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**Soil Characterization Report: Stockpile Sampling and Delineation Samples for York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON.**

**Prepared For:**

**GEC Architecture on behalf of The Regional Municipality of York**

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**Project Number:**

**ET25-1438B**

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Engtec's subcontractors, who have carried out on-site or laboratory work, are duly assessed according to the purchase procedures of our quality system. For further information, contact our project manager.

## EXECUTIVE SUMMARY

Engtec Consulting Inc. (Engtec) was retained by GEC Architecture on behalf of The Regional Municipality of York ("the Client"), complete a soil characterization report (SCR) for the future removal of excess soil from for York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON (Site) and provide Qualified Person (QP) services to Client during the duration of this project.

The Site is a polygon shaped property in Georgina, Ontario, with an area of 70,221m<sup>2</sup> under industrial use. The SCR was conducted to facilitate the management of excess soil that will be generated during potential extension of the existing Road Operation Centre building and related infrastructure, expansion of the baseline pond and the replacement of the existing gravel areas with new asphalt pavements at the Site. The Client estimated that approximately 11,272 m<sup>3</sup> of excess soil will be generated. It is Engtec's understanding that the SCR is required to support excess soil management during the expansion work as per Ontario Regulation 406/19 – "On-Site and Excess Soil Management" made under the Environmental Protection Act, R.S.O. 1990. C. E. 19(EPA), as amended.

Based on the information provided by the Client, the volume of excess soil to be generated at the Site is anticipated to be 11,272 m<sup>3</sup>. Additionally, a stockpile with an estimated volume of up to 5,500 m<sup>3</sup> (non-surveyed) will be incorporated into the future proposed berm at the site.

Between October 23 and October 27, 2024, a total of thirty-five (35) boreholes were advanced at the site using a Geo-probe truck-mounted drill rig supplied by Sonic Soil Sampling Inc., a subcontractor to Engtec. Collected fifty-three (53) soil samples, six (6) duplicate samples, nine (9) soil samples for Modified Synthetic Precipitate Leaching Procedure (mSPLP) and (1) soil sample for toxicity characteristic leaching procedure (TCLP) for metals, VOCs, PCBs, Benzo(a)pyrene and Ignitability from the boreholes advanced at the Project Area. All boreholes were advanced utilizing direct push technology.

This work is part of the broader project detailed in the "*Soil Characterization Report: York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON.*" prepared by Engtec Consulting for GEC Architecture on behalf of The Regional Municipality of York, dated March 11, 2025. To conduct stockpile sampling and delineation process, Engtec proposes advancing fifty-three (53) test pits on the Site, for additional and delineation samples. Collecting seventy (70) soil samples and seven (7) duplicate samples from the boreholes advanced at the Project Area. Thirty-six (36) samples and three (3) duplicate samples were collected for delineation process and thirty-four (34) plus four (4) soil samples were collected from stockpiles existing in Project Area. Samples will be selected based on olfactory and visual evidence of contamination.

The excess soil sampling at the Site will be completed in general accordance with Ontario Regulation 406/19 – "On-Site and Excess Soil Management" (O. Reg 406/19). The soil analysis results were compared to the Excess Soil Quality Standards outlined in the following tables:

- Table 2.1: Full Depth Excess Soil Quality Standards in Potable Ground Water Condition (Volume independent) for Industrial/Commercial/Community Property Use (Table 2.1 ICC ESQS); and,
- Table 3.1: Full Depth Excess Soil Quality Standards in Potable Ground Water Condition (Volume independent) for Industrial/Commercial/Community Property Use (Table 3.1 ICC ESQS).

The results and findings of the soil chemical testing conducted by Engtec at the Site are summarized as follows:

- The concentrations of all parameters in the soil samples submitted from the Site were either below the Table 2.1 ICC and Table 3.1 ICC ESQS except for the following:
  - Exceedance of SAR and/or EC was noted from the soil samples BHG6-B1-Dup for Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.
  - While the soil samples E-25-B1, E-27-A1, E-27-B1, E-27-C1, E-25-B2, E-27-A2 and E-27-B2 exceeded for Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.
- The following conclusions were noted based on the additional soil sampling:
  - The stockpile sampling results indicated that the excess soil generated will either be reused to construct the new berm or taken to a property that accepts soil that meets Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.
  - For delineation samples near the pond area, the results showed that the excess soil can be reused on-site except the areas with the noted exceedances in Table 2.1 ICC ESQS and Table 3.1 ICC ESQS at one or more locations. Alternatively, the excess soil can be disposed of at designated soil-receiving sites or landfills that accept soil with these exceedances.
  - For the delineation samples from the parking lot, the results indicated various exceedances which indicate that the southwest portion of the parking lot has impacts that will need to be disposed of as contaminated soil during construction.

The results of the Toxicity Characteristic Leaching Procedure (TCLP) and Modified Synthetic Precipitate Leaching Procedure (MSPLP) testing for five of the submitted soil samples are still pending. However, based on previous leachate sampling, it is anticipated that the results will not alter the findings of the report, which classifies the soil as non-hazardous waste in accordance with the leachate quality criteria outlined in Schedule 4 of O. Reg. 347, as amended, and/or O. Reg. 406/19. Therefore, the excess soil from the site may be disposed of or reused at a property that accepts soil with the exceedances mentioned above.

Available analytical data pertaining to this material should be forwarded to the potential receiver for review. Soil receiving sites should also be following O. Reg. 406/19 and all required paperwork as the per the regulation should be obtained for the export of any excess soil. An Excess Soil Destination Assessment Report has been prepared under separate cover.

## 1 Introduction

Engtec Consulting Inc. (Engtec) was retained by GEC Architecture on behalf of The Regional Municipality of York ("the Client"), complete a soil characterization report (SCR) for the future removal of excess soil from for York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON (Site) and provide Qualified Person (QP) services to Client during the duration of this project.

The Site is a polygon shaped property in Georgina, Ontario, with an area of 70,221 m<sup>2</sup> under industrial use. The SCR was conducted to facilitate the management of excess soil that will be generated during potential extension of the existing Road Operation Centre building and related infrastructure, expansion of the baseline pond and the replacement of the existing gravel areas with new asphalt pavements at the Site. The Client estimated that approximately 11,272 m<sup>3</sup> of excess soil will be generated. It is Engtec's understanding that the SCR is required to support excess soil management during the expansion work as per Ontario Regulation 406/19– "On-Site and Excess Soil Management" made under the Environmental Protection Act, R.S.O. 1990. C. E. 19(EPA), as amended.

