Soil Engineers Ltd.
CONSULTING ENGINEERS
GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE
90 WEST BEAVER CREEK ROAD, SUITE #100, RICHMOND HILL, ONTARIO L4B 1E7 · TEL (416) 754-8515 · FAX (905) 881-8335

BARRIE	MISSISSAUGA	OSHAWA	NEWMARKET	GRAVENHURST	PETERBOROUGH	HAMILTON
TEL: (705) 721-7863	TEL: (905) 542-7605	TEL: (905) 440-2040	TEL: (905) 853-0647	TEL: (705) 684-4242	TEL: (905) 440-2040	TEL: (905) 777-7956
FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (905) 881-8335	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

A REPORT TO

MILLFORD DEVELOPMENT LIMITED

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

PROPOSED RESIDENTIAL DEVELOPMENT

55 EAGLE STREET

TOWN OF NEWMARKET

Reference No. 2007-E048

February 4, 2021

DISTRIBUTION

3 Copies - Millford Development Limited

LIMITATIONS OF LIABILITY

This report was prepared by Soil Engineers Ltd. for the account of Millford Development Limited for review by their designated agents, financial institutions and government agencies. Use of the report is subject to the conditions and limitations of the contractual agreement. The material in it reflects the judgement of Munir Ahmad, M.Sc. P.Eng., Arshad Shaikh, M.Sc., P.Eng. and Eleni Girma Beyene, P.Eng., QP_{ESA} in light of the information available at the time of preparation. Any use which a Third Party makes of this report, and/or any reliance on decisions to be made based on it, is the responsibility of such Third Parties. Soil Engineers Ltd. accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

One must understand that the mandate of Soil Engineers Ltd. is to obtain readily available past and present information pertinent to the subject site and to analyze representative soil and groundwater samples for a Phase Two Environmental Site Assessment only. No other warranty or representation, expressed or implied, as to the accuracy of the information is included or intended by this assessment. Site conditions, environmental or otherwise, are not static and this report documents site conditions observed at the time of the last sampling.

It should be noted that the information supplied in this report is not sufficient to obtain approval for disposal of excess soil or materials generated during construction.

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1

2.0 INTRODUCTION 2
2.1 Site Description 2
2.2 Property Ownership 3
2.3 Current and Proposed Uses 3
2.4 Applicable Site Condition Standards 3

3.0 BACKGROUND 5
3.1 Physical Setting 5
3.2 Past Investigations 6

4.0 SCOPE OF THE INVESTIGATION 7
4.1 Overview of Site Investigation 7
4.2 Media Investigated 8
4.3 Phase One Conceptual Site Model 8
4.4 Deviations From Sampling and Analysis Plan 9
4.5 Impediments 9

5.0 INVESTIGATION METHOD 10
5.1 General 10
5.2 Drilling and Excavating 10
5.3 Soil Sampling 11
5.4 Field Screening Measurements 12
5.5 Groundwater Monitoring Well Installation 12
5.6 Groundwater: Field Measurement of Water Quality Parameters 13
5.7 Groundwater: Sampling 13
5.8 Sediment Sampling 14
5.9 Analytical Testing 14
5.10 Residue Management Procedures 14
5.11 Elevation Surveying 14
5.12 Quality Assurance and Quality Control Measures 15

6.0 REVIEW AND EVALUATION 17
6.1 Geology 17
6.2 Groundwater: Elevations and Flow Direction 18
6.3 Groundwater: Hydraulic Gradients 19
6.4 Fine-Medium Soil Texture 19
6.5 Soil: Field Screening 19
6.6 Soil Quality 20
6.7 Groundwater Quality 21
6.8 Sediment Quality 23

6.9 Quality Assurance and Quality Control Results 23
6.9.1 Field Quality Assurance/Quality Control Samples 23
6.9.2 Sample Handling in Accordance with the Analytical Protocol 24
6.9.3 Certification of Results 25
6.9.4 Data Validation 25
6.9.5 Data Quality Objectives 26
6.10.1 Phase Two Conceptual Site Model 26
6.10.1.1 Areas where Potentially Contaminating Activity Has Occured 26
6.10.1.2 Areas of Potential Environmental Concern 28
6.10.1.3 Subsurface Structures and Utilities 29
6.10.2 Physical Setting 29
6.10.2.1 Stratigraphy 29
6.10.2.2 Hydrogeological Characteristics 30
6.10.2.3 Approximate Depth to Bedrock 30
6.10.2.4 Approximate Depth to Water Table 31
6.10.2.5 Section 41 or 43.1 of the Regulation 31
6.10.2.6 Soils Placed On, In or Under the Phase Two Property 31
6.10.2.7 Proposed Building and Other Structures 32
6.10.3 Contamination In or Under the Phase Two Property 32
6.10.4 Potential Exposure Pathways and Receptors 33

7.0 CONCLUSION 34

8.0 REFERENCES 37

TABLES

Monitoring Well Installation ..... Table I
Water Levels ..... Table II
Soil Data ..... Table III
Groundwater Data ..... Table IV
Maximum Concentration (Soil) ..... Table V
Maximum Concentration (Groundwater) ..... Table VI

FIGURES

Site Location Plan ..... Drawing No. 1
Borehole and Monitoring Location Plan ..... Drawing No. 2
Cross-Section Key Plan ..... Drawing No. 3
Geological Cross-Sections (A-A' and B-B') ..... Drawing No. 4
Inferred Shallow Groundwater Contour Map ..... Drawing No. 5

APPENDICES

Sampling and Analysis Plan ..... Appendix 'A'
Borehole Logs ..... Appendix 'B'
Certificate of Analysis (Soil Samples) ..... Appendix 'C'
Certificate of Analysis (Groundwater Samples) ..... Appendix 'D'

1.0 EXECUTIVE SUMMARY

Soil Engineers Ltd. (SEL) was retained by Millford Development Limited to carry out a Phase Two Environmental Site Assessment (Phase Two ESA), as defined by Ontario Regulation (O. Reg.) 153/04, as amended. The subject property is located on the north side of Eagle Street, approximately 110 m east of Yonge Street in the Town of Newmarket (hereinafter referred to as the 'subject site').

The purpose of the Phase Two ESA was to determine the soil and groundwater quality at the subject site, as related to the environmental concerns identified in our Phase One Environmental Site Assessments (Phase One ESA).

The field work was performed at selected locations on the subject site. Soil and groundwater samples were collected and submitted for chemical analysis in accordance with the Table 8, Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for Residential/Parkland/Institutional/ Industrial/Commercial/ Community Property Use (Table 8 Standards), as published in the "Soil, Ground Water and Sediment Standards for Use Under Part XV. 1 of the Environmental Protection Act" (EPA), April 15, 2011 (Table 2 Standards).

A review of the analytical test results of soil and groundwater samples indicates the tested parameters at the test locations meet the Table 2 Standards. Consequently, there are no contaminants identified at the test locations at a concentration above the applicable site condition standards (Table 8 Standards) during the Phase Two ESA.

Based on the findings of the Phase Two ESA, it is our opinion that the subject site is suitable for the proposed development. No further environmental investigation is recommended at this time.

2.0 INTRODUCTION

Soil Engineers Ltd. (SEL) was retained by Millford Development Limited to carry out a Phase Two Environmental Site Assessment (Phase Two ESA), as defined by Ontario Regulation (O. Reg.) 153/04, as amended by O. Regs. 366/05, 66/08, 511/09, 245/10, 179/11, 269/11 and 333/13, herein referred to as O. Reg. 153/04. The subject property is located on the north side of Eagle Street, approximately 110 m east of Yonge Street in the Town of Newmarket (hereinafter referred to as the 'subject site').

The purpose of the Phase Two ESA is to determine the soil and groundwater quality at the subject site, as related to the Areas of Potential Environmental Concerns (APECs) identified in our Phase One Environmental Site Assessment (Phase One ESA).

2.1 Site Description

The property, irregular in shape and approximately 5.09 hectares (12.57 acres) in area, is located on the north side of Eagle Street, approximately 110 m east of Yonge Street in the Town of Newmarket. The Property Identification Number (PIN) of the subject site is 03598-0309 (LT). The municipal address and PIN along with their legal descriptions included in the subject site are summarized in the table below:

PIN	Property Description from Parcel Register	Municipal Address
03598-0309 (LT)	PT LOTS 2 & 3, PL 49 PTS 1,2,3 & 4, 65R27436, EXCEPT PTS 1,2,3,4,5,6,7, 65R30328; NEWMARKET; CONFIRMED TO SOUTHERLY LIMIT OF PTS 1 & 2, 65R27436 BA236; S/T EASE OVER PT 2, 65R27436 AS IN B43032B;	55 Eagle Street

At the time of the assessment, the subject site is vacant with no building/structures. The neighbouring properties consist of residential properties to the north and east, an auto repair garage to the southeast, residential and commercial properties to the south and commercial properties and a vacant property to the west.

2.2 Property Ownership

This Phase Two ESA was commissioned to address the APECs identified in Phase One ESA and in accordance with our proposal approved by Mr. Frank Orsi. Our client can be contacted at:

Millford Development Limited
P.O. Box 215
Newmarket, Ontario
L3Y 4X1

Attention: Mr. Frank Orsi

2.3 Current and Proposed Future Uses

The subject site is currently vacant. The subject site will be used for residential purposes.

2.4 Applicable Site Condition Standards

SEL has selected the applicable regulatory criteria from O. Reg. 153/04, as amended under the Environmental Protection Act, to assess the analytical data from the submitted soil and groundwater samples. The following information was used to select the appropriate criteria:

- The subject site is not considered to be sensitive based on the definition set forth in O. Reg. 153/04 as amended, as the property is not within/adjacent/part of an area of natural significance and the analytical testing indicated the pH of the tested surface soil samples is between 5 and 9 and subsurface soil samples is between 5 and 11.
- The property is not a shallow soil property, as the bedrock was not encountered within 2.0 m below ground surface (mbgs) during the investigation.
- Sixty (60) water well records are located within the Phase One Study Area.
- A water body (a tributary of Holland River East Branch) traverses through the subject

site.

- Generic Site Condition criteria for Use within 30 m of a Water Body is to be used in this assessment.
- The intended property use of the subject site is residential use.

Based on the above evaluation, the Ministry of the Environment, Conservation and Parks (MECP) Table 8, Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for Residential/Parkland/Institutional/ Industrial/Commercial/ Community Property Use (Table 8 Standards), as published in the "Soil, Ground Water and Sediment Standards for Use Under Part XV. 1 of the Environmental Protection Act" (EPA), April 15, 2011, has been selected for assessing the soil and groundwater condition at the subject site.

3.0 BACKGROUND

3.1 Physical Setting

Based on the information obtained from our Phase One ESA, the general physical setting of the subject site is summarized below:

The subject site is located within a mixed residential and commercial area in the Town of Newmarket. At the time of the assessment, the neighbouring properties consist of residential properties to the north and east, an auto repair garage to the southeast, residential and commercial properties to the south and commercial properties and a vacant property to the west.

A geological map of the area located at the Ontario Geological Survey indicates that subject site is underlain predominantly by Newmarket Till deposits of sandy silt to silt matrix. The subject site is underlain by bedrock of Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member and Eastview Member (shale, limestone, dolostone and siltstone). According to the Ontario Geological Survey Bedrock Cross Section Viewer, the depth of bedrock in the general vicinity of the subject site is approximately 103 meters below ground surface (mbgs).

The subject site is adjacent to Eagle Street to the south. The overall grade of the subject site generally descends towards the northeast. The subject site is located in the larger hydrogeological region known as Southern Ontario Lowlands. A watershed map provided by Land Information Ontario shows the subject site is situated in the Lake Simcoe Watershed.

Based on the review of the Ontario Ministry of Natural Resources and Forestry Natural Heritage Information Centre for listings of the various classes of natural areas located within the vicinity of the subject site, there is no Area of Natural Significance located at the subject site or neighbouring properties within 30 m of the subject site boundary. A water body (a tributary of Holland River East Branch) traverses through the subject site.

3.2 Past Investigations

The following previous investigation report prepared by SEL for the subject site was reviewed as part of this Phase Two ESA:

- Phase One Environmental Site Assessment, Reference No. 200-E048, dated September 18, 2020

The Phase One ESA Update identified the Potentially Contaminating Activities (PCAs) at the subject site and in the Phase One Study Area that may contribute to APECs at the subject site, based on records review, interviews and site reconnaissance. The findings of the Phase One ESA include the following APECs:

APEC 1: Potential soil impact due to presence of fill material of unknown quality present in the south portion of the subject site.

APEC 2: Potential soil and groundwater impact due to presence of a gasoline service station with an auto repair facility and gasoline spill at neighbouring property located west of the subject site.

APEC 3: Potential soil and groundwater impact due to gasoline service station at neighbouring property located southwest of the subject site.

APEC 4: Potential soil and groundwater impact due to presence of auto repair facility and former UST at the adjacent property to the southeast of the subject site.

The locations of PCAs and APECs are illustrated on Drawing Nos. 1 and 2, respectively.

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of Site Investigation

The purpose of this investigation (Phase Two ESA) is to assess the soil and groundwater quality at the subject site, as related to the APECs raised in the findings of SEL Phase One ESA. This Phase Two ESA was conducted in general conformance with the CSA Standard Z769-00 and O. Reg. 153/04 as amended.

The scope of work for this investigation includes:

- Locate the underground and overhead utilities.
- Conduct a total of seven (7) boreholes ranging to depths of up to approximately 3 to 10 metres below ground surface (mbgs)
- Collect representative soil samples from the boreholes.
- Undertake field examination of the retrieved soil samples for visual and olfactory evidence of potential contamination.
- Undertake soil vapour measurements for the retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode.
- Install monitoring wells in four (4) boreholes for groundwater sampling and testing and/ or water level monitoring.
- Conduct groundwater monitoring and collect groundwater samples for chemical testing.
- Carry out analytical testing program on selected soil samples and groundwater samples including Quality Control/ Quality Assurance (A/QC) samples for one or more of the following parameters: Metals, Polycyclic Aromatic Hydrocarbons (PAHs), Petroleum Hydrocarbons (PHCs), and Volatile Organic Compounds (VOCs).
- Review analytical testing results of submitted soil and groundwater samples using applicable Site Condition Standards.
- Prepare a Phase Two ESA report containing the findings of the investigation.

Please note that BH/MW206 was installed to address the comments of Town of Newmarket as well as APEC 4 identified in our Phase One ESA.

The rationale for the selection of sampling locations is presented in the Sampling and Analysis Plan, Appendix 'A'.

4.2 Media Investigated

Based on the findings of our Phase One ESA, soil and groundwater media were investigated during the Phase Two ESA in accordance with the Sampling and Analysis Plan provided in Appendix 'A'. Sediment was not identified as a potentially contaminated medium in our Phase One ESA.

Seven (7) boreholes (BH201 to BH207) were advanced using a track-mounted drilling rig equipped with continuous shelby tube samplers. Soil samples were logged in the field and head space vapour screening was conducted for all retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode, calibrated with hexane and having a minimum detection level of 2 ppm (parts per million by volume).

Groundwater monitoring wells were installed in four boreholes (BH/MW201, BH/MW202, BH/MW206 and BH/MW207). The monitoring wells were constructed using 50 mm diameter flush-joint threaded PVC monitoring well supplies. They were completed with a 3.0 m in length intake screen. Groundwater sampling was conducted using dedicated low-density polyethylene tubing and laboratory-supplied containers (prepared with preservative for the analysis being conducted). The samples that were scheduled for analysis of metals were passed through a 0.45 micron filter as part of the sampling process.

4.3 Phase One Conceptual Site Model

A plan, illustrating the features of the subject site and surrounding areas within 250 m from the subject site boundaries including the locations of potentially contaminating activities (PCAs), is presented on Drawing No. 1.

4.4 Deviations From Sampling and Analysis Plan

No deviations from the sampling and analysis plan were encountered.

4.5 Impediments

No impediments were encountered during the investigation for the Phase Two ESA.

5.0 INVESTIGATION METHOD

5.1 General

The Phase Two ESA was carried out in accordance with the Sampling and Analysis Plan provided in Appendix 'A' and in accordance with the SEL Standard Operating Procedures.

The Phase Two ESA consisted of seven (7) boreholes, installation of monitoring wells in four (4) boreholes, field measurements, monitoring, and collection of soil samples from the boreholes and groundwater samples from the installed monitoring wells for chemical analysis. The soil and groundwater samples were assessed for potential contamination with respect to the APECs identified by our Phase One ESA.

The sampling and decontamination procedures were conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, as amended by O. Reg. 511/09.

Laboratory analytical methods, protocols and procedures were carried out in accordance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11.

5.2 Drilling and Excavating

Prior to the field work, the underground utilities were located and marked out in the field by representatives of the major utility companies and private locator (CL Underground Locates Inc.).

The field work for this investigation was conducted on November 24 to27, 2020, and consisted of seven (7) boreholes to depth ranging from 3.0 to 9.8 mbgs.

Boreholes BH201, BH202, BH206 and BH207 were completed as monitoring wells (designated as BH/MW201, BH/MW202, BH/MW206 and BH/MW207) to depths ranging from 6.0 mbgs to 9.8 mbgs for groundwater observation, sampling and testing. The locations of the boreholes and monitoring wells are shown on Drawing No. 2.

The boreholes were advanced using track-mounted drill rigs, equipped with continuous shelby tube samplers, supplied by specialist drilling contractor, Kodiak Drilling. Soil samples from the boreholes were recovered at regular intervals, using continuous shelby tube (thin-walled) samplers for soil vapour measurement, soil classification and visual and olfactory observations.

Drilling equipment such as drill rigs, augers, drill pipes, drilling rods and split-spoons are decontaminated prior to initial use, between borehole locations and at the completion of drilling activities. The drilling equipment is manually scrubbed with a brush using a phosphate-free solution and power washed to remove any adhered soils, foreign material and potential contaminants. In addition, any sampling equipment is decontaminated prior to each usage.

The field work was monitored by a SEL environmental technician who recorded the findings and observations.

5.3 Soil: Sampling

Soil samples from the boreholes were retrieved at regular intervals, using continuous shelby tube samplers. Prior to recovering a sample, the sampling equipment was brushed clean using a solution of phosphate-free detergent and distilled water, and each discrete sample was handled by the sampler with new disposable gloves in order to avoid the risk of cross-contamination between the samples. Each soil sample was split with part of the sample sealed in a laboratory-prepared glass jar and stored in a cooler with ice, and the remainder of the sample sealed in a double sealable bag for vapour measurement and soil classification. A small amount of the soil sample was retrieved by a disposable 'T' shaped Terracore sampler and the soil samples from the Terracore sampler were stored in methanol vials for PHC F1 and

VOCs analyses.

The subsoil condition at the borehole locations indicate that beneath a layer of earth fill or topsoil, the subject site is generally underlain by sandy silt till deposits at various depths and locations. No bedrock was encountered during the Phase Two ESA Detailed descriptions of the encountered subsurface conditions are presented on the Borehole Logs provided in Appendix 'B'.

Based on the soil vapour measurements and visual and olfactory observations, representative worst case soil samples from each borehole were selected and sent to the laboratory for chemical analyses. In the absence of visual and olfactory indications, samples for PHC and VOC analysis were selected based on apparent depth to the water table.

5.4 Field Screening Measurements

The headspace vapour concentrations were measured using a portable RKI Eagle gas detector, TYPE 101 (Serial Number: E0910111) set to include combustible gases with the exception of methane (methane elimination mode), and having a minimum detection level of 2 ppm (parts per million by volume). Prior to taking the measurements, the instrument was calibrated to hexane standards for both ppm and lower explosive limit (LEL) according to the instruction manual for the instrument. Our technician was trained by the supplier for the proper calibration procedure. The instrument is calibrated or tuned up by the supplier (Pine Environmental Services Inc.) seasonally.

The results of the soil vapour measurement are presented in the Borehole Logs, Appendix 'B'.

5.5 Groundwater: Monitoring Well Installation

A total of four (4) monitoring wells were installed at the subject site by Kodiak Drilling. The monitoring wells were constructed using 50 mm diameter PVC screen, 3.0 m in length at the bottom of the borehole. A PVC riser, capped at the top, was installed from the screen section above the top grade. A sand pack, consisting of clean silica sand, was placed around

the screened zone with a bentonite seal placed above the sand pack. The top of each well was sealed with concrete to approximately 0.3 mbgs. The above ground risers were protected by steel monument casings that have been sealed into the ground with concrete. The monitoring well construction details are provided on the Borehole Logs in Appendix 'B' and in Table I.

