPE OF MATERIAL: Non Regulated Waste ☐ Liquid ☐ Sludge ☐ Both ☐

Sand ☐ Soil ☑ UFill ☐ Granular ☐ Smell / Foul Odor ☐ Organics ☐

COLOURATION OF MATERIAL ☐ SUSPECTED CONTAMINATION: Yes ☑ No ☐ (If yes, contact your area manager)

es:

r:

ate Volume: 1 BARREL

Phil Schofield
Driver's Signature

Phil Schofield
Print Name

Customer's Signature

Print Name