Based on the information provided by the Client, the volume of excess soil to be generated at the Site is anticipated to be 11,272 m<sup>3</sup>. Additionally, a stockpile with an estimated volume of up to 5,500 m<sup>3</sup> (non-surveyed) will be incorporated into the future proposed berm at the site.

### 1.1 Project Team

The following table contains the contact details for the Project Leader for this Project and Engtec's QP and the Project team.

<b>Project Leader</b>	<b>The Regional Municipality of York</b>
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## 2 Background

A report entitled "Assessment of Past Uses: Plan Report York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON.", dated December 6, 2024, was reviewed and following was noted:

- The objective of the APU was to identify APECs that may have resulted from past activities, particularly those involving the importation of fill material of unknown quality during the site's development. The assessment included a review of historical records, aerial photographs, environmental databases, and a site visit.

**Table 1: Areas of Potential Environmental Concern and Contaminants of Potential Concern**

APEC#	PCA#	PCA no. per Table 2 O.Reg. 153	Location	Contaminants of Potential Concern (CoPC)
APEC#1	PCA#1	PCA#30 (Importation of Fill material of Unknown Quality during the construction of building on Site) - Development of building and installing underground utilities at Site	On Site	Metals and inorganics, Polycyclic Aromatic Hydrocarbons and Petroleum Hydrocarbons- Benzene, Toluene, Ethylbenzene, and Xylenes (PHCs- BTEX).
APEC#2	PCA#2	N/S (Application of de-icing agents) - Use of antifreeze chemicals or salt for winter maintenance	On Site	Electrical Conductivity (EC), and Sodium Adsorption Ratio (SAR)
APEC#3	PCA#5	PCA#28 (Gasoline and Associated Products Storage in Fixed Tanks)	On Site	PHCs/BTEX
APEC#4	PCA#7	PCA#52 (Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems)	On Site	PHCs/BTEX

- No other significant environmental concerns were identified during the site visit or records review.

A Report titled “*Sampling and Analysis Plan Report York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON.*”, dated December 6, 2024, was reviewed and following was noted:

- A total of four (4) Areas of Potential Concern (APECs) were identified for the project area. The contaminants of potential concern include metals and inorganics (M&I), petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, xylene (BTEX), and polycyclic aromatic hydrocarbons (PAHs).

- A total of fifty-three (53) soil samples and six (6) duplicate sample were collected for laboratory analysis of selected parameters to assess soil chemistry.

A report entitled “*Soil Characterization Report York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON.*,” dated December 6, 2024, was reviewed and the Following was noted:

- Fifty-three (53) soil samples including six (6) field duplicate were collected from thirty-five (35) boreholes advanced at the Site, on October 23, October 24 and October 27, 2024.
- the collected soil samples to be submitted for metals/inorganics (M & I), petroleum hydrocarbons (PHCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX), and polycyclic aromatic hydrocarbon (PAHs).
- Collect and submit one (1) soil sample for toxicity characteristic leaching procedure (TCLP) for metals, VOCs, PCBs, Benzo(a)pyrene and Ignitability in addition to nine (9) soil samples for Modified Synthetic Precipitate Leaching Procedure (mSPLP).
- Exceedance of SAR and/or EC was noted for the soil samples which are G6, G8, G8 DUP, E-1-1, E-1-2, E-4-1, E-4-2, E-4-DUP, E-28-1, E-28-2, E-28-DUP, E-5-1, E-5-2, E-6-1, E-6-2, E-7-1, E-7-2, G-3-1, G-3-2, G-4-1, G-4-2, G-7-1, G-7-2, E26, E27, E25, E24, E8, E9, E10, E11, E21, E22, E23, E-19-2, E-19-2, E-20-1, E20-2, E-18-1, E-18-2, E-17-1, E-17-2, E-16-1, E-16-2, E-15-1, E-15-2, E14-1, E-13-2, E-12-1, E-12-2 for Table 1 RPICC SQS.
- Exceedance of SAR and/or EC was noted for the soil samples G6, G8, G8 DUP, E-4-2, E-4-DUP, E-28-1, E-28-2, E-28-DUP, E-6-1, G-3-1, G-3-2, G-7-1, G-7-2, E27, E25, E24, E8, E9, E10, E11, E21, E22, E-19-2, E-19-2, E-20-1, E20-2, E-18-1, E-17-1, E-17-2, E-16-1, E-16-2, E-15-2, E14-1, E-12-1, E-12-2 for Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.
- Exceedances for PHCs were noted from soil samples E-5-2, E27, E25, E22, and E-20-1 for Table 1 RPICC SQS. While soil sample E27 showed exceedances for Table 2.1 ICC ESQS and E25 showed exceedances for Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.
- The soil sample E25 exceeds for several PAHs for Table 1 RPICC SQS, Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.
- The soil samples E-1-2 and E-3-2 showed exceedances for Barium (Metal) for Table 1 RPICC SQS.

### 3 Applicable Soil Quality Regulations

As per O.Reg. 406/19 soil that is excavated from a Project Area during site construction and is subsequently exported off-site for re-use and/or for disposal is referred to as Excess Soil. The excess soil sampling at the Site will be completed in general accordance with O.Reg. 406/19. The soil analysis results were compared to the Excess Soil Condition Standards outlined in the following tables (various tables were compared to as destination site is unknown at this stage of the project):

- Table 2.1: Full Depth Excess Soil Quality Standards in Potable Ground Water Condition (Volume independent) for Industrial/Commercial/Community Property Use (Table 2.1 ICC ESQS); and,
- Table 3.1: Full Depth Excess Soil Quality Standards in Potable Ground Water Condition (Volume independent) for Industrial/Commercial/Community Property Use (Table 3.1 ICC ESQS).



## 4 Scope of Work

The scope of work associated with this soil sampling and preparing Soil Characterization Report consisted of the following activities:

- Locating underground utilities at Site by Ontario One Call.
- Advancement of fifty-three (53) boreholes for additional and delineation samples.
- Collecting seventy (70) soil samples and seven (7) duplicate samples from the boreholes advanced at the Project Area. Thirty-six (36) samples and three (3) duplicate samples were collected for delineation process and thirty-four (34) plus four (4) soil samples were collected from stockpile exists in Project Area.
- Submitting soil samples collected from the boreholes for chemical analysis of the following as per O.Reg. 406/19 (as amended): PHC F1-F4 including BTEX, and PAHs and M&I parameters.
- Collect and submit thirteen (13) sample for modified synthetic precipitation leaching procedure (mSPLP) to the analytical laboratory on hold; and,
- Review the analytical data and prepare a report summarizing the findings.