The monitoring wells installed at the subject site were instrumented with dedicated low-density polyethylene tubing to facilitate well development, purging and sampling requirements.

Groundwater development was performed following the drilling on December 4, 2020. The monitoring wells have been developed to remove any fluids that may have been introduced into the well during drilling and to remove particles that may have become entrained in the well and filter pack (three well casing volumes of groundwater in each well). Purged water was contained and stored at the subject site for future disposal.

5.6 Groundwater: Field Measurement of Water Quality Parameters

Groundwater monitoring and purging was conducted at the subject site on December 7, 2020. Water level measurements were taken using a water level meter (Dipper-T). Groundwater observations were recorded for colour, clarity, the presence or absence of any free product/surface sheen and any odours present during developing the wells. The water level measuring device was cleaned after each measurement using Alconox solution and water, followed by a distilled water rinse and a methanol rinse, in order to prevent cross-contamination between monitoring wells.

The records of water level measurements are presented in Table II.

5.7 Groundwater: Sampling

Groundwater sampling was conducted on December 7, 2020, after purging and allowing the water to stabilize. The groundwater purging and sampling activities were carried out using

dedicated low-density polyethylene tubing. Groundwater samples were collected into laboratory-supplied containers, prepared with preservative for the analysis being conducted.

The samples scheduled for analysis of metals were passed through a 0.45 micron filter as part of the sampling process.

5.8 Sediment: Sampling

Sediment was not assessed as part of this investigation.

5.9 Analytical Testing

The soil and groundwater samples were analysed by Bureau Veritas Laboratories (Bureau Veritas), Mississauga, Ontario. Bureau Veritas is accredited by the Canadian Association for Laboratory Accreditation (CALA) in accordance with ISO/IEC 17025:2005 – "General Requirements for the Competence of Testing and Calibration Laboratories" for all the parameters analysed during this investigation.

5.10 Residue Management Procedures

Excess soil generated from the drilling program for the investigation was stored at the subject site in metal barrels. Groundwater purged from the monitoring wells was stored in containers, using a separate container for each well. The metal barrels and containers are clearly marked and stored temporarily at the subject site for later disposal.

5.11 Elevation Surveying

The ground surface at the borehole locations were surveyed on December 8, 2020 using a hand-held unit (Trimble Geo7X – Serial Number 5609466707) Global Navigation Satellite System measurement equipment. The equipment is capable of having vertical and horizontal accuracy of ±0.1 m.

The elevations at the borehole and monitoring well locations are presented in Table II and the borehole/monitoring well logs in Appendix 'B'.

5.12 Quality Assurance and Quality Control Measures

The soil and groundwater sampling and analysis plan provided in Appendix 'A' was prepared and executed based on the findings of our Phase One ESA.

The Phase Two ESA was carried out in accordance with the Sampling and Analysis Plan and in accordance with the SEL Standard Operating Procedures.

The sampling and decontamination procedures were conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, as amended by O. Reg. 511/09.

Laboratory analytical methods, protocols and procedures were carried out in accordance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11.

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

SEL field sampling QA/QC protocols, applied to the investigation, are as follows:

- The collection of at least one field duplicate sample per ten (10) samples for every sampling media (where three or more such samples are collected).

- Where volatile organic chemical analysis is required, the collection of discrete samples directly into laboratory-prepared sample vials and immediate placement into a cooler with ice to maintain the temperature at less than 10 ^{o}C for transport to the laboratory.

- The use of dedicated equipment (bailers, Waterra tubing, etc.) for groundwater sampling at different monitors and the thorough cleaning of soil sampling equipment between sample sites.

- If trace organics in the collected samples are anticipated (organic chemicals with a concentration of less than 1 µg/g), precautions are made to avoid any possible cross-contamination (eliminating bare hand or latex glove contacts with the soil or water; soil sampling equipment used for the collection of trace organics are cleaned using a phosphate-free detergent and water, followed by a distilled water rinse and a methanol rinse between sampling sites.

- The inclusion of one trip blank for water samples per submission (where three or more samples are collected) for VOC parameters; the bottles containing the trip blank are prepared by the laboratory; QA/QC samples are kept in the cooler on ice for the duration of the sampling event, and returned to the laboratory for analyses.

The results of the field duplicate and trip blank samples are discussed later in Section 6.9 of this report.

6.0 REVIEW AND EVALUATION

6.1 Geology

Detailed descriptions of the encountered subsoil conditions are presented on the Borehole Logs provided in Appendix 'B'. The subsoil condition at the borehole locations indicate that beneath a layer of topsoil or earth fill, the subject site is generally underlain by sandy silt followed by sandy silt till deposits at various depths and locations. No bedrock was encountered during the Phase Two ESA. The cross section showing the geological stratigraphy of the investigated area is illustrated in Drawing Nos. 3 and 4.

The descriptions of the strata, encountered at the borehole and test pit locations are briefly discussed below:

Topsoil

Topsoil layer approximately 15 cm to 25 cm thick was encountered at the ground surface at the locations of all boreholes. The topsoil generally consisted of silty sand with organics.

Fill

An earthfill layer extending in depth from approximately 0.8 to 4.6 mbgs was contacted below topsoil at the locations all boreholes with the exception of BH201 and BH204. The earthfill consisted of silty sand and silty clay. Earth fill contained occasional asphalt fragments at the location of BH202.

Silty Sand

Brown sandy silt was contacted below topsoil and/or fill at the location of one borehole, BH204 extending to 3.8 mbgs.

Sandy Silt

Brown sandy silt was contacted below topsoil and/or fill at the locations of BH201, BH203 and BH205 to BH207 at depths ranging from 0.8 to 5.3 mbgs. Boreholes BH203 and BH205 were terminated in sandy silt layer. The sandy silt was in moist condition.

Sandy Silt Till

Brown to grey sandy silt till was contacted below sandy silt at the locations of boreholes BH201, BH203, BH206 to BH207 extending to depths ranging from 6.1 to 9.8 mbgs. BH201, BH203, BH206 to BH207 were terminated in this layer.

Hydrogeology

Based on the field observations and groundwater monitoring records (as indicated in the section below), shallow groundwater is present in the sandy silt till deposit. This hydrogeologic unit at the subject site was investigated for the Phase Two ESA.

6.2 Groundwater: Elevations and Flow Direction

Four (4) monitoring wells were installed at the locations of BH/MW201, BH/MW202, BH/MW206 and BH/MW207 during the field investigation for the Phase Two on November 24 to 27, 2020. The monitoring wells were installed at depths ranging from 6.0 mbgs to 9.8 mbgs. Groundwater records were documented during the groundwater purging and monitoring round on December 4, 2020 and during the groundwater sampling round on December 7, 2020.

On December 7, 2020 during the groundwater sampling round, water levels were recorded at depths ranging from 2.97 mbgs (BH/MW206) to 5.39 mbgs (BH/MW201). The corresponding water table elevations are 255.53 masl and 261.71 masl, respectively.

The ground elevations of the monitoring wells were surveyed on December 8, 2020 using a hand-held unit (Trimble Geo7X – Serial Number 5609466707) Global Navigation Satellite System measurement equipment. Water level measurements were taken using a water level meter (Dipper-T). The top of the well casings were used as a reference point to determine the groundwater table. The measurements were reduced to static elevations based on the monitoring well survey data. Shallow groundwater levels were used to determine the flow direction. Based on the groundwater monitoring records, the groundwater flow direction appears to be to the northeast.

The groundwater elevations measured in the monitoring wells are summarized in Table II. The shallow groundwater contours and interpreted ground water flow direction are shown on Drawing No. 5. Based on the groundwater monitoring records, the groundwater flow direction appears to be to the northeast.

6.3 Groundwater: Hydraulic Gradients

Based on the groundwater records of the investigation, the horizontal hydraulic gradient for the investigated aquifer at the subject site is between 0.016 and 0.036 m/m (average 0.026 m/m).

6.4 Fine-Medium Soil Texture

No grain size analysis was performed as part of the Phase Two ESA. Therefore, site condition standards for Coarse Textured soils were used in the assessment.

6.5 Soil: Field Screening

Head space vapour screening was conducted for all retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode, calibrated with hexane and having a minimum detection level of 2 ppm. Vapour readings recorded for the soil samples ranged from non-detect to 90 ppm.

6.6 Soil Quality

Representative "worst case" soil samples from each sampling location were selected based on the soil vapour measurements and visual and olfactory observations. The selected soil samples were submitted to the laboratory for chemical analyses of Metals, PHCs, BTEX, VOCs and PAHs.

The soil test results were reviewed using the Table 8, Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for Residential /Parkland/Institutional/ Industrial/Commercial/Community Property Use (Table 8 Standards), as published in the "Soil, Ground Water and Sediment Standards for Use Under Part XV. 1 of the EPA", April 15, 2011.

Soil quality data containing results of the chemical analyses for the tested soil samples is presented in Table III. Maximum concentrations of the tested parameters in soil are presented in Table V.

The Certificates of Analyses for the soil samples are presented in Appendix 'C'.

The findings of the soil test results are summarized below:

Metals

Seven (7) original soil samples and two (2) field duplicate sample were submitted for analysis of metals. The test results indicate that all soil samples for the tested parameters meet Table 8 Standards with the exception of one sample BH207/1B (0.2 – 0.6 mbgs). The zinc concentration of BH207/1B detected at 440 µg/g exceeded the Table 8 Standard value of 290 µg/g.

Two (2) additional soil samples S1 and S2 were collected from within 2m of the location of BH207/1B at the same depth interval and submitted for analysis of metals. The average of the zinc concentration (256.3 µg/g) detected in samples BH207/1B and the two additional samples

met the the Table 8 Standard value of 290 µg/g.

The concentration of lead in sample S1 detected at 180 µg/g exceeded the Table 8 Standard value of 120 µg/g. The average concentration of lead (104.3 µg/g) detected in samples BH207/1B and the two additional samples met the the Table 8 Standard value of 120 µg/g.

Volatile Organic Compounds (VOCs)

Five (5) original soil samples and one (1) field duplicate sample were submitted for analysis of VOCs. The test results indicate the tested soil samples were below the laboratory reported detection limits and meet the Table 8 Standards.

Petroleum Hydrocarbons (PHCs) and BTEX

Six (6) original soil samples were submitted for analysis of PHCs and BTEX. The test results indicate the tested soil samples were below the laboratory reported detection limits and meet the Table 8 Standards.

Polycyclic Aromatic Hydrocarbons (PAHs)

Five (5) original soil samples were submitted for analysis of PAHs. The test results indicate the tested soil samples were below the laboratory reported detection limits and meet the Table 8 Standards.

6.7 Groundwater Quality

Groundwater samples collected from four (4) monitoring wells at the subject site were submitted to the laboratory for chemical analysis of PHCs, VOCs, PAHs and Metals.
The groundwater test results were reviewed using Table 8, Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for All Types of Property Use (Table 8 Standards), as published in the "Soil, Ground Water and Sediment Standards for Use Under Part XV. 1 of the EPA", April 15, 2011.

Groundwater quality data containing results of the chemical analyses for the tested groundwater samples is presented in Table IV. Maximum concentrations of the tested parameters in groundwater are presented in Table VI.

The Certificates of Analyses for the groundwater samples are presented in Appendix 'D'.

The findings of the groundwater test results are summarized below:

Metals

Four (4) original groundwater samples and one (1) field duplicate groundwater sample were submitted for analysis of metals. The test results indicate the tested groundwater samples meet the Table 8 Standards.

Volatile Organic Compounds (VOCs)

Four (4) original groundwater samples and one (1) field duplicate groundwater sample were submitted for analysis of VOCs. In addition, one (1) trip blank sample was submitted for analysis of VOCs.

The test results indicate the tested groundwater samples meet the Table 8 Standards.

Petroleum Hydrocarbons (PHCs)

Four (4) original groundwater samples were submitted for analysis of PHCs. The test results indicate the tested groundwater samples meet the Table 8 Standards.

Polycyclic Aromatic Hydrocarbons (PAHs)

Four (4) original groundwater samples were submitted for analysis of PAHs. The test results indicate the tested groundwater samples meet the Table 8 Standards.

6.8 Sediment Quality

Sediment was not assessed as part of this investigation.

6.9 Quality Assurance and Quality Control Results

The Phase Two ESA was carried out in accordance with the Sampling and Analysis Plan and in accordance with the SEL Standard Operating Procedures.

The sampling and decontamination procedures were conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, as amended by O. Reg. 511/09.

Laboratory analytical methods, protocols and procedures were carried out in accordance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11 (herein referred to as Analytical Protocol).

6.9.1 Field Quality Assurance/Quality Control Samples

As part of the QA/QC program for the Phase Two ESA, QC samples in the form of field duplicate and trip blank samples were analysed. Field duplicate samples were collected in the field for metals and VOCs in soil and groundwater. One (1) trip blank for VOCs was shipped with the batch of the groundwater samples submitted for analysis. Details of QC samples are presented in the table below.

Field Duplicate

A total of three (3) field duplicate soil samples and two (2) field duplicate groundwater samples were collected and submitted for chemical analysis. Details of the duplicate sampling and analysis are presented in the table below:

Duplicate Sample ID	Original Sample ID	Media	Test Conducted
DUP S1	BH205/6	Soil	VOCs
DUP S2	BH204/1B	Soil	Metals
DUP S3	BH202/2	Soil	Metals
DUP W1	BH/MW207	Groundwater	Metals
DUP W2	BH/MW206	Groundwater	VOCs

The result of the analysis of the field duplicate samples is similar to the results for the original samples and relative percent differences (RPDs) for the detectable tested parameters are within an acceptable range for all parameters therefore data is considered reliable. The RPD of copper between the original sample MW207 and its duplicate MW207 was not calculated as the concentrations of copper were below five (5) times the reporting detection limit (RDL) of copper. The RPDs could not be calculated between the original and duplicate samples in the situation where the original and/or duplicate samples were below the RDLs.

Trip Blank

One trip blank sample was submitted to the laboratory for analysis of VOCs. The trip blank sample was found to be below the reported laboratory detection limits.

There was no issue with the trip blank that was shipped with the batch of the groundwater samples submitted for analysis.

The Certificates of Analysis for the QA/QC samples are included in Appendices 'C' and 'D'.

6.9.2 Sample Handling in Accordance with the Analytical Protocol

The samples analyzed as part of the Phase Two ESA were handled in accordance with the analytical protocol with respect to holding time, preservation method, storage requirement and sample container type.

6.9.3 Certification of Results

Based on the review of the QA/QC sample results for the soil and groundwater samples of this investigation, the Chain of Custody forms and the laboratory Certificate of Analysis, it is certified that:

- All Certificates of Analysis or Analytical Reports received pursuant to Section 47(2) of O. Reg. 153/04, as amended, comply with Section 47(3) of O. Reg. 153/04, as amended.
- A Certificate of Analysis or Analytical Report was received for each sample submitted for analysis.
- Copies of all Certificates of Analysis are included in Appendices 'C' and 'D'.

6.9.4 Data Validation

The Analytical Protocol establishes Acceptance Limits for use when assessing the reliability of data reported by analytical laboratories including maximum holding times for the storage of samples/sample extracts between collection and analysis, analytical methods, field and/or laboratory quality assurance samples, recovery ranges for spiked samples and surrogates, Reporting Detection Limits (RDLs), mandatory maximum method detection limits) and precision required when analyzing laboratory replicate and spiked samples.

The review of the data in the Certificate of Analysis indicates:

- All samples/sample extracts were analyzed within their applicable holding times using approved analytical methods.
- No tested parameters were detected in any laboratory blank samples.
- The RDLs were met for all tested parameters.
- The result of the analysis of the field duplicate samples is similar to the results for the original samples and relative percent differences (RPDs) for the detectable tested parameters, where applicable, are within an acceptable range for all parameters, hence data is considered reliable.

6.9.5 Data Quality Objectives

In conclusion, the overall quality of field data did not affect decision making and the overall objectives of the investigation were met.

6.10.1 Phase Two Conceptual Site Model

The Phase Two Conceptual Site Model is prepared based on the findings of the Phase One Environmental Site Assessment (ESA) and this Phase Two Environmental Site Assessment (ESA).

6.10.1 Description and Assessment

The property, irregular in shape and approximately 5.09 hectares (12.57 acres) in area, is located on the north side of Eagle Street, approximately 110 m east of Yonge Street in the Town of Newmarket. The Property Identification Number (PIN) of the subject site is 03598-0309 (LT). The municipal address and PIN along with their legal descriptions included in the subject site are summarized in the table below:

PIN	Property Description from Parcel Register	Municipal Address
03598-0309 (LT)	PT LOTS 2 & 3, PL 49 PTS 1,2,3 & 4, 65R27436, EXCEPT PTS 1,2,3,4,5,6,7, 65R30328; NEWMARKET; CONFIRMED TO SOUTHERLY LIMIT OF PTS 1 & 2, 65R27436 BA236; S/T EASE OVER PT 2, 65R27436 AS IN B43032B;	55 Eagle Street

6.10.1.1 Areas where Potentially Contaminating Activity Has Occured

The following Areas of Potential Environmental Concern (APECs) were identified at the subject site.

On-site PCAs

- Fill material of unknown quality is present in the south portion of the subject site. #30-Importation of Fill Material of Unknown Quality

Off-site PCAs

- A gasoline service station with an auto repair facility and spill records is located approximately 30 m west of the subject site. #28 – Gasoline and Associated Products Storage in Fixed Tanks; and #52- Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems; and #Other-Spills
- A gasoline service station with auto repair facility is located approximately 65 m southwest of the subject site. #28 – Gasoline and Associated Products Storage in Fixed Tanks; and #52- Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems
- An auto repair facility and former UST were located adjacent to the southeast of the subject site. #28 – Gasoline and Associated Products Storage in Fixed Tanks, and #52-Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems

Additional off-site PCAs which did not result in Areas of Potential Environmental Concern due to relatively large distance from the subject site and/or down/trans-gradient location are listed below.

- A gasoline service station with auto repair activities was located approximately 100 m west of the subject site. #28 – Gasoline and Associated Products Storage in Fixed Tanks, and #52- Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems
- An auto repair facility was located approximately 120 m southwest of the subject site. #52- Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems
- An auto repair facility was located approximately 190 m southwest of the subject site.

#52- Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems

- An auto repair facility was located approximately 230 m northwest of the subject site. #52- Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems
- A Region of York Facility with associated waste generator records and UST is located approximately 130m northwest of the subject site. #28 – Gasoline and Associated Products Storage in Fixed Tanks, and #Other- Waste Generator
- A recycling company with a waste generator record was located approximately 130m northwest of the subject site. #Other- Waste Generator
- A realty services company with waste generator record was located approximately 220m southwest of the subject site boundary. . #Other- Waste Generator
- One (1) veterinarian with waste generator records is located approximately 140 m southwest of the subject site. #Other- waste generator
- BFM Enterprises Ltd. with associated waste generator record was located approximately 110m north of the subject site. #Other- waste generator
- Businesses with limited pesticide vendor licnese were located approximately 65 m northwest of the subject site. #40 – Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications
- Additional five (5) spill incidents pertaining to discharge/release of rodenticide, non-PCB transformer oil, hydraulic oil occurred at distances ranging from 125 to 230 m from the subject site. #Other- Spills

The locations of PCAs are shown on Drawing No. 1.

6.10.1.2 Areas of Potential Environmental Concern

The following Areas of Potential Environmental Concern (APECs) were identified at the subject site.

APEC 1: Potential soil impact due to presence of fill material of unknown quality present in the south portion of the subject site.

APEC 2: Potential soil and groundwater impact due to presence of a gasoline service station with an auto repair facility and gasoline spill at neighbouring property located west of the subject site.

APEC 3: Potential soil and groundwater impact due to gasoline service station at neighbouring property located southwest of the subject site.

APEC 4: Potential soil and groundwater impact due to presence of auto repair facility and former UST at the adjacent property to the southeast of the subject site.

The locations of APECs are shown on Drawing No. 2.

6.10.1.3 Subsurface Structures and Utilities

Since no contaminants are found at the test locations at a concentration above the applicable site condition standard, no subsurface structures or utilities with the potential to affect contaminants distribution or transport are identified at the subject site.

6.10.2 **Physical Setting**

6.10.2.1 Stratigraphy

A geological map of the area located at the Ontario Geological Survey indicates that subject site is underlain predominantly by Newmarket Till deposits of sandy silt to silt matrix. The subject site is underlain by bedrock of Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member and Eastview Member (shale, limestone, dolostone and siltstone). According to the Ontario Geological Survey Bedrock Cross Section Viewer, the depth of bedrock in the general vicinity of the subject site is approximately 103 meters below ground surface (mbgs).