## 5 Site Description

The subject site (3525 Baseline Road) is a polygon shaped property in Georgina, Ontario, with an area of 70,221 m<sup>2</sup>, under industrial property use with adjacent properties primarily designated for agricultural use. The Site area is approximately 7.11 ha. The Site consists of six (6) building structures on the property, including existing salt storage stockpile, existing garage shed, refueling station, and office building. The site includes a pond located on the northern side of the Project Area and a gravel area near the central line of the Project Area.

Based on the toporama map, the existing ground surface at the site is sloped towards the northeast side towards Baseline Road with elevation mostly ranging between 260 m to 250 m. No Record of Site Condition (RSC) has been filed for the Site. Groundwater flow inferred to the northeast towards Lake Simcoe.

The Site is a property owned by the Regional Municipality of York. The co-ordinates of the Site are as follows:

- North Boundary: 17 T 626027.79 m E, 4905364.45 m N
- South Boundary: 17 T 626132.95 m E, 4904997.75 m N

## 6 Methodology

The following sections describe the methodology used by Engtec during the field investigation.

### 6.1 General

Soil conditions at the Project Area were investigated through the advancement of thirty-five (35) boreholes equally distributed along the Site. On March 10 and March 11, 2025, the boreholes were advanced under the direction of Engtec's Qualified Personnel (QP). The boreholes were advanced to a maximum depth of 2.0 mbgs.

The approximate boreholes and stockpile sampling locations are provided on enclosed Figure 1 with borehole logs in Appendix B.

## 6.2 Drilling and Stockpile Sampling

On March 10 and March 11, 2025, thirty-five (35) boreholes at Site were advanced using a auger-mount drill rig of Engtec Consulting Inc., and an excavator supplied by Melrose Paving Co, Ltd. subcontracted to Engtec.

The approximate borehole locations are provided on enclosed Drawing 1 with borehole logs in Appendix B.

## 6.3 Soil Sampling

Stockpile soil samples and delineation samples were collected from each of the boreholes advanced at the Project Area. The soil samples were retrieved up to the depth of approximately up to 2 mbgs. Each soil sample was retrieved by using a new pair of nitrile gloves and placed directly into laboratory-supplied glassware, then stored on ice in coolers.

Samples to be analyzed for PHC fraction F1 were collected using a soil core sampler and placed into vials containing methanol as a preservative, a portion of the sample was placed in the glass sampling jars. The jars and vials were sealed with Teflon-lined lids to minimize headspace and reduce the potential for induced volatilization during storage/transport prior to analysis. All the sample jars were stored in a dedicated cooler with ice for storage and transport to the analytical laboratory.

Soil samples were selected for laboratory analysis based on the visual and olfactory evidence of impacts, where observed. Soil samples were collected following decontamination and other protocols during sample collection and handling to minimize the potential for sample cross-contamination.

The soil samples were labeled to represent the corresponding boreholes they were sampled, and the details of the submitted sample are presented in the tables below:

**Table 2: Summary of Stockpile Sampling**

Sample ID	Sample Depth (mbgs)	Requested Analysis
S-1	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-2	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-3	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-4	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-5	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-6	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-7	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-8	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-9	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-10	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-11	0.2 to 1.0	PHCs, BTEX, M&I and PAHs

Sample ID	Sample Depth (mbgs)	Requested Analysis
S-12	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-13	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-14	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-15	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-16	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-17	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-18	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-19	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-20	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-21	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-22	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-23	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-24	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-25	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-26	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-27	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-28	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-29	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-30	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-31	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-32	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-33	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-34	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-7-DUP	0.2 to 1.0	PHCs, BTEX, M&I and PAHs
S-10-DUP	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-12-DUP	1.0 to 2.0	PHCs, BTEX, M&I and PAHs
S-14-DUP	1.0 to 2.0	PHCs, BTEX, M&I and PAHs

**Table 3: Delineation samples of the exceeding parameters**

Sample ID	Sample Depth (mbgs)	Requested Analysis
BHG6 A1	0.1 to 2.0	M/I
BHG6 B1	0.1 to 2.0	M/I
BHG6 B1-DUP	0.1 to 2.0	M/I
BHG6 C1	0.1 to 2.0	M/I
BHG6 C1-DUP	0.1 to 2.0	M/I
BHG6 A2	0.1 to 2.0	M/I
BHG6 B2	0.1 to 2.0	M/I
BHG6 C2	0.1 to 2.0	M/I
BHG6 C2-DUP	0.1 to 2.0	M/I
BHG7 A1	0.1 to 2.0	M/I
BHG7 B1	0.1 to 2.0	M/I
BHG7 C1	0.1 to 2.0	M/I
BHG7 A2	0.1 to 2.0	M/I
BHG7 B2	0.1 to 2.0	M/I
BHG7 C2	0.1 to 2.0	M/I
BHG8 A1	0.1 to 2.0	M/I
BHG8 B1	0.1 to 2.0	M/I
BHG8 C1	0.1 to 2.0	M/I
BHG8 A2	0.1 to 2.0	M/I
BHG8 B2	0.1 to 2.0	M/I
BHG8 C2	0.1 to 2.0	M/I
BHE4 A1	1.0 to 2.0	M/I
BHE4 B1	1.0 to 2.0	M/I
BHE4 C1	1.0 to 2.0	M/I
BHE4 A2	1.0 to 2.0	M/I
BHE4 B2	1.0 to 2.0	M/I
BHE4 C2	1.0 to 2.0	M/I
E-25-A1	0.1 to 1.2	PHC-BTEX
E-25-B1	0.1 to 1.2	PHC-BTEX
E-25-C1	0.1 to 1.2	PHC-BTEX
E-25-A2	0.1 to 1.2	PHC-BTEX
E-25-B2	0.1 to 1.2	PHC-BTEX
E-25-C2	0.1 to 1.2	PHC-BTEX
E-27-A1	0.1 to 1.2	PHC-BTEX
E-27-B1	0.1 to 1.2	PHC-BTEX
E-27-C1	0.1 to 1.2	PHC-BTEX
E-27-A2	0.1 to 1.2	PHC-BTEX
E-27-B2	0.1 to 1.2	PHC-BTEX
E-27-C2	0.1 to 1.2	PHC-BTEX

## 7 Analytical Results

### 7.1 Soil Quality

In accordance with the scope of work, chemical analyses were performed on soil samples recovered from each borehole. The selection of representative “worst case” soil samples was based on field screening for visual and/or olfactory evidence of impacts, where observed. The soil stratigraphy as observed for each borehole is described in the borehole logs in Appendix B. A detailed geotechnical investigation for the Site is included in the “Geotechnical Investigation at Road Operations Centre at 3525 Baseline Road, Georgina, ON.” prepared by Engtec Consulting Inc. dated December 6, 2024. The analytical results of the submitted soil samples are summarized in tables below, and the Certificates of Analysis are enclosed in Appendix C.

The following table summarises the details of the stockpile samples submitted and the noted exceedances.

#### 7.1.1 Metals and Inorganics

The concentrations of all metals and inorganics parameters in the analyzed soil samples were either below the Table 2.1 ICC ESQS, and Table 3.1 ICC ESQS or not detected above the laboratory reportable detection limits (RDLs) with the following exception:

- The soil samples BHG6-C1-Dup exceeded for Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.

The laboratory RDLs is below Table 2.1 ICC ESQS, and Table 3.1 ICC ESQS . The results are presented in Appendix C.

#### 7.1.2 Petroleum Hydrocarbons (PHCs) including Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)

The concentrations of all PHC parameters including BTEX in the analyzed soil samples were below Table 2.1 ICC ESQS, and Table 3.1 ICC ESQS or not detected above the laboratory reportable detection limits (RDLs) with the following exception:

- The soil samples E-25-B1, E-27-A1, E-27-B1, E-27-C1, E-25-B2, E-27-A2 and E-27-B2 exceeded for Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.

The laboratory RDLs is below Table 2.1 ICC ESQS, and Table 3.1 ICC ESQS . The results are presented in Appendix C.

#### 7.1.3 Toxicity Characteristic Leaching Procedure (TCLP) and Modified Synthetic Precipitation Leaching Procedure (mSPLP)

The results of the Toxicity Characteristic Leaching Procedure (TCLP) and Modified Synthetic Precipitate Leaching Procedure (MSPLP) testing for five of the submitted soil samples are still pending. However, based on previous leachate sampling, it is anticipated that the results will not alter the findings of the report, which classifies the soil as non-hazardous waste in accordance with the leachate quality criteria outlined in Schedule 4 of O. Reg. 347, as amended, and/or O. Reg. 406/19. Therefore, the excess soil from the site may be disposed of or reused at a property that accepts soil with the exceedances mentioned above.

## 7.2 Quality Assurance and Quality Control

The subcontract laboratory used during this investigation, Eurofins Scientific, is accredited by the Standards Council of Canada/Canadian Association of Environmental Analytical Laboratories in accordance with ISO/IEC 17025:2017 – “General Requirements for the Competence of Testing and Calibration Laboratories” for the analysis of all parameters for all samples in the scope of work for which SCS have been established under Ontario Regulation 153/04.

The “Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act” (“the Analytical Protocol”), prepared by the MECP, March 2004 amended as of July 1<sup>st</sup>, 2011, establishes criteria used in assessing the performance of analytical laboratories when the data are used in support of the filing of Records of Site Condition.

The analytical program conducted by Eurofins Scientific included analytical test group-specific QA/QC measures to evaluate the accuracy and precision of the analytical results and the efficiency of analyte recovery during solute extraction procedures. The Eurofins Scientific QA/QC program consisted of the preparation and analysis of laboratory duplicate samples to assess precision and sample homogeneity, method blanks to assess analytical bias, spiked blanks, and QC standards to evaluate analyte recovery, matrix spikes to evaluate matrix interferences and surrogate compound recoveries (VOCs only) to evaluate extraction efficiency. The laboratory QA/QC results are presented in the Quality Assurance Report provided in the Certificate of Analysis prepared by Eurofins Scientific. The QA/QC results are reported as percent recoveries for matrix spikes, spike blanks, and QC standards, relative percent difference for laboratory duplicates, and analyte concentrations for method blanks.

## 8 Conclusions and Recommendations

The results and findings of the soil chemical testing conducted by Engtec at the Site are summarized as follows:

- The concentrations of all parameters in the soil samples submitted from the Site were either below the, Table 2.1 ICC and Table 3.1 ICC ESQS except for the following:
  - Exceedance of SAR and/or EC was noted from the soil samples BHG6-B1-Dup for Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.
  - The soil sample While soil samples E-25-B1, E-27-A1, E-27-B1, E-27-C1, E-25-B2, E-27-A2 and E-27-B2 exceeded for Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.
- The following conclusions were noted based on the additional soil sampling:
  - The stockpile sampling results indicated that the excess soil generated will either be reused to construct the new berm or taken to a property that accepts soil that meets Table 2.1 ICC ESQS and Table 3.1 ICC ESQS.
  - For delineation samples near the pond area, the results showed that the excess soil can be reused on-site except the areas with the noted exceedances in Table 2.1 ICC ESQS and Table 3.1 ICC ESQS at one or more locations. Alternatively, the excess soil can be disposed of at designated soil-receiving sites or landfills that accept soil with these exceedances.

- For the delineation samples from the parking lot, the results indicated various exceedances which indicate that the southwest portion of the parking lot has impacts that will need to be disposed of as contaminated soil during construction.

The results of the Toxicity Characteristic Leaching Procedure (TCLP) and Modified Synthetic Precipitate Leaching Procedure (MSPLP) testing for five of the submitted soil samples are still pending. However, based on previous leachate sampling, it is anticipated that the results will not alter the findings of the report, which classifies the soil as non-hazardous waste in accordance with the leachate quality criteria outlined in Schedule 4 of O. Reg. 347, as amended, and/or O. Reg. 406/19. Therefore, the excess soil from the site may be disposed of or reused at a property that accepts soil with the exceedances mentioned above.

Available analytical data pertaining to this material should be forwarded to the potential receiver for review. Soil receiving sites should also be following O. Reg. 406/19 and all required paperwork as the per the regulation should be obtained for the export of any excess soil. An Excess Soil Destination Assessment Report has been prepared under separate cover.

## 9 Qualified Person Declaration

The Project Leader of the Project Area (The Regional Municipality of York) has provided the Qualified Person or an individual supervised by the Qualified Person with all necessary information and access to the Project Area and authorized the Qualified Person or an individual supervised by the Qualified Person to make any inquiries of the Project Leader and Operator's employees and agents, for the purpose of assisting the Qualified Person in preparing or overseeing the preparation of this document.

The documents were prepared as per O.Reg. 406/19 and the Qualified Person has prepared or overseen the preparation of the soil characterization report (SCR). To the best of QP's knowledge, this report is complete and accurate and meets the requirements of the O. Reg. 406/19 and the associated "Soil Rules".

## 10 General Limitations

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

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

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

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

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

Yours truly,



Pranav Dave, M.Eng.,  
Environmental Specialist  
Engtec Consulting Inc.