The field investigation for the Phase Two ESA consisted of seven (7) boreholes to depth ranging from 3.0 to 9.8 mbgs. Boreholes BH201, BH202, BH206 and BH207 were completed

as monitoring wells (designated as BH/MW201, BH/MW202, BH/MW206 and BH/MW207) to depths ranging from 6.0 mbgs to 9.8 mbgs for groundwater observation, sampling and testing. The subsoil condition at the borehole locations indicate that beneath a layer of topsoil or earth fill, the subject site is generally underlain by sandy silt followed by sandy silt till deposits at various depths and locations. No bedrock was encountered during the Phase Two ESA.

The Sampling Location Plan is shown on Drawing No. 2. The locations of cross-sections for soil stratigraphy at the subject site are presented on Drawing No. 3. Geological Cross Sections A-A' and B-B' are presented on Drawing No. 4.

6.10.2.2 Hydrogeologicl Characteristics

The subject site is located in the larger hydrogeological region known as Southern Ontario Lowlands. A watershed map provided by Land Information Ontario shows the subject site is situated in the Lake Simcoe Watershed. The overall grade of the subject site generally descends to the northeast.

A total of four (4) monitoring wells were installed at the subject site during the field investigation for the Phase Two ESA. The monitoring wells were installed at depths ranging from 6.0 mbgs to 9.8 mbgs. Based on the groundwater records, the groundwater flow direction appears to be to the northeast. The shallow groundwater contours and interpreted groundwater flow direction are shown on Drawing No. 5.

Based on the groundwater records of the investigation, the horizontal hydraulic gradient for the investigated aquifer at the subject site is between between 0.016 and 0.036 m/m (average 0.026 m/m).

6.10.2.3 Approximate Depth to Bedrock

Bedrock was not encountered at the subject site during the field investigation within the maximum drilling depth of 9.8 mbgs. According to the Ontario Geological Survey Bedrock

Cross Section Viewer, 2010, the depth of bedrock in the general vicinity of the subject site is approximately 103 m.

6.10.2.4 Approximate Depth to Water Table

Based on the groundwater records for the site investigation, depth to the water table at the subject site ranges from 2.97 mbgs to 5.39 mbgs.

6.10.2.5 Section 41 or 43.1 of the Regulation

There is no area of natural significance at the subject site or within 30 m from the subject site boundaries. The analytical results indicated that the pH value of the tested soil samples is between 5 and 9 for surface soil, and between 5 and 11 for subsurface soil. Therefore, Section 41 of the regulation (Site Condition Standards, Environmental Sensitive Areas) does not apply to the subject site.

The property is not a shallow soil property, as the bedrock was not encountered within 2.0 mbgs during the investigation. A water body (a tributary of Holland River East Branch) traverses through the subject site. Therefore, Section 43.1 of the Regulation (Site Condition Standards, Shallow Soil Property or Water Body) is applicable to the subject site.

6.10.2.6 Well Records

Based on the Water Well Information System, provided by the MECP, sixty (60) wells are located within the Phase One Study Area.

6.10.2.7 Soils Placed On, In or Under the Phase Two Property

The findings of our Phase One ESA and the field investigation of the Phase Two ESA indicated that fill material is present in the south portion of the subject site. The depth of fill material ranges from approximately 0.8 m at BH/MW203, BH/MW206 and BH/MW207 to 4.6 m at BH/MW205. No fill was encountered at BH/MW201 and BH/MW204. No fill

material was brought on to the subject site during this Phase Two ESA.

6.10.2.8 Proposed Building and Other Structures

The subject site will be used used for residential purposes. It is anticipated that the new development will be provided with municipal services meeting urban standards.

6.10.3 Contamination In or Under the Phase Two Property

Based on the findings of the Phase One ESA, contaminants of potential concern in soil and groundwater with respect to the identified APECs at the subject site were assessed during the Phase Two ESA.

Based on the information obtained from the Phase One ESA and Phase Two ESA, the Ministry of the Environment, Conservation and Parks (MECP) Table 8, Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for Residential/Parkland/Institutional/ Industrial/Commercial/Community Property Use (Table 8 Standards), as published in the "Soil, Ground Water and Sediment Standards for Use Under Part XV. 1 of the Environmental Protection Act" (EPA), April 15, 2011, has been selected for assessing the soil and groundwater condition at the subject site.

6.10.3.1 Area Where Contaminants are Present

Soil and groundwater samples were collected during the Phase Two ESA and submitted for chemical analysis of one or more of the following parameters: Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Metals, Arsenic (As), Selenium (Se), Antimony (Sb), Mercury (Hg), Hexavalent Chromium Cr(VI), and Hot Water Soluble Boron (B-HWS).

A review of the analytical test results of soil and groundwater samples indicates the tested samples for the tested parameters meet the Table 8 Standards.

Consequently, there are no contaminants identified at the test locations at a concentration above the applicable site condition standards (Table 8 Standards) during the Phase Two ESA.

6.10.3.2 Distribution of Contaminants

No contaminants are identified at the test locations at a concentration above the applicable site condition standards.

6.10.3.3 Contaminant Medium

No contaminants are identified at the test locations at a concentration above the applicable site condition standards.

6.10.3.4 Reasons for Discharge

No contaminants are identified at the test locations at a concentration above the applicable site condition standards.

6.10.3.5 Migration of Contaminants

No contaminants are identified at the test locations at a concentration above the applicable site condition standards.

6.10.4 Potential Exposure Pathways and Receptors

Since no contaminants are found at the test locations at a concentration above the applicable site condition standard (Table 8 Standards), no potential exposure pathways and receptors are identified.

7.0 CONCLUSIONS

The purpose of the Phase Two Environmental Site Assessment (Phase Two ESA) was to determine the soil and groundwater quality at the subject site, as related to the following Areas of Potential Environmental Concern (APECs) identified in our Phase One Environmental Site Assessment (Phase One ESA):

APEC 1: Potential soil impact due to presence of fill material of unknown quality present in the south portion of the subject site.

APEC 2: Potential soil and groundwater impact due to presence of a gasoline service station with an auto repair facility and gasoline spill at neighbouring property located west of the subject site.

APEC 3: Potential soil and groundwater impact due to gasoline service station at neighbouring property located southwest of the subject site.

APEC 4: Potential soil and groundwater impact due to presence of auto repair facility and former UST at the adjacent property to the southeast of the subject site.

The findings of the field investigation and analytical results of the Phase Two ESA are summarized below:

- The field investigation for the Phase Two ESA consisted of seven (7) boreholes to depth ranging from 3.0 to 9.8 mbgs.
- Four (4) boreholes (designated as BH/MW201, BH/MW202, BH/MW206 and BH/MW207) to depths ranging from 6.0 mbgs to 9.8 mbgs for groundwater observation, sampling and testing.
- The subsoil condition at the borehole locations indicate that beneath a layer of topsoil or earth fill, the subject site is generally underlain by sandy silt followed by sandy silt till deposits at various depths and locations. No bedrock was encountered during the Phase Two ESA.
- The soil samples retrieved from the sampling location were examined for visual and olfactory evidence of potential contamination. No evidence of contamination was documented in any of the retrieved soil samples.

- Head space vapour screening was conducted for all retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode. Vapour readings recorded for the soil samples ranged from non-detect to 90 ppm.
- Based on the soil vapour measurements, visual and olfactory observations and/or proximity to apparent water table, representative "worst case" soil samples were selected from each sampling location for chemical analyses of: Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs) and Metals.
- No visible sheen or odours were recorded in the groundwater at the four (4) monitoring wells installed at the subject site. Groundwater samples (including QA/QC samples) were submitted for analysis of PHCs, VOCs, PAHs and Metals.
- As part of the QA/QC program for the investigation, QC samples in the form of field duplicate and trip blank samples were analysed. Field duplicate samples were collected in the field for metals and VOCs in soil and groundwater. One trip blank for VOCs was shipped with the batch of the groundwater samples submitted for analysis.
- The analytical test results were reviewed using the Table 8, Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for Residential/Parkland/Institutional/ Industrial/Commercial/Community Property Use (Table 8 Standards), as published in the "Soil, Ground Water and Sediment Standards for Use Under Part XV. 1 of the Environmental Protection Act" (EPA), April 15, 2011.
- The results of QA/QC control samples analyzed during this investigation are considered reliable.

A review of the analytical test results of soil and groundwater samples indicates the tested parameters at the test locations meet the Table 8 Standards.

Based on the findings of the Phase Two ESA, it is our opinion that the property is suitable for the proposed residential development. No further environmental investigation is recommended at this time.

SOIL ENGINEERS LTD.

LICENSED PROFESSIONAL ENGINEER
MA
M. AHMAD
100101424
Feb 4, 2021
PROVINCE OF ONTARIO

Munir Ahmad, M.Sc., P.Eng.

LICENSED PROFESSIONAL ENGINEER
A. SHAIKH
100106680
PROVINCE OF ONTARIO
Feb 4/2021

Arshad Shaikh, M.Sc., P.Eng.

LICENSED PROFESSIONAL ENGINEER
EGB
100106182
Feb 4/2021
PROVINCE OF ONTARIO

Eleni Girma Beyene, P.Eng., QP_{ESA}

MA/AS/EGB:ma

8.0 REFERENCES

MECP. "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, as amended by O. Reg. 511/09.

MECP. "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11.

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

Soil Engineers Ltd.
CONSULTING ENGINEERS
GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE
90 WEST BEAVER CREEK ROAD, SUITE #100, RICHMOND HILL, ONTARIO L4B 1E7 · TEL (416) 754-8515 · FAX (905) 881-8335

BARRIE	MISSISSAUGA	OSHAWA	NEWMARKET	GRAVENHURST	PETERBOROUGH	HAMILTON
TEL: (705) 721-7863	TEL: (905) 542-7605	TEL: (905) 440-2040	TEL: (905) 853-0647	TEL: (705) 684-4242	TEL: (905) 440-2040	TEL: (905) 777-7956
FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (905) 881-8335	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

TABLES

REFERENCE NO. 2007-E048

Table I – Monitoring Well Installation

Monitoring Well I.D.	Bottom of Monitoring Well (mbgs)	Screen Length (m)	Screen Interval (m)	Filter Pack (m)	Bentonite Plug (m)
BH/MW 201	8.2	3.0	5.2 – 8.2	4.6 – 8.2	0.0 – 4.6
BH/MW 202	9.8	3.0	6.8 – 9.8	6.1 – 9.8	0.0 – 6.1
BH/MW 206	6.0	3.0	3.0 – 6.0	2.4 – 6.0	0.0 – 2.4
BH/MW 207	6.0	3.0	3.0 – 6.0	2.4 – 6.0	0.0 – 2.4

Note: mbgs – meters below ground surface

Table II – Water Levels

Monitoring Well No.	Ground Elevation (masl)	Measured Groundwater Level		Field Observations		
		December 7, 2021				
		Depth (mbgs)	Elevation (m)	Odour	Colour	Sheen or Free Product
BH/MW 201	267.1	5.39	261.71	None	Silty	None
BH/MW 202	268.7	5.09	263.61	None	Silty	None
BH/MW 206	258.5	2.97	255.53	None	Silty	None
BH/MW 207	259.3	3.30	256.00	None	Silty	None

Note: mbgs = metres below ground surface
masl = metres above sea level

Soil Engineers Ltd.

Table III

Project No. 2007-E048

SOIL CHEMICAL ANALYSIS - Metals and Inorganic Parameters

Sample ID	RDL*	BH201/1B	BH202/2	DUP S3	BH203/1B	BH204/1B	DUP S2	Ontario Regulation 153/04 Table 8 RPIICC Standards**
Sample Date		2020-11-26	2020-11-25	2020-11-24	2020-11-26	2020-11-24	2020-11-24	
Laboratory ID		OHK252	OGZ307	OGZ318	OHK254	OGZ309	OGZ317	
Bore Hole No.		BH201	BH202	BH202	BH203	BH204	BH204	
Depth (mbgs)		0.2-0.8	0.8-1.5	0.8-1.5	0.25-0.8	0.2-0.8	0.2-0.8	
Antimony	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1.3
Arsenic	1	1.9	2	1.9	1.1	2.8	2.7	18
Barium	0.5	76	44	38	33	93	93	220
Beryllium	0.2	0.55	0.38	0.35	0.34	0.74	0.74	2.5
Boron (Hot Water Soluble)	0.05	-	0.06	-	0.25	0.2	-	1.5
Cadmium	0.1	0.1	<0.10	<0.10	<0.10	0.15	0.19	1.2
Chromium	1	19	15	12	14	25	24	70
Chromium VI	0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	0.66
Cobalt	0.1	6.7	5.1	4.5	4.5	8.8	8.8	22
Copper	0.5	13	11	11	4.1	17	17	92
Lead	1	8.3	5.3	5	6.1	9.4	9.5	120
Mercury	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.27
Molybdenum	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2
Nickel	0.5	14	11	10	7.3	19	19	82
Selenium	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5
Silver	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.5
Thallium	0.05	0.12	0.096	0.09	0.052	0.2	0.17	1
Vanadium	5	32	25	22	28	38	37	86
Zinc	5	33	25	23	27	43	45	290
pH (pH Units)	-	-	7.67	-	-	7.53	-	-
Conductivity (ms/cm)	-	-	0.14	-	-	-	-	0.7
Sodium Adsorption Ratio	-	-	0.28	-	-	-	-	5
Boron (Total)	5	10	5.7	<5.0	<5.0	9	7.9	36
Uranium	0.05	0.54	0.51	0.5	0.43	0.54	0.51	2.5

Analysis by Maxxam Analytics, all results in ppm (µg/g) unless otherwise stated

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

** Standards shown are for Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for residential/parkland/institutional/Industrial/Community/Commercial property use

SOIL CHEMICAL ANALYSIS - Metals and Inorganic Parameters

Sample ID	RDL*	BH205/3	BH206/1B	BH206/5	BH207/1B	S1	S2	Ontario Regulation 153/04 Table 8 RPIICC Standards**
Sample Date		2020-11-24	2020-11-24	2020-11-24	2020-11-24	2020-12-22	2020-12-22	
Laboratory ID		OGZ310	OGZ312	OGZ313	OGZ314	OMJ043	OMJ044	
Bore Hole No.		BH205	BH206	BH206	BH207	S1	S2	
Depth (mbgs)		1.5-2.3	0.15-0.8	3.0-3.8	0.2-0.8	0.2-0.8	0.2-0.8	
Antimony	0.2	<0.20	<0.20	-	<0.20	0.83	1.1	1.3
Arsenic	1	1.7	2.2	-	2.1	2	1.7	18
Barium	0.5	59	77	-	59	63	55	220
Beryllium	0.2	0.35	0.47	-	0.47	0.36	0.34	2.5
Boron (Hot Water Soluble)	0.05	0.11	0.12	-	-	-	-	1.5
Cadmium	0.1	<0.10	0.12	-	0.2	0.77	0.79	1.2
Chromium	1	14	17	-	17	18	15	70
Chromium VI	0.18	<0.18	<0.18	-	<0.18	-	-	0.66
Cobalt	0.1	5.1	7.2	-	6	5.3	4.8	22
Copper	0.5	11	14	-	14	51	28	92
Lead	1	8.1	9.3	-	23	180	110	120
Mercury	0.05	<0.050	<0.050	-	<0.050	0.051	<0.050	0.27
Molybdenum	0.5	<0.50	<0.50	-	<0.50	1	0.57	2
Nickel	0.5	11	15	-	12	12	10	82
Selenium	0.5	<0.50	<0.50	-	<0.50	<0.50	<0.50	1.5
Silver	0.2	<0.20	<0.20	-	<0.20	<0.20	<0.20	0.5
Thallium	0.05	0.092	0.13	-	0.11	0.091	0.083	1
Vanadium	5	23	27	-	28	23	25	86
Zinc	5	30	41	-	440	230	99	290
pH (pH Units)	-	7.74	-	7.74	-	-	-	-
Conductivity (ms/cm)	-	0.2	-	-	-	-	-	0.7
Sodium Adsorption Ratio	-	0.24	-	-	-	-	-	5
Boron (Total)	5	6.2	7.1	-	<5.0	6	5.3	36
Uranium	0.05	0.52	0.51	-	0.42	0.37	0.42	2.5

Analysis by Maxxam Analytics, all results in ppm (µg/g) unless otherwise stated

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

** Standards shown are for Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for residential/parkland/institutional/Industrial/Community/Commercial property use

Soil Engineers Ltd.

Table III

SOIL CHEMICAL ANALYSIS - Volatile Organic Compound (VOC) Parameters

Project No. 2007-E048

Sample ID	RDL*	BH201/2	BH202/4	BH205/6	DUP S1	BH206/5	BH207/5	Ontario Regulation 153/04 Table 8 RPIICC Standards**
Sample Date		26-Nov-2020	25-Nov-2020	24-Nov-2020	24-Nov-2020	24-Nov-2020	24-Nov-2020	
Laboratory ID		OHK253	OGZ308	OGZ311	OGZ316	OGZ313	OGZ315	
Bore Hole No.		BH201	BH202	BH205	BH205	BH206	BH207	
Depth (mbgs)		0.8-1.5	2.3-3.0	3.8-4.6	3.8-4.6	3.0-3.8	3.0-3.8	
Acetone	0.49	<0.50	<0.50	<0.50	<0.49	<0.50	<0.50	0.5
Benzene	0.006	<0.020	<0.020	<0.020	<0.0060	<0.020	<0.020	0.02
Bromodichloromethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Bromoform	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Bromomethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Carbon Tetrachloride	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Chlorobenzene	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Chloroform	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Dibromochloromethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,2-Dichlorobenzene	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,3-Dichlorobenzene	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,4-Dichlorobenzene	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,1-Dichloroethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,2-Dichloroethane	0.049	<0.050	<0.050	<0.050	<0.049	<0.050	<0.050	0.05
1,1-Dichloroethylene	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Cis-1,2-Dichloroethylene	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Trans-1,2-Dichloroethylene	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,2-Dichloropropane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Cis-1,3-Dichloropropylene	0.03	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	-
Trans-1,3-Dichloropropylene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	-
Ethylbenzene	0.01	<0.020	<0.020	<0.020	<0.010	<0.020	<0.020	0.05
Ethylene Dibromide	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Methyl Ethyl Ketone	0.4	<0.50	<0.50	<0.50	<0.40	<0.50	<0.50	0.5
Methylene Chloride	0.049	<0.050	<0.050	<0.050	<0.049	<0.050	<0.050	0.05
Methyl Isobutyl Ketone	0.4	<0.50	<0.50	<0.50	<0.40	<0.50	<0.50	0.5
Methyl-t-Butyl Ether	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Styrene	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,1,1,2-Tetrachloroethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,1,2,2-Tetrachloroethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Toluene	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.2
Tetrachloroethylene	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,1,1-Trichloroethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
1,1,2-Trichloroethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Trichloroethylene	0.01	<0.050	<0.050	<0.050	<0.010	<0.050	<0.050	0.05
Vinyl Chloride	0.019	<0.020	<0.020	<0.020	<0.019	<0.020	<0.020	0.02
m-Xylene & p-Xylene	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-
o-Xylene	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-
Total Xylenes	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.05
Dichlorodifluoromethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Hexane(n)	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.05
Trichlorofluoromethane	0.04	<0.050	<0.050	<0.050	<0.040	<0.050	<0.050	0.25
1,3-Dichloropropene (cis + trans)	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.05

Analysis by Maxxam Analytics, all results in ppm (µg/g) unless otherwise stated

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

** Standards shown are for Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for residential/parkland/institutional/Industrial/Community/Commercial property use

Soil Engineers Ltd.

SOIL CHEMICAL ANALYSIS - Petroleum Hydrocarbon (PHC) Parameters

Table III

Project No. 2007-E048

Sample ID	RDL*	BH201/2	BH203/1B	BH202/4	BH205/6	BH206/5	BH207/5	Ontario Regulation 153/04 Table 8 RPIICC Standards**
Sample Date		26-Nov-2020	26-Nov-2020	25-Nov-2020	24-Nov-2020	24-Nov-2020	24-Nov-2020	
Laboratory ID		OHK253	OHK254	OGZ308	OGZ311	OGZ313	OGZ315	
Bore Hole No.				BH202	BH205	BH206	BH207	
Depth (mbgs)				2.3-3.0	3.8-4.6	3.0-3.8	3.0-3.8	
F1 (C6-C10)	10	<10	<10	<10	<10	<10	<10	25
F1 (C6-C10) - BTEX	10	<10	<10	<10	<10	<10	<10	25
F2 (C10-C16)	10	<10	<10	<10	<10	<10	<10	10
F3 (C16-C34)	50	<50	<50	<50	<50	<50	<50	240
F4 (C34-C50)	50	<50	<50	<50	<50	<50	<50	120

Analysis by Maxxam Analytics, all results in ppm (µg/g) unless otherwise stated

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

** Standards shown are for Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for residential/parkland/institutional/Industrial/Community/Commercial property use

Soil Engineers Ltd.