Hammad Din, P. Eng.  
Environmental Services Manager  
Engtec Consulting Inc.

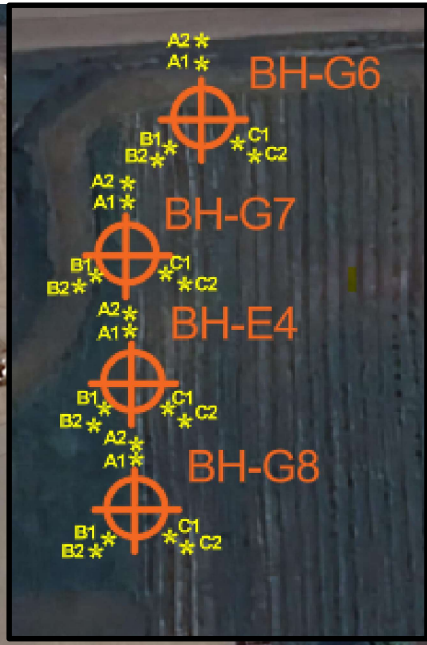





## Figures



 <b>Test Pits</b>	<p><b>Project Name:</b> Soil Characterization Report , 3525 Baseline,Georgina, Ontario</p> <p><b>Project location:</b> 3525 Baseline, Georgina, ON</p> <p><b>Drawing Title:</b> Proposed Boreholes and Test Pits</p> <p><b>Drawing No:</b> 01</p> <p><b>Date:</b> March 24, 2025</p> <p><b>Project Number:</b> ETP25-1034A</p> <p><b>Drawn by:</b> Manpreet Kaur</p> <p><b>Checked by:</b> Hammad Din</p>	<p><b>Engtec Consulting Inc.</b></p> <p>2447 Anson Drive , Mississauga, ON, L5S 1G1 Tel: (905)-856-2988</p> 
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<p> <b>Existing Boreholes</b></p> <p> <b>Delineation Boreholes</b></p>	<p><b>Project Name:</b> Soil Charcaterization Report, 3525 Baseline,Georgina, Ontario</p> <p><b>Project location:</b> 3525 Baseline, Georgina, ON</p> <p><b>Drawing Title:</b> Proposed Boreholes and Test Pits</p> <p><b>Drawing No:</b> 02</p> <p><b>Date:</b> March 24, 2025</p> <p><b>Project Number:</b> ETP25-1034A</p> <p><b>Drawn by:</b> Manpreet Kaur</p> <p><b>Checked by:</b> Hammad Din</p>	<p><b>Engtec Consulting Inc.</b></p> <p>2447 Anson Drive , Mississauga, ON, L5S 1G1 Tel: (905)-856-2988</p> <p></p>
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 Existing Boreholes  
 Delineation Boreholes

**Project Name:** Soil Characterization Report, 3525 Baseline, Georgina, Ontario

**Project location:** 3525 Baseline, Georgina, ON

**Drawing Title:** Proposed Boreholes and Test Pits

**Drawing No:** 03

**Date:** March 24, 2025

**Project Number:** ETP25-1034A

**Drawn by:** Manpreet Kaur

**Checked by:** Hammad Din

**Engtec Consulting Inc.**

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Mississauga, ON,  
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# **Appendix A**

## **Sampling and Analysis Plan**



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**Sampling and Analysis Plan: Stockpile Sampling and Delineation Samples for York Region  
North Road Operations Centre at 3525 Baseline Rd, Georgina, ON.**

**Prepared For:**

**GEC Architecture on behalf of The Regional Municipality of York**

430-179 John Street  
Toronto, ON  
M5T 1X4

**Project Number:**

ET25-1030A

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**Date Submitted:**

April 4, 2025

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## PROPERTY AND CONFIDENTIALITY

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If tests have been carried out, the results of these tests are valid only for the sample described in this report.

Engtec's subcontractors, who have carried out on-site or laboratory work, are duly assessed according to the purchase procedures of our quality system. For further information, contact our project manager.



## EXECUTIVE SUMMARY

Engtec Consulting Inc. (Engtec) was retained by GEC Architecture on behalf of The Regional Municipality of York ("the Client"), complete a soil characterization report (SCR) for the future removal of excess soil from for York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON (Site) and provide Qualified Person (QP) services to Client during the duration of this project.

The Site is a polygon shaped property in Georgina, Ontario, with an area of 70,221m<sup>2</sup> under industrial use. The SCR was conducted to facilitate the management of excess soil that will be generated during potential extension of the existing Road Operation Centre building and related infrastructure, expansion of the baseline pond and the replacement of the existing gravel areas with new asphalt pavements at the Site. The Client estimated that approximately 11,272 m<sup>3</sup> of excess soil will be generated. It is Engtec's understanding that the SCR is required to support excess soil management during the expansion work as per Ontario Regulation 406/19– "On-Site and Excess Soil Management" made under the Environmental Protection Act, R.S.O. 1990. C. E. 19(EPA), as amended.

This Sampling and Analysis Plan ('SAP') presents the procedures and measures that will be undertaken during field investigative activities to meet the data quality objectives to provide for the collection of accurate, reproducible, and representative data to characterize the Excess Soils to be generated from the Project Area.

This SAP was completed in accordance with the requirements set out in the document entitled "Rules for Soil Management and Excess Soil Quality Standards" which is referenced in Ontario Regulation 406/19: On-Site and Excess Soil Management (O. Reg. 406/19); and in accordance with generally accepted professional practices. Subject to this standard of care, Engtec makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitations of liability, the scope of the report, and third-party reliance are outlined in Section 7 of this report.

Based on the information provided by the Client, the volume of excess soil to be generated at the Site is anticipated to be 11,272 m<sup>3</sup>. Additionally, a stockpile with an estimated volume of up to 5,500 m<sup>3</sup> (non-surveyed) will be incorporated into the future proposed berm at the site. This SAP is aimed to address the identified Contaminants of Potential Concern (CoPCs) resulting due to Potentially Contaminating Activities (PCAs) and associated Areas of Potential Environmental Concern (APECs) for the Site as identified in the APU prepared by Engtec dated March 19, 2025.

Between October 23 and October 27, 2024, a total of thirty-five (35) boreholes were advanced at the site using a Geo-probe truck-mounted drill rig supplied by Sonic Soil Sampling Inc., a subcontractor to Engtec. Collected fifty-three (53) soil samples, six (6) duplicate samples, nine (9) soil samples for Modified Synthetic Precipitate Leaching Procedure (mSPLP) and (1) soil sample for toxicity characteristic leaching procedure (TCLP) for metals, VOCs, PCBs, Benzo(a)pyrene and Ignitability from the boreholes advanced at the Project Area. All boreholes were advanced utilizing direct push technology.