SOIL CHEMICAL ANALYSIS - Polycyclic Aromatic Hydrocarbons (PAHs)

Table III

Project No. 2007-E048

Sample ID	RDL*	BH201/2	BH202/4	BH205/6	BH206/5	BH207/5	Ontario Regulation 153/04 Table 8 RPIICC Standards**
Sample Date		26-Nov-2020	25-Nov-2020	24-Nov-2020	24-Nov-2020	24-Nov-2020	
Laboratory ID		OHK253	OGZ308	OGZ311	OGZ313	OGZ315	
Bore Hole No.		BH201	BH202	BH205	BH206	BH207	
Depth (mbgs)		0.8-1.5	2.3-3.0	3.8-4.6	3.0-3.8	3.0-3.8	
Acenaphthene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.072
Acenaphthylene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.093
Anthracene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.22
Benzo(a)anthracene	0.005	<0.0050	<0.0050	0.0073	<0.0050	<0.0050	0.36
Benzo(a)pyrene	0.005	<0.0050	<0.0050	0.007	<0.0050	<0.0050	0.3
Benzo(b/j)fluoranthene	0.005	<0.0050	<0.0050	0.0093	<0.0050	<0.0050	0.47
Benzo(ghi)perylene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.68
Benzo(k)fluoranthene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.48
Chrysene	0.005	<0.0050	<0.0050	0.0085	<0.0050	<0.0050	2.8
Dibenzo(a,h)anthracene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.1
Fluoranthene	0.005	<0.0050	0.0054	0.018	<0.0050	<0.0050	0.69
Fluorene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.19
Indeno(1,2,3-cd)pyrene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.23
1-Methylnaphthalene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.59
2-Methylnaphthalene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.59
Naphthalene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.09
Phenanthrene	0.005	<0.0050	<0.0050	0.011	<0.0050	<0.0050	0.69
Pyrene	0.005	<0.0050	<0.0050	0.016	<0.0050	<0.0050	1
Methylnaphthalene, 2-(1-)	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	0.59

Analysis by Maxxam Analytics, all results in ppm (µg/g) unless otherwise stated

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

** Standards shown are for Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for residential/parkland/institutional/Industrial/Community/Commercial property use

Soil Engineers Ltd

Table IV

GROUND WATER CHEMICAL ANALYSIS - Metals and Inorganic Parameters

Project No. 2007-E048

Sample ID	RDL*	MW201	MW202	MW206	MW207	DUP W1	Ontario Regulation 153/04 Table 8 Standards**
Sample Date		7-Dec-2020	7-Dec-2020	7-Dec-2020	7-Dec-2020	7-Dec-2020	
Laboratory ID		OJC588	OJC589	OJC590	OJC591	OJC592	
Bore Hole No.		BH201	BH202	BH206	BH207	BH207	
Depth (mbgs)		-	-	-	-	-	
Antimony	0.5	<0.50	<0.50	<0.50	0.91	1	6
Arsenic	1	<1.0	<1.0	<1.0	1.4	1.5	25
Barium	2	610	190	110	150	160	1000
Beryllium	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	4
Boron	10	19	120	22	180	180	5000
Cadmium	0.09	<0.090	<0.090	<0.090	<0.090	<0.090	2.1
Chromium	5	<5.0	<5.0	<5.0	<5.0	<5.0	50
Chromium VI	0.5	<0.50	<0.50	<0.50	<0.50	-	25
Cobalt	0.5	1.7	3.5	<0.50	0.74	0.74	3.8
Copper	0.9	3.4	4	2.3	1.2	3.1	69
Lead	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	10
Mercury	0.1	<0.10	<0.10	<0.10	<0.10	-	0.29
Molybdenum	0.5	1.2	12	3.1	13	13	70
Nickel	1	5.3	4.1	<1.0	2.1	2.2	100
Selenium	2	<2.0	<2.0	<2.0	<2.0	<2.0	10
Silver	0.09	<0.090	<0.090	<0.090	<0.090	<0.090	1.2
Thallium	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	2
Vanadium	0.5	1.2	0.7	0.97	0.8	0.8	6.2
Zinc	5	<5.0	5.6	<5.0	5.7	6.5	890
Uranium	0.1	1.9	2.9	1.4	12	12	20

Analysis by Maxxam Analytics, all results in ppm (µg/L) unless otherwise stated

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

** Standards shown are for Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for All Types of Property Use

Soil Engineers Ltd

Table IV

GROUND WATER CHEMICAL ANALYSIS - Volatile Organic Compound (VOC) Parameters

Project No. 2007-E048

Sample ID	RDL*	MW201	MW202	MW206	MW207	DUP W2	TRIP BLANK	Ontario Regulation 153/04 Table 8 Standards**
Sample Date		7-Dec-2020	7-Dec-2020	7-Dec-2020	7-Dec-2020	7-Dec-2020	7-Dec-2020	
Laboratory ID		OJC588	OJC589	OJC590	OJC591	OJC593	OJC594	
Bore Hole No.		BH201	BH202	BH206	BH207	BH206	-	
Depth (mbgs)		-	-	-	-	-	-	
Acetone	10	<10	<10	<10	<10	<10	<10	2700
Benzene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	5
Bromodichloromethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	16
Bromoform	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	25
Bromomethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.89
Carbon Tetrachloride	0.19	<0.20	<0.20	<0.20	<0.20	<0.19	<0.19	0.79
Chlorobenzene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	30
Chloroform	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	2.4
Dibromochloromethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	25
1,2-Dichlorobenzene	0.4	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	3
1,3-Dichlorobenzene	0.4	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	59
1,4-Dichlorobenzene	0.4	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	1
1,1-Dichloroethane	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	5
1,2-Dichloroethane	0.49	<0.50	<0.50	<0.50	<0.50	<0.49	<0.49	1.6
1,1-Dichloroethylene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1.6
Cis-1,2-Dichloroethylene	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6
Trans-1,2-Dichloroethylene	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6
1,2-Dichloropropane	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	5
Cis-1,3-Dichloropropylene	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-
Trans-1,3-Dichloropropylene	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	-
Ethylbenzene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	2.4
Ethylene Dibromide	0.19	<0.20	<0.20	<0.20	<0.20	<0.19	<0.19	0.2
Methyl Ethyl Ketone	10	<10	<10	<10	<10	<10	<10	1800
Methylene Chloride	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	50
Methyl Isobutyl Ketone	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	640
Methyl-t-Butyl Ether	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	15
Styrene	0.4	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	5.4
1,1,1,2-Tetrachloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1
1,1,2,2-Tetrachloroethane	0.4	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	1
Toluene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	22
Tetrachloroethylene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1.6
1,1,1-Trichloroethane	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	200
1,1,2-Trichloroethane	0.4	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	4.7
Trichloroethylene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1.6
Vinyl Chloride	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.5
m-Xylene & p-Xylene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
o-Xylene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
Total Xylenes	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	300
Dichlorodifluoromethane	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	590
Hexane(n)	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	51
Trichlorofluoromethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	150
1,3-Dichloropropene (cis + trans)	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5

Analysis by Maxxam Analytics, all results in ppm (µg/L) unless otherwise stated

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

** Standards shown are for Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for All Types of Property Use

Soil Engineers Ltd

GROUND WATER CHEMICAL ANALYSIS - Petroleum Hydrocarbon (PHC) Parameters

Table IV

Project No. 2007-E048

Sample ID	RDL*	MW201	MW202	MW206	MW207	Ontario Regulation 153/04 Table 8 Standards**
Sample Date		7-Dec-2020	7-Dec-2020	7-Dec-2020	7-Dec-2020	
Laboratory ID		OJC588	OJC589	OJC590	OJC591	
Bore Hole No.						
Depth (mbgs)						
F1 (C6-C10)	25	<25	<25	<25	<25	420
F1 (C6-C10) - BTEX	25	<25	<25	<25	<25	420
F2 (C10-C16)	100	<100	<100	<100	<100	150
F3 (C16-C34)	200	<200	<200	<200	<200	500
F4 (C34-C50)	200	<200	<200	<200	<200	500

Analysis by Maxxam Analytics, all results in ppm (µg/L) unless otherwise stated

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

** Standards shown are for Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for All Types of Property Use

Soil Engineers Ltd

GROUND WATER CHEMICAL ANALYSIS - Petroleum Hydrocarbon (PHC) Parameters

Table IV

Project No. 2007-E048

Sample ID	RDL*	MW201	MW202	MW206	MW207	Ontario Regulation 153/04 Table 8 Standards**
Sample Date		7-Dec-2020	7-Dec-2020	7-Dec-2020	7-Dec-2020	
Laboratory ID		OJC588	OJC589	OJC590	OJC591	
Bore Hole No.		BH201	BH202	BH206	BH207	
Depth (mbgs)		-	-	-	-	
Acenaphthene	0.05	<0.050	<0.050	<0.050	<0.050	4.1
Acenaphthylene	0.05	<0.050	<0.050	<0.050	<0.050	1
Anthracene	0.05	<0.050	<0.050	<0.050	<0.050	1
Benzo(a)anthracene	0.05	<0.050	<0.050	<0.050	<0.050	1
Benzo(a)pyrene	0.009	<0.0090	<0.0090	<0.0090	<0.0090	0.01
Benzo(b/j)fluoranthene	0.05	<0.050	<0.050	<0.050	<0.050	0.1
Benzo(ghi)perylene	0.05	<0.050	<0.050	<0.050	<0.050	0.2
Benzo(k)fluoranthene	0.05	<0.050	<0.050	<0.050	<0.050	0.1
Chrysene	0.05	<0.050	<0.050	<0.050	<0.050	0.1
Dibenzo(a,h)anthracene	0.05	<0.050	<0.050	<0.050	<0.050	0.2
Fluoranthene	0.05	<0.050	<0.050	<0.050	<0.050	0.41
Fluorene	0.05	<0.050	<0.050	<0.050	<0.050	120
Indeno(1,2,3-cd)pyrene	0.05	<0.050	<0.050	<0.050	<0.050	0.2
1-Methylnaphthalene	0.05	<0.050	<0.050	<0.050	<0.050	3.2
2-Methylnaphthalene	0.05	<0.050	<0.050	<0.050	<0.050	3.2
Naphthalene	0.05	<0.050	<0.050	<0.050	<0.050	11
Phenanthrene	0.03	<0.030	<0.030	0.04	<0.030	1
Pyrene	0.05	<0.050	<0.050	<0.050	<0.050	4.1
Methylnaphthalene, 2-(1-)	0.071	<0.071	<0.071	<0.071	<0.071	3.2

Analysis by Maxxam Analytics, all results in ppm (µg/L) unless otherwise stated

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

** Standards shown are for Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Groundwater Condition for All Types of Property Use

Summary of Metals and Inorganics

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Antimony	ug/g	1.1	S2	0.2-0.8
Arsenic	ug/g	2.8	BH204/1B	0.2-0.8
Barium	ug/g	93	BH204/1B, DUP S2	0.2-0.8
Beryllium	ug/g	0.74	BH204/1B, DUP S2	0.2-0.8
Boron (Hot Water Soluble)	ug/g	0.25	BH203/1B	0.25-0.8
Cadmium	ug/g	0.79	S2	0.2-0.8
Chromium	ug/g	25	BH204/1B	0.2-0.8
Chromium VI	ug/g	<0.18	-	-
Cobalt	ug/g	8.8	BH204/1B, DUP S2	0.2-0.8
Copper	ug/g	51	S1	0.2-0.8
Lead	ug/g	180	S1	0.2-0.8
Mercury	ug/g	0.051	S1	0.2-0.8
Molybdenum	ug/g	1	S1	0.2-0.8
Nickel	ug/g	19	BH204/1B, DUP S2	0.2-0.8
Selenium	ug/g	<0.5	-	-
Silver	ug/g	<0.2	-	-
Thallium	ug/g	0.2	BH204/1B	0.2-0.8
Vanadium	ug/g	38	BH204/1B	0.2-0.8
Zinc	ug/g	440	BH207/1B	0.2-0.8
pH (pH Units)	N/A	7.74	BH205/3, BH206/5	1.5-2.3
Conductivity (ms/cm)	mS/cm	0.2	BH205/3	1.5-2.3
Sodium Adsorption Ratio	-	0.28	BH202/2	0.8-1.5
Boron (Total)	ug/g	10	BH201/1B	0.2-0.8
Uranium	ug/g	0.54	BH201/1B/ BH204/1B	0.2-0.8

Summary of VOCs

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Acetone	µg/g	<0.49	-	-
Benzene	µg/g	<0.006	-	-
Bromodichloromethane	µg/g	<0.04	-	-
Bromoform	µg/g	<0.04	-	-
Bromomethane	µg/g	<0.04	-	-
Carbon Tetrachloride	µg/g	<0.04	-	-

Chlorobenzene	µg/g	<0.04	-	-
Chloroform	µg/g	<0.04	-	-
Dibromochloromethane	µg/g	<0.04	-	-
1,2-Dichlorobenzene	µg/g	<0.04	-	-
1,3-Dichlorobenzene	µg/g	<0.04	-	-
1,4-Dichlorobenzene	µg/g	<0.04	-	-
1,1-Dichloroethane	µg/g	<0.04	-	-
1,2-Dichloroethane	µg/g	<0.049	-	-
1,1-Dichloroethylene	µg/g	<0.04	-	-
Cis-1,2-Dichloroethylene	µg/g	<0.04	-	-
Trans-1,2-Dichloroethylene	µg/g	<0.04	-	-
1,2-Dichloropropane	µg/g	<0.04	-	-
Cis-1,3-Dichloropropylene	µg/g	<0.03	-	-
Trans-1,3-Dichloropropylene	µg/g	<0.04	-	-
Ethylbenzene	µg/g	<0.01	-	-
Ethylene Dibromide	µg/g	<0.04	-	-
Methyl Ethyl Ketone	µg/g	<0.4	-	-
Methylene Chloride	µg/g	<0.049	-	-
Methyl Isobutyl Ketone	µg/g	<0.4	-	-
Methyl-t-Butyl Ether	µg/g	<0.04	-	-
Styrene	µg/g	<0.04	-	-
1,1,1,2-Tetrachloroethane	µg/g	<0.04	-	-
1,1,2,2-Tetrachloroethane	µg/g	<0.04	-	-
Toluene	µg/g	<0.02	-	-
Tetrachloroethylene	µg/g	<0.04	-	-
1,1,1-Trichloroethane	µg/g	<0.04	-	-
1,1,2-Trichloroethane	µg/g	<0.04	-	-
Trichloroethylene	µg/g	<0.01	-	-
Vinyl Chloride	µg/g	<0.019	-	-
m-Xylene & p-Xylene	µg/g	<0.02	-	-
o-Xylene	µg/g	<0.02	-	-
Total Xylenes	µg/g	<0.02	-	-
Dichlorodifluoromethane	µg/g	<0.04	-	-
Hexane(n)	µg/g	<0.04	-	-
Trichlorofluoromethane	µg/g	<0.04	-	-
1,3-Dichloropropene (cis + trans)	µg/g	<0.05	-	-

Summary of CCME F1-F4

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
F1 (C6-C10)	µg/g	<10	-	-
F1 (C6-C10) - BTEX	µg/g	<10	-	-
F2 (C10-C16)	µg/g	<10	-	-
F3 (C16-C34)	µg/g	<50	-	-
F4 (C34-C50)	µg/g	<50	-	-

Summary of PAHs

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Acenaphthene	µg/g	<0.005	-	-
Acenaphthylene	µg/g	<0.005	-	-
Anthracene	µg/g	<0.005	-	-
Benzo(a)anthracene	µg/g	0.0073	BH205/6	3.8-4.6
Benzo(a)pyrene	µg/g	0.007	BH205/6	3.8-4.6
Benzo(b/j)fluoranthene	µg/g	0.0093	BH205/6	3.8-4.6
Benzo(ghi)perylene	µg/g	<0.005	-	-
Benzo(k)fluoranthene	µg/g	<0.005	-	-
Chrysene	µg/g	0.0085	BH205/6	3.8-4.6
Dibenzo(a,h)anthracene	µg/g	<0.005	-	-
Fluoranthene	µg/g	0.018	BH205/6	3.8-4.6
Fluorene	µg/g	<0.005	-	-
Indeno(1,2,3-cd)pyrene	µg/g	<0.005	-	-
1-Methylnaphthalene	µg/g	<0.005	-	-
2-Methylnaphthalene	µg/g	<0.005	-	-
Naphthalene	µg/g	<0.005	-	-
Phenanthrene	µg/g	0.011	BH205/6	3.8-4.6
Pyrene	µg/g	0.016	BH205/6	3.8-4.6
Methylnaphthalene, 2-(1-)	µg/g	<0.0071	-	-

Reference No. 2007-E048

Table VI – Maximum Concentration (Groundwater)

Summary of Metals and Inorganics

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Sampling Depth (m)
Antimony	µg/L	1	DUP W1	BH207	-
Arsenic	µg/L	1.5	DUP W1	BH207	-
Barium	µg/L	610	MW201	BH201	-
Beryllium	µg/L	<0.4	-	-	-
Boron	µg/L	180	MW207	BH207	-
Cadmium	µg/L	<0.09	-	-	-
Chromium	µg/L	<5	-	-	-
Chromium VI	µg/L	<0.5	-	-	-
Cobalt	µg/L	3.5	MW202	BH202	-
Copper	µg/L	4	MW202	BH202	-
Lead	µg/L	<0.5	-	-	-
Mercury	µg/L	<0.1	-	-	-
Molybdenum	µg/L	13	MW207	BH207	-
Nickel	µg/L	5.3	MW201	BH201	-
Selenium	µg/L	<2	-	-	-
Silver	µg/L	<0.09	-	-	-
Thallium	µg/L	<0.05	-	-	-
Vanadium	µg/L	1.2	MW201	BH201	-
Zinc	µg/L	6.5	DUP W1	BH207	-
Uranium	µg/L	12	MW207	BH207	-

Summary of VOCs

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Sampling Depth (m)
Acetone	µg/L	<10	-	-	-
Benzene	µg/L	<0.2	-	-	-
Bromodichloromethane	µg/L	<0.5	-	-	-
Bromoform	µg/L	<1	-	-	-
Bromomethane	µg/L	<0.5	-	-	-
Carbon Tetrachloride	µg/L	<0.19	-	-	-
Chlorobenzene	µg/L	<0.2	-	-	-
Chloroform	µg/L	<0.2	-	-	-
Dibromochloromethane	µg/L	<0.5	-	-	-
1,2-Dichlorobenzene	µg/L	<0.4	-	-	-

1,3-Dichlorobenzene	µg/L	<0.4	-	-	-
1,4-Dichlorobenzene	µg/L	<0.4	-	-	-
1,1-Dichloroethane	µg/L	<0.2	-	-	-
1,2-Dichloroethane	µg/L	<0.49	-	-	-
1,1-Dichloroethylene	µg/L	<0.2	-	-	-
Cis-1,2-Dichloroethylene	µg/L	<0.5	-	-	-
Trans-1,2-Dichloroethylene	µg/L	<0.5	-	-	-
1,2-Dichloropropane	µg/L	<0.2	-	-	-
Cis-1,3-Dichloropropylene	µg/L	<0.3	-	-	-
Trans-1,3-Dichloropropylene	µg/L	<0.4	-	-	-
Ethylbenzene	µg/L	<0.2	-	-	-
Ethylene Dibromide	µg/L	<0.19	-	-	-
Methyl Ethyl Ketone	µg/L	<10	-	-	-
Methylene Chloride	µg/L	<2	-	-	-
Methyl Isobutyl Ketone	µg/L	<5	-	-	-
Methyl-t-Butyl Ether	µg/L	<0.5	-	-	-
Styrene	µg/L	<0.4	-	-	-
1,1,1,2-Tetrachloroethane	µg/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	<0.4	-	-	-
Toluene	µg/L	<0.2	-	-	-
Tetrachloroethylene	µg/L	<0.2	-	-	-
1,1,1-Trichloroethane	µg/L	<0.2	-	-	-
1,1,2-Trichloroethane	µg/L	<0.4	-	-	-
Trichloroethylene	µg/L	<0.2	-	-	-
Vinyl Chloride	µg/L	<0.2	-	-	-
m-Xylene & p-Xylene	µg/L	<0.2	-	-	-
o-Xylene	µg/L	<0.2	-	-	-
Total Xylenes	µg/L	<0.2	-	-	-
Dichlorodifluoromethane	µg/L	<1	-	-	-
Hexane(n)	µg/L	<1	-	-	-
Trichlorofluoromethane	µg/L	<0.5	-	-	-
1,3-Dichloropropene (cis + trans)	µg/L	<0.5	-	-	-