This work is part of the broader project detailed in the "*Soil Characterization Report: York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON.*" prepared by Engtec Consulting for GEC Architecture on behalf of The Regional Municipality of York, dated March 11, 2025. Engtec proposes advancing fifty-three (53) test pits on the Site, for additional and delineation samples. Collecting seventy (70) soil samples and seven (7) duplicate samples from

the boreholes advanced at the Project Area. Thirty-six (36) samples and three (3) duplicate samples were collected for delineation process and thirty-four (34) plus four (4) soil samples were collected from stockpiles existing in Project Area. Samples will be selected based on olfactory and visual evidence of contamination.

This SAP is prepared as per Engtec's proposal (ETP25-1034) dated February 26, 2025, as a supporting document for Excess Soil Management to address the environmental issues identified in the APU prepared by Engtec dated March 19, 2025.

## 1 Introduction

Engtec Consulting Inc. (Engtec) was retained by GEC Architecture on behalf of The Regional Municipality of York ("the Client"), complete a soil characterization report (SCR) for the future removal of excess soil from for York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON (Site) and provide Qualified Person (QP) services to Client during the duration of this project.

The Site is a polygon shaped property in Georgina, Ontario, with an area of 70,221 m<sup>2</sup> under industrial use. The SCR was conducted to facilitate the management of excess soil that will be generated during potential extension of the existing Road Operation Centre building and related infrastructure, expansion of the baseline pond and the replacement of the existing gravel areas with new asphalt pavements at the Site. The Client estimated that approximately 11,272 m<sup>3</sup> of excess soil will be generated. It is Engtec's understanding that the SCR is required to support excess soil management during the expansion work as per Ontario Regulation 406/19– "On-Site and Excess Soil Management" made under the Environmental Protection Act, R.S.O. 1990. C. E. 19(EPA), as amended.

This Sampling and Analysis Plan ('SAP') presents the procedures and measures that will be undertaken during field investigative activities to meet the data quality objectives to provide for the collection of accurate, reproducible, and representative data to characterize the Excess Soils to be generated from the Project Area.

Based on the information provided by the Client, the volume of excess soil to be generated at the Site is anticipated to be 11,272 m<sup>3</sup>. In addition to a stockpile with a non-surveyed approximate volume up to 5500 m<sup>3</sup> to be made part of future proposed berm at the site. This SAP is aimed to address the identified Contaminants of Potential Concern (CoPCs) resulting due to Potentially Contaminating Activities (PCAs) and associated Areas of Potential Environmental Concern (APECs) for the Site as identified in the APU prepared by Engtec dated March 19, 2025.

Between October 23 and October 27, 2024, a total of thirty-five (35) boreholes were advanced at the site using a Geo-probe truck-mounted drill rig supplied by Sonic Soil Sampling Inc., a subcontractor to Engtec. Collected fifty-three (53) soil samples, six (6) duplicate samples, nine (9) soil samples for Modified Synthetic Precipitate Leaching Procedure (mSPLP) and (1) soil sample for toxicity characteristic leaching procedure (TCLP) for metals, VOCs, PCBs, Benzo(a)pyrene and Ignitability from the boreholes advanced at the Project Area. All boreholes were advanced utilizing direct push technology.

This work is part of the broader project detailed in the "*Soil Characterization Report: York Region North Road Operations Centre at 3525 Baseline Rd, Georgina, ON.*" prepared by Engtec Consulting for GEC Architecture on behalf of The Regional Municipality of York, dated March 11, 2025. Engtec proposes advancing fifty-three (53) test pits on the Site, for additional and delineation samples. Collecting seventy (70) soil samples and seven (7) duplicate samples from the boreholes advanced at the Project Area. Thirty-six (36) samples and three (3) duplicate samples were collected for delineation process and thirty-four (34) plus four (4) soil samples were collected from stockpiles existing in Project Area. Samples will be selected based on olfactory and visual evidence of contamination.

This SAP is prepared as per Engtec's proposal (ETP25-1034) dated February 26, 2025, as a supporting document for Excess Soil Management to address the environmental issues identified in the APU prepared by Engtec dated March 19, 2025.

## 2 Project Area Description

The Site is approximately polygon-shaped, with a plan area of 70,221 m<sup>2</sup> under industrial use, and adjacent properties primarily designated for agricultural use. The Site area is approximately 7.11 ha. The Site consists of six (6) building structures on the property, including existing salt storage stockpile, existing garage shed, refueling station, and office building. The site includes a pond located on the northern side of the project area and a gravel area near the central line of the project area.

Based on the toporama map, the existing ground surface at the site is sloped towards the northeast side towards Baseline Road with elevation mostly ranging between 260 m to 250 m. Groundwater flow inferred to the northeast towards Lake Simcoe. The Site is a property owned by the Regional Municipality of York. The co-ordinates of the Site are as follows:

- West Boundary: 17 T 626027.79 m E, 4905364.45 m N
- South Boundary: 17 T 626132.95 m E, 4904997.75 m N

### 2.1 Areas of Potential Environmental Concern (APECs) and Contaminants of Potential Concern (CoPC)

Based on the preliminary review of the Site and surrounding areas, the following APECs and CoPCs have been identified in the APU prepared by Engtec dated December 3, 2024:

APEC#	PCA#	PCA no. per Table 2 O.Reg. 153	Location	Contaminants of Potential Concern (CoPC)
APEC#1	PCA#1	PCA#30 (Importation of Fill material of Unknown Quality during the construction of building on Site) - Development of building and installing underground utilities at Site	On Site	Metals and inorganics(M&I), Polycyclic Aromatic Hydrocarbons (PAHs), Petroleum Hydrocarbons (PHCs) and Benzene, Toluene, Ethylbenzene and Xylenes (BTX)
APEC#2	PCA#2	N/S (Application of de-icing agents) - Use of antifreeze chemicals or salt for winter maintenance	On Site	Electrical Conductivity (EC), and Sodium Adsorption Ratio (SAR)

APEC#	PCA#	PCA no. per Table 2 O.Reg. 153	Location	Contaminants of Potential Concern (CoPC)
APEC#3	PCA#5	PCA#28 (Gasoline and Associated Products Storage in Fixed Tanks)	On Site	PHCs/BTEX
APEC#4	PCA#7	PCA#52 (Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems)	On Site	PHCs/BTEX

N/S – not specified in Table 2, Schedule D, O. Reg. 153/04

### 3 Applicable Soil Quality Regulations

As per O.Reg. 406/19 soil that is excavated from a Project Area during site construction and is subsequently exported off-site for re-use and/or for disposal is referred to as Excess Soil. The excess soil sampling at the Site will be completed in general accordance with O.Reg. 406/19. The soil analysis results will be compared to the Excess Soil Quality Standards outlined in the following tables:

- Table 2.1: Full Depth Excess Soil Quality Standards in Potable Ground Water Condition (Volume independent) for Industrial/Commercial/Community Property Use (Table 2.1 ICC ESQS); and,
- Table 3.1: Full Depth Excess Soil Quality Standards in Potable Ground Water Condition (Volume independent) for Industrial/Commercial/Community Property Use (Table 3.1 ICC ESQS).