Summary of CCME F1-F4

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Sampling Depth (m)
F1 (C6-C10)	µg/L	<25	-	-	-
F1 (C6-C10) - BTEX	µg/L	<25	-	-	-
F2 (C10-C16)	µg/L	<100	-	-	-
F3 (C16-C34)	µg/L	<200	-	-	-
F4 (C34-C50)	µg/L	<200	-	-	-

Summary of PAH

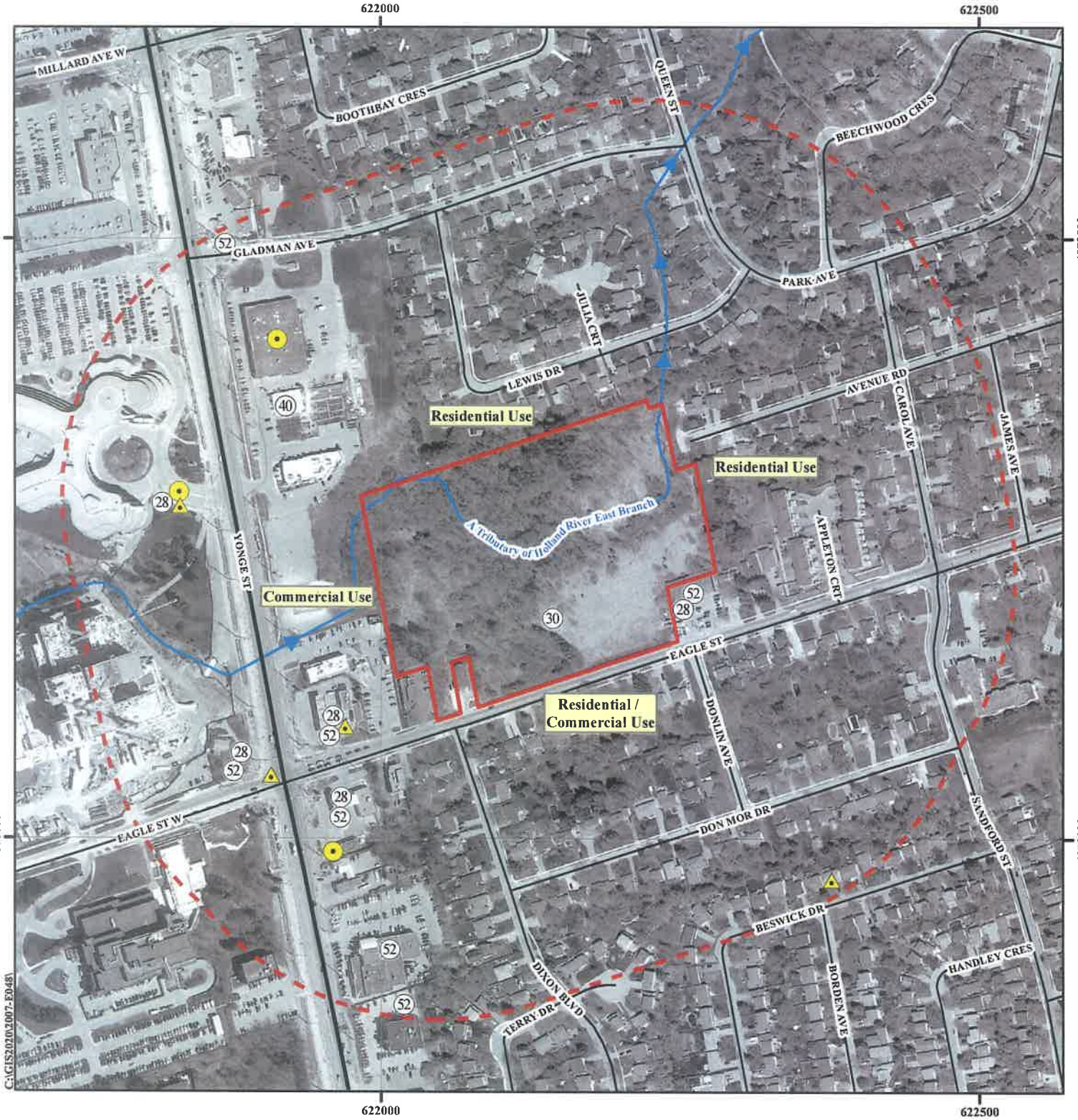
Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Sampling Depth (m)
Acenaphthene	µg/L	<0.05	-	-	-
Acenaphthylene	µg/L	<0.05	-	-	-
Anthracene	µg/L	<0.05	-	-	-
Benzo(a)anthracene	µg/L	<0.05	-	-	-
Benzo(a)pyrene	µg/L	<0.009	-	-	-
Benzo(b/j)fluoranthene	µg/L	<0.05	-	-	-
Benzo(ghi)perylene	µg/L	<0.05	-	-	-
Benzo(k)fluoranthene	µg/L	<0.05	-	-	-
Chrysene	µg/L	<0.05	-	-	-
Dibenzo(a,h)anthracene	µg/L	<0.05	-	-	-
Fluoranthene	µg/L	<0.05	-	-	-
Fluorene	µg/L	<0.05	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	<0.05	-	-	-
1-Methylnaphthalene	µg/L	<0.05	-	-	-
2-Methylnaphthalene	µg/L	<0.05	-	-	-
Naphthalene	µg/L	<0.05	-	-	-
Phenanthrene	µg/L	0.04	MW206	BH206	-
Pyrene	µg/L	<0.05	-	-	-
Methylnaphthalene, 2-(1-)	µg/L	<0.071	-	-	-

Soil Engineers Ltd.
CONSULTING ENGINEERS
GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE
90 WEST BEAVER CREEK ROAD, SUITE #100, RICHMOND HILL, ONTARIO L4B 1E7 · TEL (416) 754-8515 · FAX (905) 881-8335

BARRIE	MISSISSAUGA	OSHAWA	NEWMARKET	GRAVENHURST	PETERBOROUGH	HAMILTON
TEL: (705) 721-7863	TEL: (905) 542-7605	TEL: (905) 440-2040	TEL: (905) 853-0647	TEL: (705) 684-4242	TEL: (905) 440-2040	TEL: (905) 777-7956
FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (905) 881-8335	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

DRAWINGS

REFERENCE NO. 2007-E048



N

Subject Site

Phase One Study

Waterbody

Major Road

Local Road

Potentially Contaminating Activities

(28) Gasoline and Associated Products Storage in Fixed Tanks

(30) Importation of Fill Material of Unknown Quality

(40) Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage, and Applications

(52) Storage, Maintenance, Fuelling and Repair of Equipment, Vehicles, and Material used to Maintain Transportation Systems

Additional Potential Sources of

Other - Waste Generator

Other - Spill

Soil Engineers Ltd.

Title: Site Location Plan

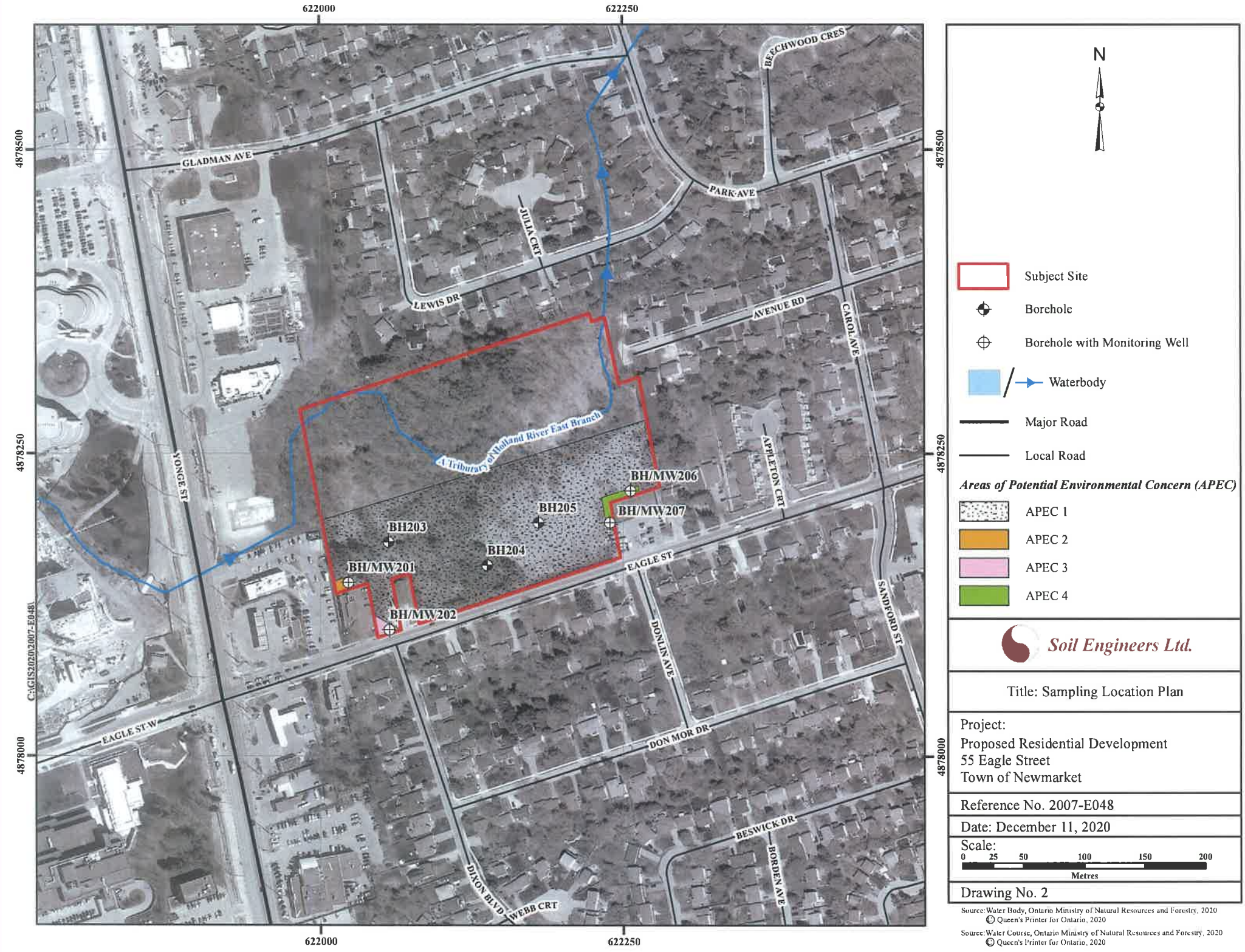
Project:
Proposed Residential Development
55 Eagle Street
Town of Newmarket

Reference No. 2007-E048

Date: December 11, 2020

Scale:
0 25 50 100 150 200 250
Metres

Drawing No. 1



Soil Engineers Ltd.

Title: Sampling Location Plan

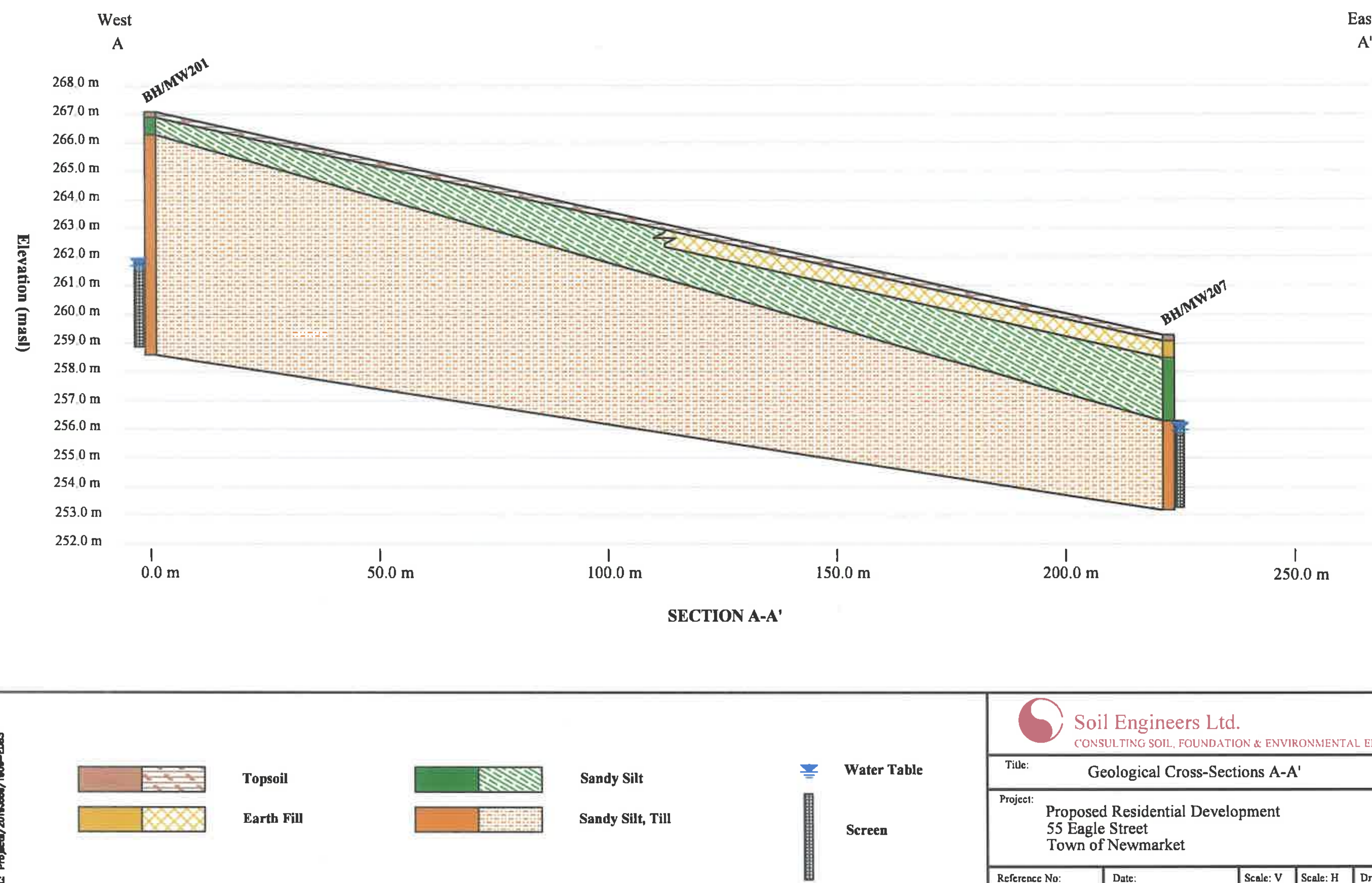
Project:
Proposed Residential Development
55 Eagle Street
Town of Newmarket

Reference No. 2007-E048

Date: December 11, 2020

Scale:

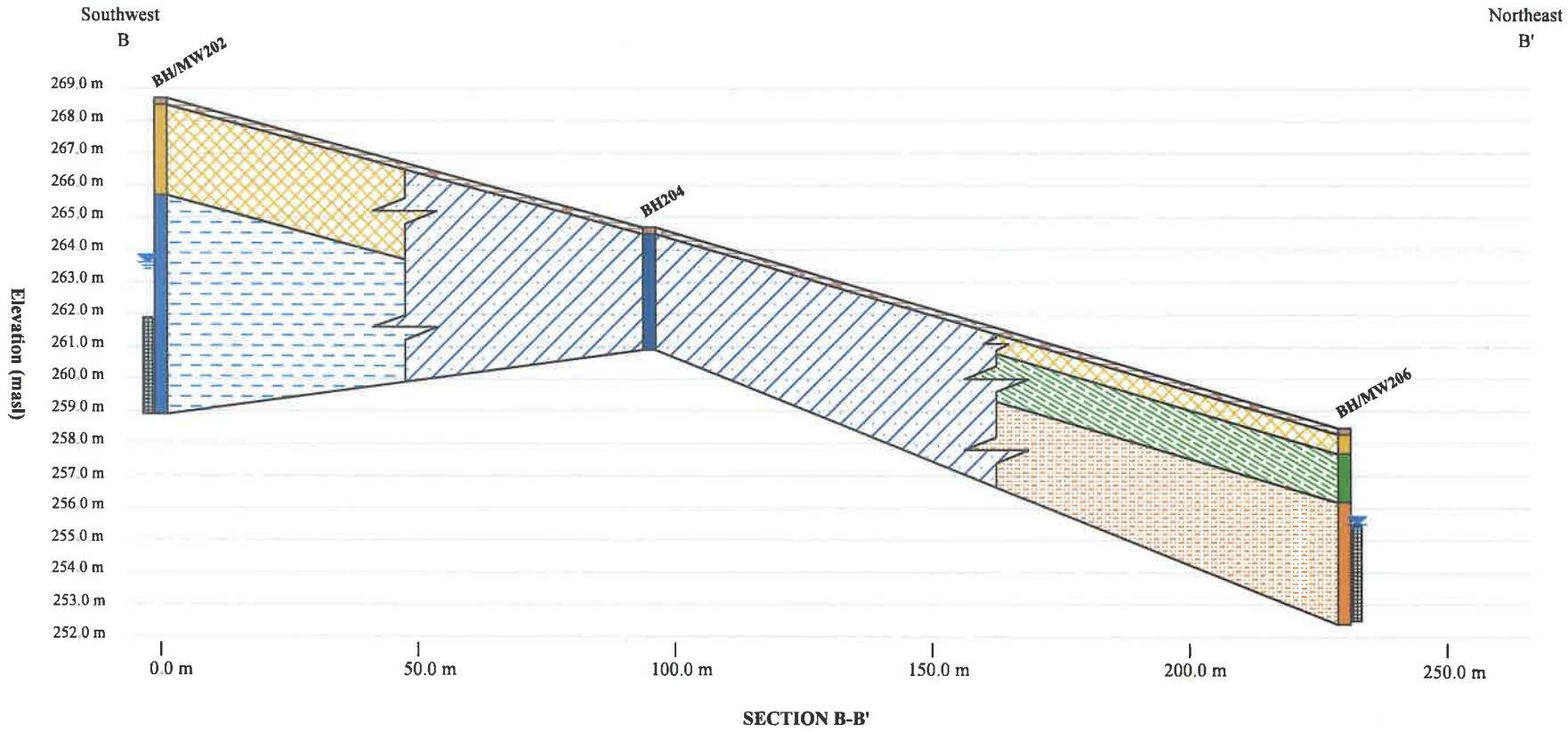
Drawing No. 2



C: Projects/2019Jobs/1908-E083

Soil Engineers Ltd.
CONSULTING SOIL, FOUNDATION & ENVIRONMENTAL ENGINEERS

Title: Geological Cross-Sections A-A'				
Project: Proposed Residential Development 55 Eagle Street Town of Newmarket				
Reference No: 2007-E048	Date: January 14, 2021	Scale: V 1:200	Scale: H 1:1250	Drawing No. 4A



SECTION B-B'

Topsoil
Earth Fill
Silty Sand
Silty Sand, Till
Sandy Silt
Sandy Silt, Till
Water Table
Screen

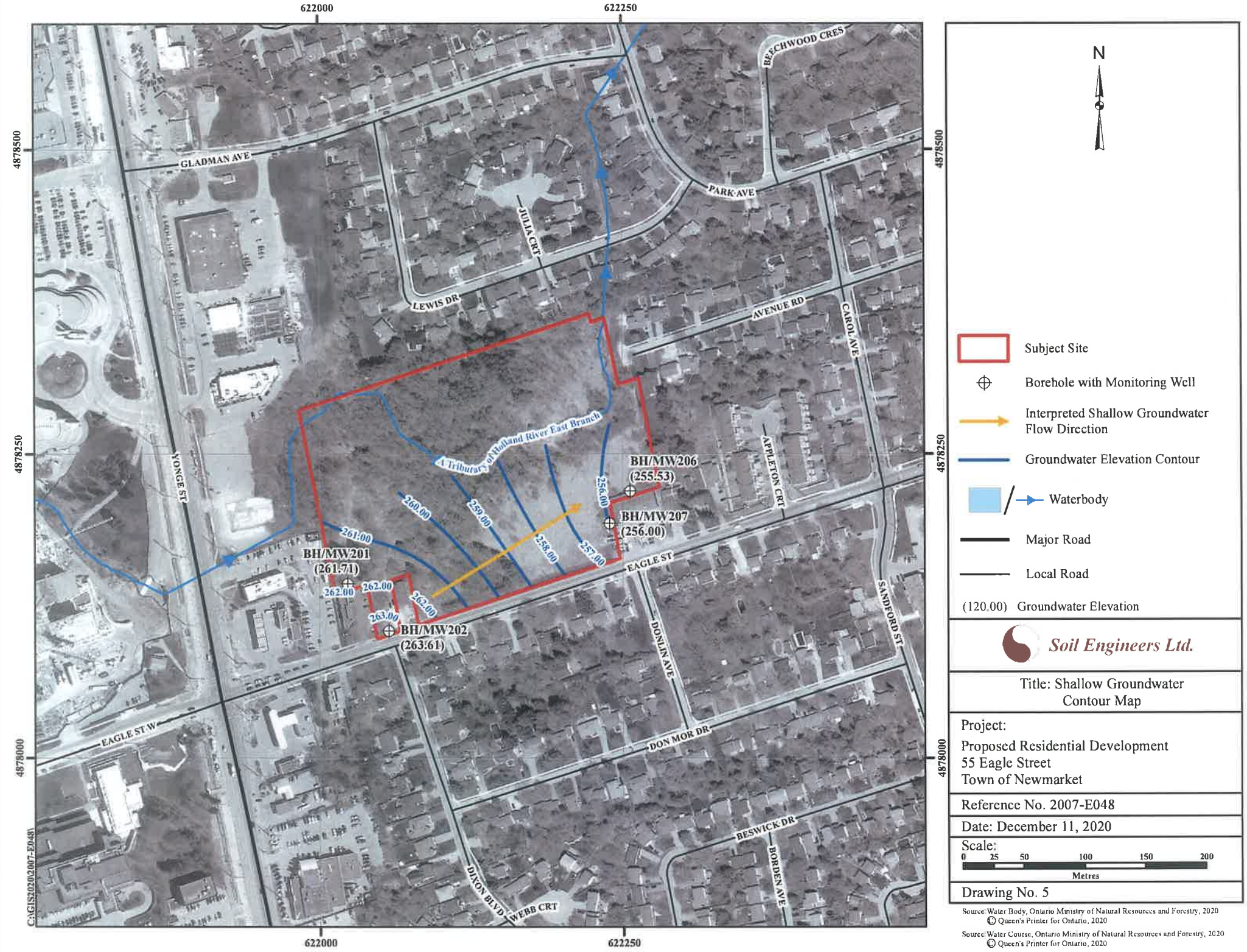
C: Projects/2019/Jobs/1900-E053

Soil Engineers Ltd.
CONSULTING SOIL, FOUNDATION & ENVIRONMENTAL ENGINEERS

Title: Geological Cross-Sections B-B'

Project:
Proposed Residential Development
55 Eagle Street
Town of Newmarket

Reference No:	Date:	Scale: V	Scale: H	Drawing No.
2007-E048	January 14, 2021	1:200	1:1250	4B



Soil Engineers Ltd.

Title: Shallow Groundwater Contour Map

Project:
Proposed Residential Development
55 Eagle Street
Town of Newmarket

Reference No. 2007-E048

Date: December 11, 2020

Scale:

Drawing No. 5

C:\GIS\2020\2007-E048\

Soil Engineers Ltd.
CONSULTING ENGINEERS
GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE
90 WEST BEAVER CREEK ROAD, SUITE #100, RICHMOND HILL, ONTARIO L4B 1E7 · TEL (416) 754-8515 · FAX (905) 881-8335

BARRIE	MISSISSAUGA	OSHAWA	NEWMARKET	GRAVENHURST	PETERBOROUGH	HAMILTON
TEL: (705) 721-7863	TEL: (905) 542-7605	TEL: (905) 440-2040	TEL: (905) 853-0647	TEL: (705) 684-4242	TEL: (905) 440-2040	TEL: (905) 777-7956
FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (905) 881-8335	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

APPENDIX 'A'

SAMPLING AND ANALYSIS PLAN

REFERENCE NO. 2007-E048

This Sampling and Analysis Plan is prepared for the Phase Two Environmental Site Assessment (Phase Two ESA) as defined by Ontario Regulation (O. Reg.) 153/04, as amended. The subject property is located on the north side of Eagle Street, approximately 110 m east of Yonge Street in the Town of Newmarket. (hereinafter referred to as the 'subject site').

The Sampling and Analysis Plan is based on the findings of our Phase One Environmental Site Assessment (Phase One ESA, 2007-E048 dated September 18, 2020) and additional findings in Phase Two ESA.

1) OBJECTIVE

The objective of the Phase Two ESA was to determine the soil and groundwater quality at the subject site, as related to the following Areas of Potential Environmental Concerns (APECs) at the subject site:

APEC 1: Potential soil impact due to presence of fill material of unknown quality present in the south portion of the subject site.

APEC 2: Potential soil and groundwater impact due to presence of a gasoline service station with an auto repair facility and gasoline spill at neighbouring property located west of the subject site.

APEC 3: Potential soil and groundwater impact due to gasoline service station at neighbouring property located southwest of the subject site.

APEC 4: Potential soil and groundwater impact due to presence of auto repair facility and former UST at the adjacent property to the southeast of the subject site.

2) SCOPE OF WORK

The scope of work for the initial investigation of the Phase Two ESA includes:

- Locate the underground and overhead utilities.
- Conduct a total of seven (7) boreholes ranging to depths of up to approximately 3 to 10 metres below ground surface (mbgs)

- Collect representative soil samples from the boreholes.
- Undertake field examination of the retrieved soil samples for visual and olfactory evidence of potential contamination.
- Undertake soil vapour measurements for the retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode.
- Install monitoring wells in four (4) boreholes for groundwater sampling and testing and/ or water level monitoring.
- Conduct groundwater monitoring and collect groundwater samples for chemical testing.
- Carry out analytical testing program on selected soil samples and groundwater samples including Quality Control/ Quality Assurance (A/QC) samples for one or more of the following parameters: Metals, Polycyclic Aromatic Hydrocarbons (PAHs), Petroleum Hydrocarbons (PHCs), and Volatile Organic Compounds (VOCs).
- Review analytical testing results of submitted soil and groundwater samples using applicable Site Condition Standards.
- Prepare a Phase Two ESA report containing the findings of the investigation.

3) RATIONALE FOR BOREHOLE / MONITORING WELL LOCATIONS

The rationale for the selection of the borehole/monitoring well locations is presented in the table below:

Area of potential environmental concern (APEC)	**Borehole / Monitoring Well Location**
APEC 1 (Potential soil impact due to presence of fill material of unknown quality present in the south portion of the subject site)	BH201 to BH207
APEC 2 (Potential soil and groundwater impact due to presence of a gasoline service station with an auto repair facility and gasoline spill at neighbouring property located west of the subject site)	BH/MW201
APEC 3 (Potential soil and groundwater impact due to gasoline service station at neighbouring property located southwest of the subject site)	BH/MW202

Area of potential environmental concern (APEC)	Borehole / Monitoring Well Location
APEC 4 (Potential soil and groundwater impact due to presence of auto repair facility and former UST at the adjacent property to the southeast of the subject site)	BH/MW206, BH/MW207

The proposed sampling locations for the Phase Two ESA are shown in Drawing No. 2.

4) SOIL AND GROIUNDWATER SAMPLES (INCLUDING QA/QC SAMPLES) ANALYTICAL SCHEDULE

A summary of soil and groundwater samples (including QA/QC samples) to be submitted is presented in the table below:

Soil Sample (i/c QA/QC Samples)

Test Pit/ Borehole	Metals	PAHs	PHC	VOC
BH201	1	1	1	1
BH202	1	1	1	1
BH203	1		1	
BH204	1			
BH205	1	1	1	1
BH206	1	1	1	1
BH207	1	1	1	1
Duplicate Soil Sample	2			1

Groundwater Sample (i/c QA/QC Samples)

Borehole / Monitoring Well	Metals	PAHs	PHC	VOC
MW201	1	1	1	1
MW202	1	1	1	1
MW206	1	1	1	1
MW207	1	1	1	1
Duplicate GW Sample	1			1
Trip Blank				1

It should be noted that, based on the analytical results of the submitted soil and groundwater

samples, if further activities of Phase Two ESA such as re-sampling and testing is required, additional samples from the area of interest will be submitted for analysis of contaminants of concern.

5) SOIL AND GROUNDWATER SAMPLING PROCEDURES

Soil Engineers Ltd.'s (SEL) Standard Operation Procedures (SOPs) will be followed throughout the field investigation (sampling, decontamination of equipment, observation and documentation) including the field QA/QC program. SEL SOPs are presented in Section 7 of this sampling and analysis plan.

6) DATA QUALITY OBJECTIVES

Sampling and decontamination procedures including QA/QC program should be carried out in accordance with:

- SEL SOPs, as presented in Section 7.
- The "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, as amended by O. Reg. 511/09.

Laboratory analytical methods, protocols and procedures should be carried out in accordance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11.

7) STANDARD OPERATING PROCEDURES (SOPs)

7.1) Borehole Drilling

The purpose of borehole drilling is to provide access to subsurface soils at specified locations and depths. Soil borings also allow for installation of groundwater monitoring wells.

7.1.1) Underground Utilities

Prior to drilling, the public utility service (One Call) and private utility services are contacted. The underground utility services are located and marked out in the field.

7.1.2) Drilling Methods

Direct Push Drilling (i.e. Geoprobe, Powerprobe, Pionjar, etc.)

The direct push drilling machine is a hydraulically powered hammer/ram sampling device. The unit is designed so that the weight of the vehicle provides the majority of downward force. The hydraulics, with the aid of a percussion hammer, push lengths of specially modified 54 mm (2.125 inch) outside diameter (OD), hardened steel rod into the ground. The rod is advanced to target sampling depth is reached. The steel rod has been specially modified for specific types of sample collection.

Flight-Auger Drilling

The flight-auger drilling machine is a hydraulically powered feed and retract system that provides 28,275 pounds (12,826 kg) of retract force and 18,650 pounds (8,460 kg) of down pressure. The 183 cm (72 inch) stroke, hydraulic vertical drive system has no chains or cables which can stretch. It is equipped with hollow-stem augers. It is extended to pre-determined sampling intervals using conventional drilling methods, at which time a decontaminated 51 mm split-spoon sampler is extended ahead of the lead auger to collect a soil sample. The split-spoon sampler is then brought to surface and opened, exposing the soil core sample.

Hand Dug Test Pit

The hand-dug test pits are hand-dug using shovel. Prior to digging and sampling at each test pit location, the shovel is brushed clean using a solution of phosphate-free detergent and distilled water.

7.1.3) Occupational Health and Safety

Prior to drilling, the site is inspected to ensure that no potentially hazardous material is present near/around the drilling area. Safety procedures are reviewed and a safety check of the equipment is conducted including locating the emergency stop button on the drill rig, checking personal protective equipment (hard hats, safety shoes, eye/ear protection), locating the first aid kit and confirming the location of the nearest hospital, and verifying the standard procedure in case of injury.

7.1.4) Drilling Spoils

Excess soil generated during sampling and drilling procedure is stored at the site in metal barrels. If the analytical results indicate the soil is contaminated, a licensed disposal company is notified to collect the barrels of soil for proper disposal.

7.1.5) Borehole Abandonment

After drilling, logging and/or sampling, boreholes will be backfilled by the method described below:

- Bentonite is thoroughly mixed into the grout within the specified percentage range. The tremie grout is usually placed into the hole; however, for selected boreholes (e.g., shallow borings well above the water table) at certain sites, the grout may be allowed to free fall, taking care to ensure the grout does not bridge and form gaps or voids in the grout column.
- The volume of the borehole is calculated and compared to the grout volume used during grouting to aid in verifying that bridging did not occur.
- When using a tremie to place grout in the borehole, the bottom of the tremie is submerged into the grout column and withdrawn slowly as the hole fills with grout. If allowing the grout to free fall (and not using a tremie), the grout is poured slowly into the boring. The rise of the grout column is visually monitored or sounded with a weighted tape.

- If the method used to drill the boring utilized a drive casing, the casing is slowly extracted during grouting such that the bottom of the casing does not come above the top of the grout column.
- During the grouting process, no contaminating material (oil, grease, or fuels from gloves, pumps, hoses, et. al) is permitted to enter the grout mix and personnel wear personal protective equipment as specified in the Project Health and Safety Plan.
- Following grouting, barriers are placed over grouted boreholes as the grout is likely to settle in time, creating a physical hazard. Grouted boreholes typically require at least a second visit to 'top off' the hole.
- The surface hole condition should match the pre-drilling condition (asphalt, concrete, or smoothed flush with native surface), unless otherwise specified in the project work plans.

7.1.6) Subsurface Obstruction

Where refusal to drilling occurs due to rock, foundation or underground services, the borehole is relocated within 2.0 m downstream from the original borehole location.

7.2) **Soil Sampling**

7.2.1) Introduction

Soil sampling is conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, May 1996" as revised December 1996 (MOE Guidance Manual) and as amended by O. Reg. 366/05, 66/08, 511/09, 245/10, 179/11, 269/11 and 333/13. The sampling procedures are described herein.

Drilling Rig Decontamination

Geoprobe

One-time use Shelby tube (thin-walled) samples are recovered from the boreholes in clear disposable PVC liners to prevent cross-contamination.

CME 55

Drilling equipment such as drill rigs, augers, drill pipes, drilling rods and split-spoons are decontaminated prior to initial use, between borehole locations and at the completion of drilling activities. The drilling equipment is manually scrubbed with a brush using a phosphate-free solution and thoroughly steam cleaned and/or power washed to remove any foreign material and potential contaminants.

In addition, the spilt-spoon sampler and any sub-sampling equipment is decontaminated prior to each usage. Various solutions are used for sampling equipment decontamination as described below:

- Phosphate-free soap solution (i.e., Alconox), tap water and distilled water are used for suspected petroleum hydrocarbon soil sampling.
- A reagent-grade methanol solution and distilled water are used for suspected VOCs soil sampling. The reinstate waste is collected.
- Reagent-grade 10% nitric acid solution and distilled water are used for suspected metals soil sampling. The reinstate waste will be collected.

7.2.2) Sample Logging and Field Screening

Samples are typically collected at 1.5 m intervals in the overburden. Tactile examination of the samples is made to classify the soil, and a log is recorded for each borehole detailing the physical characteristics of the soil including colour, soil type, structure, and any observed staining or odour. The organic vapour readings, the moisture content of the samples as determined in the

laboratory, the groundwater and cave-in levels measured at the time of investigation, and the groundwater monitoring well construction details are given on the borehole logs.

7.2.3) Field Screening and Calibration Procedures

The soil samples are classified based on physical characteristics including colour, soil type, moisture, and visible observation of staining and/or odour. In addition, the organic vapour reading for each soil sample is determined using a gas detector. Based on the overall soil physical characteristics, representative soil sample are selected for chemical analysis.

The organic vapour readings are measured using a portable RKI Eagle gas detector, TYPE 101 (Serial Number: E091015) set to include all gases, and having a minimum detection of 2 ppm. Prior to measurement, the detector is calibrated using a Hexane 40% LEL gas. The allowable range of calibration is 38% to 42%.

7.2.4) Soil Sampling

The soil from the disposable sampler liner is handled using new disposable gloves in order to avoid the risk of cross-contamination between the samples. Sufficient amounts of the soil samples are placed into clean glass jars with Teflon lined lids for analyses for Polychlorinated Biphenyls, Polyaromatic Hydrocarbons, moisture content, medium to heavy PHCs, and Metals.

Small amounts of the soil samples are collected using a disposable 'T'-shaped Terracore sampler and stored in methanol or sodium bisulfate vials for light PHCs (CCME F1) and VOCs analysis, respectively; the remainder of the samples is placed into a sealable bag for vapour measurement and soil classification. The samples are stored in an insulated container with ice after sampling and during shipment to the laboratory.

The minimum requirements for the number, type and frequency of field quality control are given below:

i. Field Duplicates: At least 1 field duplicate sample is collected and submitted for laboratory analysis for every 10 soil samples that are collected to ensure the soil sampling technique is accurate.

7.3) Well Installation

7.3.1) Introduction

The well installation procedures are described herein.

7.3.2) Screen and Riser Pipe

Monitoring wells are constructed from individually wrapped 38 or 50 mm inside diameter (ID) schedule 40 polyvinyl chloride (PVC) flush threaded casing equipped with O-rings. The screen consists of casing material which is factory slotted (slot width = 0.25 mm) to permit the entry of water into the well. The bottom of the screens are equipped with threaded end caps. The appropriate number of risers are coupled with the screen section(s) via threaded joints to construct the well. The top of the wells are tightly capped using a locking well cap, which prevents the infiltration of surface water and foreign material into the well and also provides security. A watertight, traffic-rated protective casing is installed over each monitoring well within a concrete pad extending approximately 0.5 mbgs. No PVC cements or other solvent based cements are used in the construction of the monitoring wells.

7.3.3) Well Materials Decontamination

Dedicated sampling equipment, such as submersible pumps, are decontaminated prior to installation inside monitoring wells.

Where factory-cleaned, hermetically sealed materials are used, no decontamination is conducted.

Setting Screen, Riser Casings and Filter Materials

At total depth, the soil cuttings are removed through circulation or rapidly spinning the augers prior to constructing the well. The drill pipe and bit or centre bit boring is removed. The well construction materials are then installed inside the open borehole or through the centre of the drive casing or augers.

After the monitoring well assembly is lowered to the bottom of the borehole, the filter pack is added until its height is approximately two feet above the top of the screen, and placement is verified. The filter pack is then surged using a surge block or swab in order to settle the pack material and reduce the possibility of bridging.

Setting Seals and Grouting

Once the top of the filter pack is verified to be in the correct position, a bentonite seal is placed above the filter pack. The seal is allowed to hydrate for at least one hour before proceeding with the grouting operation.

After hydration of the bentonite seal, grout is then pumped through a tremie pipe and filled from the top of the bentonite seal upward. The bottom of the tremie pipe should be maintained below the top of the grout to prevent free fall and bridging. When using drive casing or hollow-stem auger techniques, the drive casing/augers should be raised in incremental intervals, keeping the bottom of the drive casing/augers below the top of the grout. Grouting will cease when the grout level has risen to within approximately one to two feet of the ground surface, depending on the surface completion type (flush-mount versus above-ground). Grout levels are monitored to assure that grout taken into the formation is replaced by additional grout.

Capping the Wells

For above-ground completions, the protective steel casing will be centered on the well casing and inserted into the grouted annulus. Prior to installation, a 2-inch deep temporary spacer may

be placed between the PVC well cap and the bottom of the protective casing cover to keep the protective casing from settling onto the well cap. A minimum of 24 hours after grouting should elapse before installation of the concrete pad and steel guard posts for above-ground completions, or street boxes or vaults for flush mount completions. For above-ground completions, a concrete pad, usually 3-foot by 3-foot by 4-inch thick, is constructed at ground surface around the protective steel casing. The concrete is sloped away from the protective casing to promote surface drainage from the well.

For flush-mount (or subgrade) completions, a street box or vault is set and cemented in position. The top of the street box or vault will be raised slightly above grade and the cement sloped to grade to promote surface drainage away from the well.

7.3.4) Documentation of Monitoring Well Configuration

The following information is recorded:

- Length of well screen
- Total depth of well boring
- Depth from ground surface to top of grout or bentonite plug in bottom of borehole (if present)
- Depth to base of well string
- Depth to top and bottom of well screen

7.3.5) Monitoring Well Development/Purging

Installed monitoring wells will have to be developed to remove any fluids that may have been introduced into the well during drilling and to remove particles that may have become entrained in the well and filter pack (a minimum of three (3) well casing volumes of groundwater from each well will have to be developed).

Prior to each groundwater sampling event, groundwater will be purged from each monitoring well utilizing the three well casing volumes method. The monitoring wells will be instrumented with dedicated low-density polyethylene tubing to facilitate well development, purging and sampling requirements. Purged water will be contained and stored at the site for future disposal.