## 4 Sampling Methodology

The following sections describe the methodology to be used by Engtec during the field investigation.

### 4.1 Sampling Frequency

#### 4.1.1 In-situ sampling approach

As per O.Reg. 406/19 and Rules for Soil Management and Excess Soil Quality Standards the soil samples are to be collected using an in-situ sampling approach will follow the sampling frequency as mentioned:

- A minimum of three (3) in-situ samples shall be analyzed if less than 600 m<sup>3</sup> of soil is to be excavated.
- If more than 600 m<sup>3</sup> of soil is to be excavated, at least one (1) in-situ soil sample shall be analyzed for each 200 m<sup>3</sup> of soil for the first 10,000 m<sup>3</sup>.
- At least one (1) in-situ soil sample shall be analyzed for each additional 450 m<sup>3</sup> after the first 10,000 m<sup>3</sup> of soil to be excavated; and
- At least one (1) in-situ soil sample shall be analyzed for each additional 2000 m<sup>3</sup> after the first 40,000 m<sup>3</sup> of soil to be excavated.

#### 4.1.2 Stockpile sampling approach

As per O.Reg. 153/04 the soil samples are to be collected using a ex-situ (stockpile) sampling approach that will follow the sampling frequency as mentioned:

The following table presents ex-site soil sampling frequencies:

Item	Stockpile Volume (m <sup>3</sup> )	Minimum Number of Samples
1.	≤ 130	3
2.	> 130 to 220	4
3.	> 220 to 320	5
4.	> 320 to 430	6
5.	> 430 to 550	7
6.	> 550 to 670	8
7.	> 670 to 800	9
8.	> 800 to 950	10
9.	> 950 to 1100	11
10.	> 1100 to 1250	12
11.	> 1250 to 1400	13
12.	> 1400 to 1550	14
13.	> 1550 to 1700	15
14.	> 1700 to 1850	16
15.	> 1850 to 2050	17
16.	> 2050 to 2200	18
17.	> 2200 to 2350	19

Item	Stockpile Volume (m <sup>3</sup> )	Minimum Number of Samples
18.	> 2350 to 2500	20
19.	> 2500 to 2700	21
20.	> 2700 to 2900	22
21.	> 2900 to 3100	23
22.	> 3100 to 3300	24
23.	> 3300 to 3500	25
24.	> 3501 to 3700	26
25.	> 3700 to 3900	27
26.	> 3900 to 4100	28
27.	> 4100 to 4300	29
28.	> 4300 to 4500	30
29.	> 4500 to 4700	31
30.	> 4700 to 5000	32

If the stockpile volume is greater than 5000 m<sup>3</sup>, the minimum number of samples that must be collected and analysed as described in paragraph 5 is the amount determined in accordance with the following formula:

$$N = 32 + (V - 5000) \div 300$$

Where,

N = the minimum number of samples, and

V = the stockpile volume in cubic metres.

As per the O.Reg. 153/04 (as amended) a, minimum of thirty-four (34) additional soil samples plus duplicates are required for the Site based on the updated volume of Stockpile approximately 5,500 m<sup>3</sup> of excess soil to be generated at the Site.

## 4.2 Sampling Plan

Soil samples identified for possible laboratory analysis are to be collected in accordance with O.Reg.153/04 and placed directly into pre-cleaned, laboratory-supplied glass sample jars/vials. Samples to be analyzed for PHC fraction F1 and VOCs will be collected using a soil core sampler and placed into vials containing methanol as a preservative. The jars and vials were sealed with Teflon-lined lids to minimize headspace and reduce the potential for induced volatilization during storage/transport prior to analysis. All the sample jars are to be stored in a dedicated cooler with ice for storage and transport to the analytical laboratory.

Soil samples selected for laboratory analysis will be based on the visual and olfactory evidence of impacts, where observed. As per the discussion with the Client, the volume of excess soil to be generated at the Site is anticipated to be 11,272 m<sup>3</sup>.

### 4.3 Sample Handling

Decontamination and other protocols will be followed during sample collection and handling to minimize the potential for sample cross-contamination. New disposable nitrile gloves shall be used for the handling of each retrieved soil sample. The non-dedicated sampling equipment shall be decontaminated between sampling locations using a potable water/phosphate-free detergent solution followed by rinses with potable water and de-ionized water.

Measures will be taken in the field and during transport to preserve sample integrity between collection and receipt by the contractual laboratory prior to chemical analysis. Recommended volumes of soil samples selected for chemical analysis will be collected into pre-cleaned, laboratory-supplied glass sample jars/vials identified for the specified analytical test group. Samples intended for PHC fractions F1 will be collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes, and sealed using Teflon-lined lids. Soil samples selected for laboratory analysis will be immediately placed in insulated coolers pre-chilled with ice upon collection for storage and transport to the contractual laboratory, Eurofins Scientific, North York, ON.

The samples will be transported/submitted within the acceptable holding times following Chain of Custody protocols for chemical analysis.

### 4.4 Analytical Testing

The soil samples collected from the stockpile will be analyzed for the following parameters as per O.Reg. 153/04:

Chemical Testing Parameters	No. of Soil Samples
Metals and Inorganics including sodium adsorption ratio (SAR) and electrical conductivity (EC)	38 Samples
PHCs and BTEX	38 Samples
PAHs	38Samples

**Table 2: Details of the Delineation Samples of exceeding soil sample boreholes for PHCs and M/I to be Collected and Analyzed.**

Sample ID	Sample Depth (mbgs)	Requested Analysis
BHG6 A1	0.1 to 2.0	M/I
BHG6 B1	0.1 to 2.0	M/I
BHG6 B1-DUP	0.1 to 2.0	M/I
BHG6 C1	0.1 to 2.0	M/I
BHG6 C1-DUP	0.1 to 2.0	M/I
BHG6 A2	0.1 to 2.0	M/I
BHG6 B2	0.1 to 2.0	M/I
BHG6 C2	0.1 to 2.0	M/I
BHG6 C2-DUP	0.1 to 2.0	M/I
BHG7 A1	0.1 to 2.0	M/I
BHG7 B1	0.1 to 2.0	M/I
BHG7 C1	0.1 to 2.0	M/I



Sample ID	Sample Depth (mbgs)	Requested Analysis
BHG7 A2	0.1 to 2.0	M/I
BHG7 B2	0.1 to 2.0	M/I
BHG7 C2	0.1 to 2.0	M/I
BHG8 A1	0.1 to 2.0	M/I
BHG8 B1	0.1 to 2.0	M/I
BHG8 C1	0.1 to 2.0	M/I
BHG8 A2	0.1 to 2.0	M/I
BHG8 B2	0.1 to 2.0	M/I
BHG8 C2	0.1 to 2.0	M/I
BHE4 A1	1.0 to 2.0	M/I
BHE4 B1	1.0 to 2.0	M/I
BHE4 C1	1.0 to 2.0	M/I
BHE4 A2	1.0 to 2.0	M/I
BHE4 B2	1.0 to 2.0	M/I
BHE4 C2	1.0 to 2.0	M/I
E-25-A1	0.1 to 1.2	PHC-BTEX
E-25-B1	0.1 to 1.2	PHC-BTEX
E-25-C1	0.1 to 1.2	PHC-BTEX
E-25-A2	0.1 to 1.2	PHC-BTEX
E-25-B2	0.1 to 1.2	PHC-BTEX
E-25-C2	0.1 to 1.2	PHC-BTEX
E-27-A1	0.1 to 1.2	PHC-BTEX
E-27-B1	0.1 to 1.2	PHC-BTEX
E-27-C1	0.1 to 1.2	PHC-BTEX
E-27-A2	0.1 to 1.2	PHC-BTEX
E-27-B2	0.1 to 1.2	PHC-BTEX
E-27-C2	0.1 to 1.2	PHC-BTEX

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

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

Documentation procedures will be followed to confirm sample identification. Each sample will be assigned a unique identification ID number, which is recorded along with the date, time of sampling, and requested analyses on labels affixed to the sampling containers. Chain of Custody protocols will be followed to track sample handling and movement until receipt by the contractual laboratory. Field QA/QC samples will be collected during the sampling. Duplicate

samples collected will be used to evaluate sampling precision and evaluate the potential for sample cross-contamination during handling and transport.

It is to Engtec's understanding that no potential reuse sites for the acceptance of excess soil generated from the Site has been identified at the time of preparation of this report.

## 5 Qualified Person Declaration

The Project Leader of the Project Area (The Regional Municipality of York) has provided the Qualified Person or an individual supervised by the Qualified Person with all necessary information and access to the Project Area and authorized the Qualified Person or an individual supervised by the Qualified Person to make any inquiries of the Project Leader and Operator's employees and agents, for the purpose of assisting the Qualified Person in preparing or overseeing the preparation of this document.

The documents were prepared as per O.Reg. 406/19 and the Qualified Person has prepared or oversee the preparation of the sampling and analysis plan (SAP). To the best of QP's knowledge, this report is complete and accurate and meets the requirements of the O. Reg. 406/19 and the associated "Soil Rules".

## 6 References

- Ontario Regulation 153/04, made under the Environmental Protection Act, May 2004, amended.
- Ontario Regulation 406/19. On-Site and Excess Soil Management.
- Ministry of Environment [MECP] Rules for Soil Management and Excess Soil Quality Standards.
- Ministry of the Environment [MECP] (1996) Guidance on Sampling and Analytical Methods for Use at Contaminated Project Areas in Ontario. Ontario Ministry of the Environment, December 1996.
- MECP (2011a) Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Ontario Ministry of the Environment, March 2004, amended as of July 1, 2011.
- MECP (2011) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Ontario Ministry of the Environment, April 15, 2021.
- Occupational Health and Safety Act - Ministry of Labour (MOL).
- Topographic Map available at the Natural Resources Canada (NRC) website <http://atlas.gc.ca/toporama/en/index.html>.
- Geotechnical Investigation for Maintenance Building Expansion at Road Operations Centre at 3525 Baseline Road, Georgina, Ontario, for The Regional Municipality of York. Engtec Consulting Inc. 2023.

## 7 General Limitations

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

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

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

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

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

Yours truly,

Pranav Dave, M.Eng..  
Environmental Specialist  
Engtec Consulting Inc.

Hammad Din, P. Eng.  
Environmental Services Manager  
Engtec Consulting Inc.

## **Appendix B**

### **Borehole Logs**

Borehole ID	Depth (mbgs)	Observed Stratigraphy
BHG6 A1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG6 B1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG6 B1-DUP	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG6 C1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG6 C1-DUP	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG6 A2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG6 B2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG6 C2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG7 A1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG7 B1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG7 C1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG7 A2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.

Borehole ID	Depth (mbgs)	Observed Stratigraphy
BHG7 B2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG7 C2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG8 A1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG8 B1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG8 C1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG8 A2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG8 B2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG8 C2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHE4 A1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHE4 B1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHE4 C1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHE4 A2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.

Borehole ID	Depth (mbgs)	Observed Stratigraphy
BHE4 B2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHE4 C2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
BHG6 A1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
E-25-A1	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-25-B1	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-25-C1	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-25-A2	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-25-B2	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-25-C2	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-27-A1	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-27-B1	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-27-C1	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-27-A2	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-27-B2	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
E-27-C2	0.0 – 0.1	Topsoil
	0.1 – 1.2	Fill- Sand and Gravel, Asphalt traces, dry, black
S1	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.

Borehole ID	Depth (mbgs)	Observed Stratigraphy
S2	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S3	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S4	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S5	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S6	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S7	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S7-DUP	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S8	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S9	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S10	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S10-DUP	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S11	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.



Borehole ID	Depth (mbgs)	Observed Stratigraphy
S12	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S12-DUP	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S13	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S14	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S14-DUP	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S15	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S16	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S17	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S18	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S19	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S20	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S21	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.

Borehole ID	Depth (mbgs)	Observed Stratigraphy
S22	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S23	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S24	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S25	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S26	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S27	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S28	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S29	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S30	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S31	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S32	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S33	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.
S34	0 - 0.1	Topsoil
	0.1 – 0.7	Fill- clayed silt to sandy silt, traces of organic matter, moist, brown.
	0.7 – 2.0	Clayed Silt Till- traces of sand and gravel, stiff to very moist, brown.

## **Appendix C**

### **Eurofins Scientific Certificate of Analysis**