7.3.6) Water Level Measurements and Field Observation/Measurement of Water Quality Parameters

Water level measurements and water temperature will be taken using a water level meter (Dipper-T) equipped with a thermometer. Groundwater observations will be recorded for colour, clarity, the presence or absence of any free product/surface sheen and any odours present during purging the wells. The water level measuring device will be cleaned after each measurement using Alconox solution and water, followed by a distilled water rinse and a methanol rinse, in order to prevent cross-contamination between monitoring wells.

7.3.7) Groundwater Sampling

Prior to each groundwater sampling event, groundwater will have to be purged from each monitoring well utilizing the three well casing volumes method. The monitoring wells will be instrumented with dedicated low-density polyethylene tubing to facilitate well development, purging and sampling requirements. Purged water will be contained and stored at the site for future disposal.

Groundwater sampling will be conducted after purging and allowing the water to stabilize. The groundwater purging and sampling activities will be carried out using dedicated low-density polyethylene tubing. Groundwater samples will be collected into laboratory-supplied containers, prepared with preservative for the analysis being conducted. The samples scheduled for analysis of metals will be passed through a 0.45 micron filter as part of the sampling process.

Soil Engineers Ltd.
CONSULTING ENGINEERS
GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE
90 WEST BEAVER CREEK ROAD, SUITE #100, RICHMOND HILL, ONTARIO L4B 1E7 · TEL (416) 754-8515 · FAX (905) 881-8335

BARRIE	MISSISSAUGA	OSHAWA	NEWMARKET	GRAVENHURST	PETERBOROUGH	HAMILTON
TEL: (705) 721-7863	TEL: (905) 542-7605	TEL: (905) 440-2040	TEL: (905) 853-0647	TEL: (705) 684-4242	TEL: (905) 440-2040	TEL: (905) 777-7956
FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (905) 881-8335	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

APPENDIX 'B'

BOREHOLE LOGS

REFERENCE NO. 2007-E048

JOB NO.: 2007-E048

LOG OF BOREHOLE NO.: 201

FIGURE NO.: 1

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Direct Push

PROJECT LOCATION: 55 Eagle Street
Town of Newmarket

DRILLING DATE: November 26 & 27, 2020

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Combustible Headspace Reading (ppm)	Depth Scale (mbgs)	Combustible Headspace Reading (ppm)	REMARKS	WATER LEVEL
267.1	Ground Surface							
0.0	**20 cm TOPSOIL**	1A	DO	10	0		BH201/1B: Metals BH201/2: PHC, VOC, PAH	W.L. @ 5.39 mbgs on December 4, 2020
	Brown, damp **SANDY SILT**	1B		10				
266.3								
0.8	Brown, damp to moist **SANDY SILT, Till** occasional silt and sand seams	2	DO	90	1			
		3	DO	5	2			
		4	DO	0	3			
		5	DO	0	4			
		6	DO	0	5			
		7	DO	0	6			
		8	DO	0	7			
		9	DO	0	8			
		10	DO	0	9			
		11	DO	0	10			
258.6					11			
8.5	END OF BOREHOLE Installed 51mm standpipe @ 8.2m Bentonite seal from 0.0m to 4.6m Sand backfill from 4.6m to 8.2m 3m screen from 5.2m to 8.2m Provided with monument protective casing				12			

Combustible Headspace Reading (ppm): 20 60 100 140 180

Soil Engineers Ltd.

JOB NO.: 2007-E048

LOG OF BOREHOLE NO.: 202

FIGURE NO.: 2

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Direct Push

PROJECT LOCATION: 55 Eagle Street
Town of Newmarket

DRILLING DATE: November 25, 2020

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES Number	Type	Combustible Headspace Reading (ppm)	Depth Scale (mbgs)	Combustible Headspace Reading (ppm) 20 60 100 140 180	REMARKS	WATER LEVEL
268.7	Ground Surface							
0.0	**20 cm TOPSOIL**	1A	DO	0	0			
	Brown, damp **EARTH FILL** sandy silt, occasional asphalt fragment	1B		0				
		2	DO	0	1		BH202/2: Metals & Inorganics DUP S3: Metals	
		3	DO	0	2			
		4	DO	80			BH202/4: PHC, VOC, PAH	
265.7					3			
3.0	Brown, moist **SILTY SAND, Till** occasional silt and sand seams	5	DO	0				
		6	DO	0	4			
		7	DO	0	5			
		8	DO	0				
		9	DO	0	6			
		10	DO	0	7			
		11	DO	0	8			
		12	DO	0				
		13	DO	0	9			
258.9								
9.8	END OF BOREHOLE Installed 51mm standpipe @ 9.8m Bentonite seal from 0.0m to 6.1m Sand backfill from 6.1m to 9.8m 3m screen from 6.8m to 9.8m Provided with monument protective casing				10			W.L. @ 5.09 mbgs on December 4, 2020
					11			
					12			

JOB NO.: 2007-E048

LOG OF BOREHOLE NO.: 203

FIGURE NO.: 3

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Direct Push

PROJECT LOCATION: 55 Eagle Street
Town of Newmarket

DRILLING DATE: November 26, 2020

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES: Number	SAMPLES: Type	SAMPLES: Combustible Headspace Reading (ppm)	Depth Scale (mbgs)	Combustible Headspace Reading (ppm)	REMARKS	WATER LEVEL
266.0	Ground Surface							
0.0	**25 cm TOPSOIL**	1A	DO	0	0		BH203/1B: Metals, PHC	
	Brown, moist **EARTH FILL** sandy silt, trace of organics	1B	DO	0				
265.2 0.8	Brown, damp **SANDY SILT** trace of organics	2	DO	0	1			
		3	DO	0	2			
		4	DO	0	3			
263.0 3.0	END OF BOREHOLE				4 5 6 7 8 9 10 11 12			

Combustible Headspace Reading (ppm) scale: 20 60 100 140 180

Soil Engineers Ltd.

JOB NO.: 2007-E048

LOG OF BOREHOLE NO.: 204

FIGURE NO.: 4

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Direct Push

PROJECT LOCATION: 55 Eagle Street
Town of Newmarket

DRILLING DATE: November 24, 2020

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Combustible Headspace Reading (ppm)	Depth Scale (mbgs)	Combustible Headspace Reading (ppm)	REMARKS	WATER LEVEL
264.7	Ground Surface							
0.0	**20 cm TOPSOIL**	1A		0	0		B204/1B: Metals	
	Brown, damp **SILTY SAND** trace of gravel	1B	DO	0			DUP S2: Metals	
		2	DO	0	1			
		3	DO	5	2			
		4	DO	5	3			
		5	DO	0				
260.9					4			
3.8	END OF BOREHOLE				5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			

Combustible Headspace Reading (ppm) ● — 20 60 100 140 180

Soil Engineers Ltd.

JOB NO.: 2007-E048

LOG OF BOREHOLE NO.: 205

FIGURE NO.: 5

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Direct Push

PROJECT LOCATION: 55 Eagle Street
Town of Newmarket

DRILLING DATE: November 24, 2020

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES: Number	SAMPLES: Type	SAMPLES: Combustible Headspace Reading (ppm)	Depth Scale (mbgs)	Combustible Headspace Reading (ppm)	REMARKS	WATER LEVEL
261.0 / 0.0	Ground Surface							
	15 cm TOPSOIL	1A		10	0			
	Brown/dark brown, damp to moist **EARTH FILL** sandy silt with some clay and topsoil	1B	DO	5				
		2	DO	0	1			
		3	DO	0	2		BH205/3: Metals & Inorganics	
		4	DO	5	3			
		5	DO	0				
256.4		6	DO	50	4		BH205/6: PHC, VOC, PAH DUP S1: VOC	
4.6 / 255.7	Brown, moist **SANDY SILT**	7	DO	0	5			
5.3	END OF BOREHOLE				6			
					7			
					8			
					9			
					10			
					11			
					12			

Combustible Headspace Reading (ppm): 20 60 100 140 180

Soil Engineers Ltd.

JOB NO.: 2007-E048

LOG OF BOREHOLE NO.: 206

FIGURE NO.: 6

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Direct Push

PROJECT LOCATION: 55 Eagle Street
Town of Newmarket

DRILLING DATE: November 24, 2020

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES: Number	SAMPLES: Type	SAMPLES: Combustible Headspace Reading (ppm)	Depth Scale (mbgs)	Combustible Headspace Reading (ppm)	REMARKS	WATER LEVEL
258.5	Ground Surface							
0.0	**15 cm TOPSOIL**	1A		0	0			
	Brown, moist **EARTH FILL** silty clay, trace of organics	1B	DO	0			BH206/1B: Metals	
257.7								
0.8	Brown, moist **SANDY SILT** trace of organics	2	DO	0	1			
		3	DO	5	2			
256.2								
2.3	Brown/grey, moist to wet **SANDY SILT, Till**	4	DO	0	3			
		5	DO	0			BH206/5: PHC, VOC, PAH, pH	
		6	DO	0	4			
	brown, moist grey, wet	7	DO	0	5			
		8	DO	0				
252.4					6			
6.1	END OF BOREHOLE Installed 51mm standpipe @ 6.0m Bentonite seal from 0.0m to 2.4m Sand backfill from 2.4m to 6.0m 3m screen from 3.0m to 6.0m Provided with monument protective casing				7 8 9 10 11 12			W.L. @ 2.97 mbgs on December 4, 2020

Combustible Headspace Reading (ppm): 20 60 100 140 180

Soil Engineers Ltd.

JOB NO.: 2007-E048

LOG OF BOREHOLE NO.: 207

FIGURE NO.: 7

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Direct Push

PROJECT LOCATION: 55 Eagle Street
Town of Newmarket

DRILLING DATE: November 24, 2020

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES: Number	SAMPLES: Type	SAMPLES: Combustible Headspace Reading (ppm)	Depth Scale (mbgs)	Combustible Headspace Reading (ppm)	REMARKS	WATER LEVEL
259.3	Ground Surface							
0.0	**20 cm TOPSOIL**	1A	DO	0	0			
	Brown, moist **EARTH FILL** silty clay, with gravel	1B	DO	0			BH207/1B: Metals	
258.5 0.8	Brown, moist **SANDY SILT** trace of organics, trace of clay	2	DO	0	1			
		3	DO	0	2			
		4	DO	5				
256.3 3.0	Brown, moist to wet **SANDY SILT, Till**	5	DO	15	3		BH207/5: PHC, VOC, PAH	
	moist / wet	6	DO	0	4			
		7	DO	0	5			
		8	DO	0	6			
253.2 6.1	END OF BOREHOLE Installed 51mm standpipe @ 6.0m Bentonite seal from 0.0m to 2.4m Sand backfill from 2.4m to 6.0m 3m screen from 3.0m to 6.0m Provided with monument protective casing				7 8 9 10 11 12			W.L. @ 3.30 mbgs on December 4, 2020

Soil Engineers Ltd.

Soil Engineers Ltd.
CONSULTING ENGINEERS
GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE
90 WEST BEAVER CREEK ROAD, SUITE #100, RICHMOND HILL, ONTARIO L4B 1E7 · TEL (416) 754-8515 · FAX (905) 881-8335

BARRIE	MISSISSAUGA	OSHAWA	NEWMARKET	GRAVENHURST	PETERBOROUGH	HAMILTON
TEL: (705) 721-7863	TEL: (905) 542-7605	TEL: (905) 440-2040	TEL: (905) 853-0647	TEL: (705) 684-4242	TEL: (905) 440-2040	TEL: (905) 777-7956
FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (905) 881-8335	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

APPENDIX 'C'

CERTIFICATE OF ANALYSIS
(SOIL SAMPLES)

REFERENCE NO. 2007-E048

Your Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Your C.O.C. #: n/a

Attention: Munir Ahmad
Soil Engineers Ltd
90 West Beaver Creek Road
Unit 100
Richmond Hill, ON
CANADA L4B 1E7

Report Date: 2020/12/10
Report #: R6444629
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C0V7061
Received: 2020/11/27, 15:29

Sample Matrix: Soil
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	4	N/A	2020/12/02	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	2	2020/11/30	2020/12/01	CAM SOP-00408	R153 Ana. Prot. 2011
Hot Water Extractable Boron	2	2020/12/01	2020/12/01	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	5	N/A	2020/12/02		EPA 8260C m
Conductivity	2	2020/12/02	2020/12/02	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	7	2020/11/30	2020/12/01	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	4	2020/11/30	2020/11/30	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	7	2020/11/30	2020/12/02	CAM SOP-00447	EPA 6020B m
Moisture	11	N/A	2020/11/28	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	1	N/A	2020/12/01	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	4	2020/11/30	2020/12/02	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	4	2020/12/02	2020/12/02	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	2	N/A	2020/12/03	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCs	4	N/A	2020/12/01	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Soil	1	N/A	2020/12/01	CAM SOP-00228	EPA 8260C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope

Your Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Your C.O.C. #: n/a

Attention: Munir Ahmad

Soil Engineers Ltd
90 West Beaver Creek Road
Unit 100
Richmond Hill, ON
CANADA L4B 1E7

Report Date: 2020/12/10
Report #: R6444629
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C0V7061
Received: 2020/11/27, 15:29

dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Antonella Brasil
Senior Project Manager
10 Dec 2020 17:09:01

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: Antonella.Brasil@bvlabs.com
Phone# (905)817-5817

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 METALS & INORGANICS PKG (SOIL)

BV Labs ID		OGZ307	OGZ310		
Sampling Date		2020/11/25	2020/11/24		
COC Number		n/a	n/a		
	UNITS	BH202/2	BH205/3	RDL	QC Batch
Calculated Parameters					
Sodium Adsorption Ratio	N/A	0.28 (1)	0.24 (1)		7081744
Inorganics					
Conductivity	mS/cm	0.14	0.20	0.002	7087097
Moisture	%	7.2	16	1.0	7082173
Available (CaCl2) pH	pH	7.67	7.74		7087343
Chromium (VI)	ug/g	<0.18	<0.18	0.18	7084189
Metals					
Hot Water Ext. Boron (B)	ug/g	0.060	0.11	0.050	7084841
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	0.20	7083132
Acid Extractable Arsenic (As)	ug/g	2.0	1.7	1.0	7083132
Acid Extractable Barium (Ba)	ug/g	44	59	0.50	7083132
Acid Extractable Beryllium (Be)	ug/g	0.38	0.35	0.20	7083132
Acid Extractable Boron (B)	ug/g	5.7	6.2	5.0	7083132
Acid Extractable Cadmium (Cd)	ug/g	<0.10	<0.10	0.10	7083132
Acid Extractable Chromium (Cr)	ug/g	15	14	1.0	7083132
Acid Extractable Cobalt (Co)	ug/g	5.1	5.1	0.10	7083132
Acid Extractable Copper (Cu)	ug/g	11	11	0.50	7083132
Acid Extractable Lead (Pb)	ug/g	5.3	8.1	1.0	7083132
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	0.50	7083132
Acid Extractable Nickel (Ni)	ug/g	11	11	0.50	7083132
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	0.50	7083132
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	0.20	7083132
Acid Extractable Thallium (Tl)	ug/g	0.096	0.092	0.050	7083132
Acid Extractable Uranium (U)	ug/g	0.51	0.52	0.050	7083132
Acid Extractable Vanadium (V)	ug/g	25	23	5.0	7083132
Acid Extractable Zinc (Zn)	ug/g	25	30	5.0	7083132
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	0.050	7083132

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Sodium was not detected. To report SAR the sodium detection limit was used in the calculation. This value represents a maximum ratio.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 METALS PACKAGE (SOIL)

BV Labs ID		OGZ309	OGZ312			OGZ314	OGZ317	OGZ318		
Sampling Date		2020/11/24	2020/11/24			2020/11/24				
COC Number		n/a	n/a			n/a	n/a	n/a		
	UNITS	BH204/1B	BH206/1B	RDL	QC Batch	BH207/1B	DUP S2	DUP S3	RDL	QC Batch
Inorganics										
Moisture	%	16	20	1.0	7082173	14	20	7.1	1.0	7082173
Chromium (VI)	ug/g	<0.18	<0.18	0.18	7084189	<0.18	<0.18	<0.18	0.18	7084189
Metals										
Hot Water Ext. Boron (B)	ug/g	0.20	0.12	0.050	7083103					
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	0.20	7083132	<0.20	<0.20	<0.20	0.20	7083132
Acid Extractable Arsenic (As)	ug/g	2.8	2.2	1.0	7083132	2.1	2.7	1.9	1.0	7083132
Acid Extractable Barium (Ba)	ug/g	93	77	0.50	7083132	59	93	38	0.50	7083132
Acid Extractable Beryllium (Be)	ug/g	0.74	0.47	0.20	7083132	0.47	0.74	0.35	0.20	7083132
Acid Extractable Boron (B)	ug/g	9.0	7.1	5.0	7083132	<5.0	7.9	<5.0	5.0	7083132
Acid Extractable Cadmium (Cd)	ug/g	0.15	0.12	0.10	7083132	0.20	0.19	<0.10	0.10	7083132
Acid Extractable Chromium (Cr)	ug/g	25	17	1.0	7083132	17	24	12	1.0	7083132
Acid Extractable Cobalt (Co)	ug/g	8.8	7.2	0.10	7083132	6.0	8.8	4.5	0.10	7083132
Acid Extractable Copper (Cu)	ug/g	17	14	0.50	7083132	14	17	11	0.50	7083132
Acid Extractable Lead (Pb)	ug/g	9.4	9.3	1.0	7083132	23	9.5	5.0	1.0	7083132
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	0.50	7083132	<0.50	<0.50	<0.50	0.50	7083132
Acid Extractable Nickel (Ni)	ug/g	19	15	0.50	7083132	12	19	10	0.50	7083132
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	0.50	7083132	<0.50	<0.50	<0.50	0.50	7083132
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	0.20	7083132	<0.20	<0.20	<0.20	0.20	7083132
Acid Extractable Thallium (Tl)	ug/g	0.20	0.13	0.050	7083132	0.11	0.17	0.090	0.050	7083132
Acid Extractable Uranium (U)	ug/g	0.54	0.51	0.050	7083132	0.42	0.51	0.50	0.050	7083132
Acid Extractable Vanadium (V)	ug/g	38	27	5.0	7083132	28	37	22	5.0	7083132
Acid Extractable Zinc (Zn)	ug/g	43	41	5.0	7083132	440	45	23	5.0	7083132
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	0.050	7083132	<0.050	<0.050	<0.050	0.050	7083132

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 PAHS (SOIL)

BV Labs ID		OGZ308	OGZ311	OGZ313	OGZ315		
Sampling Date		2020/11/25	2020/11/24	2020/11/24	2020/11/24		
COC Number		n/a	n/a	n/a	n/a		
	UNITS	BH202/4	BH205/6	BH206/5	BH207/5	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	<0.0071	<0.0071	0.0071	7081742
Polyaromatic Hydrocarbons							
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
Benzo(a)anthracene	ug/g	<0.0050	0.0073	<0.0050	<0.0050	0.0050	7084444
Benzo(a)pyrene	ug/g	<0.0050	0.0070	<0.0050	<0.0050	0.0050	7084444
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0093	<0.0050	<0.0050	0.0050	7084444
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
Chrysene	ug/g	<0.0050	0.0085	<0.0050	<0.0050	0.0050	7084444
Dibenzo(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
Fluoranthene	ug/g	0.0054	0.018	<0.0050	<0.0050	0.0050	7084444
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7084444
Phenanthrene	ug/g	<0.0050	0.011	<0.0050	<0.0050	0.0050	7084444
Pyrene	ug/g	<0.0050	0.016	<0.0050	<0.0050	0.0050	7084444
Surrogate Recovery (%)							
D10-Anthracene	%	115	112	117	111		7084444
D14-Terphenyl (FS)	%	107	106	108	106		7084444
D8-Acenaphthylene	%	113	113	114	109		7084444

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		OGZ308	OGZ311	OGZ313	OGZ315			OGZ315		
Sampling Date		2020/11/25	2020/11/24	2020/11/24	2020/11/24			2020/11/24		
COC Number		n/a	n/a	n/a	n/a			n/a		
	UNITS	BH202/4	BH205/6	BH206/5	BH207/5	RDL	QC Batch	BH207/5 Lab-Dup	RDL	QC Batch
Inorganics										
Moisture	%	18	16	17	18	1.0	7082219	18	1.0	7082219
Calculated Parameters										
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7081743			
Volatile Organics										
Acetone (2-Propanone)	ug/g	<0.50	<0.50	<0.50	<0.50	0.50	7083062			
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	7083062			
Bromodichloromethane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Bromoform	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Bromomethane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Carbon Tetrachloride	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Chlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Chloroform	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Dibromochloromethane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
1,2-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
1,3-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
1,4-Dichlorobenzene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
1,1-Dichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
1,2-Dichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
1,1-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
cis-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
trans-1,2-Dichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
1,2-Dichloropropane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	<0.030	0.030	7083062			
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	<0.040	0.040	7083062			
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	7083062			
Ethylene Dibromide	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Hexane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Methylene Chloride(Dichloromethane)	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	<0.50	<0.50	<0.50	0.50	7083062			
Methyl Isobutyl Ketone	ug/g	<0.50	<0.50	<0.50	<0.50	0.50	7083062			
Methyl t-butyl ether (MTBE)	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Styrene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
1,1,1,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		OGZ308	OGZ311	OGZ313	OGZ315			OGZ315		
Sampling Date		2020/11/25	2020/11/24	2020/11/24	2020/11/24			2020/11/24		
COC Number		n/a	n/a	n/a	n/a			n/a		
	UNITS	BH202/4	BH205/6	BH206/5	BH207/5	RDL	QC Batch	BH207/5 Lab-Dup	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Tetrachloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	7083062			
1,1,1-Trichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
1,1,2-Trichloroethane	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Trichloroethylene	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	7083062			
Vinyl Chloride	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	7083062			
p+m-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	7083062			
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	7083062			
Total Xylenes	ug/g	<0.020	<0.020	<0.020	<0.020	0.020	7083062			
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	7083062			
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	7083062			
F2-F4 Hydrocarbons										
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	7083082	<10	10	7083082
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	<50	50	7083082	<50	50	7083082
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	<50	50	7083082	<50	50	7083082
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		7083082	Yes		7083082
Surrogate Recovery (%)										
o-Terphenyl	%	88	88	88	88		7083082	87		7083082
4-Bromofluorobenzene	%	83	82	82	80		7083062			
D10-o-Xylene	%	84	87	84	85		7083062			
D4-1,2-Dichloroethane	%	108	107	110	101		7083062			
D8-Toluene	%	97	100	98	99		7083062			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

O.REG 153 VOCS BY HS (SOIL)

BV Labs ID		OGZ316		
Sampling Date				
COC Number		n/a		
	UNITS	DUP S1	RDL	QC Batch
Inorganics				
Moisture	%	18	1.0	7084903
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	7081743
Volatile Organics				
Acetone (2-Propanone)	ug/g	<0.49	0.49	7083287
Benzene	ug/g	<0.0060	0.0060	7083287
Bromodichloromethane	ug/g	<0.040	0.040	7083287
Bromoform	ug/g	<0.040	0.040	7083287
Bromomethane	ug/g	<0.040	0.040	7083287
Carbon Tetrachloride	ug/g	<0.040	0.040	7083287
Chlorobenzene	ug/g	<0.040	0.040	7083287
Chloroform	ug/g	<0.040	0.040	7083287
Dibromochloromethane	ug/g	<0.040	0.040	7083287
1,2-Dichlorobenzene	ug/g	<0.040	0.040	7083287
1,3-Dichlorobenzene	ug/g	<0.040	0.040	7083287
1,4-Dichlorobenzene	ug/g	<0.040	0.040	7083287
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	0.040	7083287
1,1-Dichloroethane	ug/g	<0.040	0.040	7083287
1,2-Dichloroethane	ug/g	<0.049	0.049	7083287
1,1-Dichloroethylene	ug/g	<0.040	0.040	7083287
cis-1,2-Dichloroethylene	ug/g	<0.040	0.040	7083287
trans-1,2-Dichloroethylene	ug/g	<0.040	0.040	7083287
1,2-Dichloropropane	ug/g	<0.040	0.040	7083287
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	7083287
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	7083287
Ethylbenzene	ug/g	<0.010	0.010	7083287
Ethylene Dibromide	ug/g	<0.040	0.040	7083287
Hexane	ug/g	<0.040	0.040	7083287
Methylene Chloride(Dichloromethane)	ug/g	<0.049	0.049	7083287
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	0.40	7083287
Methyl Isobutyl Ketone	ug/g	<0.40	0.40	7083287
Methyl t-butyl ether (MTBE)	ug/g	<0.040	0.040	7083287
Styrene	ug/g	<0.040	0.040	7083287
1,1,1,2-Tetrachloroethane	ug/g	<0.040	0.040	7083287

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 VOCS BY HS (SOIL)

BV Labs ID		OGZ316		
Sampling Date				
COC Number		n/a		
	UNITS	DUP S1	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/g	<0.040	0.040	7083287
Tetrachloroethylene	ug/g	<0.040	0.040	7083287
Toluene	ug/g	<0.020	0.020	7083287
1,1,1-Trichloroethane	ug/g	<0.040	0.040	7083287
1,1,2-Trichloroethane	ug/g	<0.040	0.040	7083287
Trichloroethylene	ug/g	<0.010	0.010	7083287
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	0.040	7083287
Vinyl Chloride	ug/g	<0.019	0.019	7083287
p+m-Xylene	ug/g	<0.020	0.020	7083287
o-Xylene	ug/g	<0.020	0.020	7083287
Total Xylenes	ug/g	<0.020	0.020	7083287
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	90		7083287
D10-o-Xylene	%	95		7083287
D4-1,2-Dichloroethane	%	101		7083287
D8-Toluene	%	93		7083287

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

RESULTS OF ANALYSES OF SOIL

BV Labs ID		OGZ309	OGZ313	
Sampling Date		2020/11/24	2020/11/24	
COC Number		n/a	n/a	
	UNITS	**BH204/1B**	**BH206/5**	**QC Batch**
Inorganics				
Available (CaCl2) pH	pH	7.53	7.74	7087343
QC Batch = Quality Control Batch				

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

TEST SUMMARY

BV Labs ID: OGZ307
Sample ID: BH202/2
Matrix: Soil

Collected: 2020/11/25
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	7084841	2020/12/01	2020/12/01	Jolly John
Conductivity	AT	7087097	2020/12/02	2020/12/02	Tarunpreet Kaur
Hexavalent Chromium in Soil by IC	IC/SPEC	7084189	2020/11/30	2020/12/01	Rupinder Sihota
Strong Acid Leachable Metals by ICPMS	ICP/MS	7083132	2020/11/30	2020/12/02	Viviana Canzonieri
Moisture	BAL	7082173	N/A	2020/11/28	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7087343	2020/12/02	2020/12/02	Neil Dassanayake
Sodium Adsorption Ratio (SAR)	CALC/MET	7081744	N/A	2020/12/03	Automated Statchk

BV Labs ID: OGZ308
Sample ID: BH202/4
Matrix: Soil

Collected: 2020/11/25
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7081742	N/A	2020/12/02	Automated Statchk
1,3-Dichloropropene Sum	CALC	7081743	N/A	2020/12/02	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7083082	2020/11/30	2020/11/30	Ksenia Trofimova
Moisture	BAL	7082219	N/A	2020/11/28	Gurpreet Kaur (ONT)
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7084444	2020/11/30	2020/12/02	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7083062	N/A	2020/12/01	Yang (Philip) Yu

BV Labs ID: OGZ309
Sample ID: BH204/1B
Matrix: Soil

Collected: 2020/11/24
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	7083103	2020/11/30	2020/12/01	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	7084189	2020/11/30	2020/12/01	Rupinder Sihota
Strong Acid Leachable Metals by ICPMS	ICP/MS	7083132	2020/11/30	2020/12/02	Viviana Canzonieri
Moisture	BAL	7082173	N/A	2020/11/28	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7087343	2020/12/02	2020/12/02	Neil Dassanayake

BV Labs ID: OGZ310
Sample ID: BH205/3
Matrix: Soil

Collected: 2020/11/24
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	7084841	2020/12/01	2020/12/01	Jolly John
Conductivity	AT	7087097	2020/12/02	2020/12/02	Tarunpreet Kaur
Hexavalent Chromium in Soil by IC	IC/SPEC	7084189	2020/11/30	2020/12/01	Rupinder Sihota
Strong Acid Leachable Metals by ICPMS	ICP/MS	7083132	2020/11/30	2020/12/02	Viviana Canzonieri
Moisture	BAL	7082173	N/A	2020/11/28	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7087343	2020/12/02	2020/12/02	Neil Dassanayake
Sodium Adsorption Ratio (SAR)	CALC/MET	7081744	N/A	2020/12/03	Automated Statchk

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

TEST SUMMARY

BV Labs ID: OGZ311
Sample ID: BH205/6
Matrix: Soil

Collected: 2020/11/24
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7081742	N/A	2020/12/02	Automated Statchk
1,3-Dichloropropene Sum	CALC	7081743	N/A	2020/12/02	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7083082	2020/11/30	2020/11/30	Ksenia Trofimova
Moisture	BAL	7082219	N/A	2020/11/28	Gurpreet Kaur (ONT)
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7084444	2020/11/30	2020/12/02	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7083062	N/A	2020/12/01	Yang (Philip) Yu

BV Labs ID: OGZ312
Sample ID: BH206/1B
Matrix: Soil

Collected: 2020/11/24
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	7083103	2020/11/30	2020/12/01	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	7084189	2020/11/30	2020/12/01	Rupinder Sihota
Strong Acid Leachable Metals by ICPMS	ICP/MS	7083132	2020/11/30	2020/12/02	Viviana Canzonieri
Moisture	BAL	7082173	N/A	2020/11/28	Gurpreet Kaur (ONT)

BV Labs ID: OGZ313
Sample ID: BH206/5
Matrix: Soil

Collected: 2020/11/24
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7081742	N/A	2020/12/02	Automated Statchk
1,3-Dichloropropene Sum	CALC	7081743	N/A	2020/12/02	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7083082	2020/11/30	2020/11/30	Ksenia Trofimova
Moisture	BAL	7082219	N/A	2020/11/28	Gurpreet Kaur (ONT)
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7084444	2020/11/30	2020/12/02	Mitesh Raj
pH CaCl2 EXTRACT	AT	7087343	2020/12/02	2020/12/02	Neil Dassanayake
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7083062	N/A	2020/12/01	Yang (Philip) Yu

BV Labs ID: OGZ314
Sample ID: BH207/1B
Matrix: Soil

Collected: 2020/11/24
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	7084189	2020/11/30	2020/12/01	Rupinder Sihota
Strong Acid Leachable Metals by ICPMS	ICP/MS	7083132	2020/11/30	2020/12/02	Viviana Canzonieri
Moisture	BAL	7082173	N/A	2020/11/28	Gurpreet Kaur (ONT)

BV Labs ID: OGZ315
Sample ID: BH207/5
Matrix: Soil

Collected: 2020/11/24
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7081742	N/A	2020/12/02	Automated Statchk

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

TEST SUMMARY

BV Labs ID: OGZ315
Sample ID: BH207/5
Matrix: Soil

Collected: 2020/11/24
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7081743	N/A	2020/12/02	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7083082	2020/11/30	2020/11/30	Ksenia Trofimova
Moisture	BAL	7082219	N/A	2020/11/28	Gurpreet Kaur (ONT)
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7084444	2020/11/30	2020/12/02	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7083062	N/A	2020/12/01	Yang (Philip) Yu

BV Labs ID: OGZ315 Dup
Sample ID: BH207/5
Matrix: Soil

Collected: 2020/11/24
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7083082	2020/11/30	2020/11/30	Ksenia Trofimova
Moisture	BAL	7082219	N/A	2020/11/28	Gurpreet Kaur (ONT)

BV Labs ID: OGZ316
Sample ID: DUP S1
Matrix: Soil

Collected:
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7081743	N/A	2020/12/02	Automated Statchk
Moisture	BAL	7084903	N/A	2020/12/01	Prgya Panchal
Volatile Organic Compounds in Soil	GC/MS	7083287	N/A	2020/12/01	Blair Gannon

BV Labs ID: OGZ317
Sample ID: DUP S2
Matrix: Soil

Collected:
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	7084189	2020/11/30	2020/12/01	Rupinder Sihota
Strong Acid Leachable Metals by ICPMS	ICP/MS	7083132	2020/11/30	2020/12/02	Viviana Canzonieri
Moisture	BAL	7082173	N/A	2020/11/28	Gurpreet Kaur (ONT)

BV Labs ID: OGZ318
Sample ID: DUP S3
Matrix: Soil

Collected:
Shipped:
Received: 2020/11/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	7084189	2020/11/30	2020/12/01	Rupinder Sihota
Strong Acid Leachable Metals by ICPMS	ICP/MS	7083132	2020/11/30	2020/12/02	Viviana Canzonieri
Moisture	BAL	7082173	N/A	2020/11/28	Gurpreet Kaur (ONT)

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.7°C

Cooler custody seal was present and intact.

Revised Report (2020/12/10) : Project # corrected to 2007-E048.

Results relate only to the items tested.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

QUALITY ASSURANCE REPORT

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7083062	4-Bromofluorobenzene	2020/12/01	94	60 - 140	95	60 - 140	85	%		
7083062	D10-o-Xylene	2020/12/01	89	60 - 130	77	60 - 130	82	%		
7083062	D4-1,2-Dichloroethane	2020/12/01	104	60 - 140	108	60 - 140	108	%		
7083062	D8-Toluene	2020/12/01	109	60 - 140	106	60 - 140	97	%		
7083082	o-Terphenyl	2020/11/30	88	60 - 130	85	60 - 130	86	%		
7083287	4-Bromofluorobenzene	2020/12/01	100	60 - 140	100	60 - 140	91	%		
7083287	D10-o-Xylene	2020/12/01	96	60 - 130	83	60 - 130	70	%		
7083287	D4-1,2-Dichloroethane	2020/12/01	98	60 - 140	101	60 - 140	111	%		
7083287	D8-Toluene	2020/12/01	111	60 - 140	109	60 - 140	89	%		
7084444	D10-Anthracene	2020/12/02	115	50 - 130	119	50 - 130	113	%		
7084444	D14-Terphenyl (FS)	2020/12/02	106	50 - 130	112	50 - 130	105	%		
7084444	D8-Acenaphthylene	2020/12/02	113	50 - 130	119	50 - 130	111	%		
7082173	Moisture	2020/11/28							3.8	20
7082219	Moisture	2020/11/28							0.57	20
7083062	1,1,1,2-Tetrachloroethane	2020/12/01	100	60 - 140	106	60 - 130	<0.050	ug/g	NC	50
7083062	1,1,1-Trichloroethane	2020/12/01	95	60 - 140	100	60 - 130	<0.050	ug/g	NC	50
7083062	1,1,2,2-Tetrachloroethane	2020/12/01	100	60 - 140	112	60 - 130	<0.050	ug/g	NC	50
7083062	1,1,2-Trichloroethane	2020/12/01	108	60 - 140	115	60 - 130	<0.050	ug/g	NC	50
7083062	1,1-Dichloroethane	2020/12/01	96	60 - 140	100	60 - 130	<0.050	ug/g	NC	50
7083062	1,1-Dichloroethylene	2020/12/01	99	60 - 140	102	60 - 130	<0.050	ug/g	NC	50
7083062	1,2-Dichlorobenzene	2020/12/01	97	60 - 140	102	60 - 130	<0.050	ug/g	NC	50
7083062	1,2-Dichloroethane	2020/12/01	94	60 - 140	102	60 - 130	<0.050	ug/g	NC	50
7083062	1,2-Dichloropropane	2020/12/01	93	60 - 140	102	60 - 130	<0.050	ug/g	NC	50
7083062	1,3-Dichlorobenzene	2020/12/01	98	60 - 140	99	60 - 130	<0.050	ug/g	NC	50
7083062	1,4-Dichlorobenzene	2020/12/01	101	60 - 140	103	60 - 130	<0.050	ug/g	NC	50
7083062	Acetone (2-Propanone)	2020/12/01	85	60 - 140	92	60 - 140	<0.50	ug/g	NC	50
7083062	Benzene	2020/12/01	96	60 - 140	101	60 - 130	<0.020	ug/g	NC	50
7083062	Bromodichloromethane	2020/12/01	98	60 - 140	108	60 - 130	<0.050	ug/g	NC	50
7083062	Bromoform	2020/12/01	96	60 - 140	110	60 - 130	<0.050	ug/g	NC	50
7083062	Bromomethane	2020/12/01	100	60 - 140	104	60 - 140	<0.050	ug/g	NC	50
7083062	Carbon Tetrachloride	2020/12/01	94	60 - 140	98	60 - 130	<0.050	ug/g	NC	50

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7083062	Chlorobenzene	2020/12/01	94	60 - 140	99	60 - 130	<0.050	ug/g	NC	50
7083062	Chloroform	2020/12/01	97	60 - 140	104	60 - 130	<0.050	ug/g	NC	50
7083062	cis-1,2-Dichloroethylene	2020/12/01	94	60 - 140	101	60 - 130	<0.050	ug/g	NC	50
7083062	cis-1,3-Dichloropropene	2020/12/01	87	60 - 140	93	60 - 130	<0.030	ug/g	NC	50
7083062	Dibromochloromethane	2020/12/01	97	60 - 140	106	60 - 130	<0.050	ug/g	NC	50
7083062	Dichlorodifluoromethane (FREON 12)	2020/12/01	86	60 - 140	94	60 - 140	<0.050	ug/g	NC	50
7083062	Ethylbenzene	2020/12/01	87	60 - 140	90	60 - 130	<0.020	ug/g	NC	50
7083062	Ethylene Dibromide	2020/12/01	94	60 - 140	101	60 - 130	<0.050	ug/g	NC	50
7083062	F1 (C6-C10) - BTEX	2020/12/01					<10	ug/g	NC	30
7083062	F1 (C6-C10)	2020/12/01	115	60 - 140	96	80 - 120	<10	ug/g	NC	30
7083062	Hexane	2020/12/01	96	60 - 140	98	60 - 130	<0.050	ug/g	NC	50
7083062	Methyl Ethyl Ketone (2-Butanone)	2020/12/01	75	60 - 140	84	60 - 140	<0.50	ug/g	NC	50
7083062	Methyl Isobutyl Ketone	2020/12/01	66	60 - 140	78	60 - 130	<0.50	ug/g	NC	50
7083062	Methyl t-butyl ether (MTBE)	2020/12/01	81	60 - 140	86	60 - 130	<0.050	ug/g	NC	50
7083062	Methylene Chloride(Dichloromethane)	2020/12/01	103	60 - 140	109	60 - 130	<0.050	ug/g	NC	50
7083062	o-Xylene	2020/12/01	86	60 - 140	90	60 - 130	<0.020	ug/g	NC	50
7083062	p+m-Xylene	2020/12/01	90	60 - 140	92	60 - 130	<0.020	ug/g	NC	50
7083062	Styrene	2020/12/01	96	60 - 140	101	60 - 130	<0.050	ug/g	NC	50
7083062	Tetrachloroethylene	2020/12/01	89	60 - 140	89	60 - 130	<0.050	ug/g	NC	50
7083062	Toluene	2020/12/01	92	60 - 140	95	60 - 130	<0.020	ug/g	NC	50
7083062	Total Xylenes	2020/12/01					<0.020	ug/g	NC	50
7083062	trans-1,2-Dichloroethylene	2020/12/01	98	60 - 140	102	60 - 130	<0.050	ug/g	NC	50
7083062	trans-1,3-Dichloropropene	2020/12/01	101	60 - 140	105	60 - 130	<0.040	ug/g	NC	50
7083062	Trichloroethylene	2020/12/01	96	60 - 140	102	60 - 130	<0.050	ug/g	NC	50
7083062	Trichlorofluoromethane (FREON 11)	2020/12/01	98	60 - 140	101	60 - 130	<0.050	ug/g	NC	50
7083062	Vinyl Chloride	2020/12/01	95	60 - 140	101	60 - 130	<0.020	ug/g	NC	50
7083082	F2 (C10-C16 Hydrocarbons)	2020/11/30	96	50 - 130	93	80 - 120	<10	ug/g	NC	30
7083082	F3 (C16-C34 Hydrocarbons)	2020/11/30	104	50 - 130	100	80 - 120	<50	ug/g	NC	30
7083082	F4 (C34-C50 Hydrocarbons)	2020/11/30	104	50 - 130	101	80 - 120	<50	ug/g	NC	30
7083103	Hot Water Ext. Boron (B)	2020/12/01	109	75 - 125	91	75 - 125	<0.050	ug/g	3.2	40
7083132	Acid Extractable Antimony (Sb)	2020/12/02	87	75 - 125	104	80 - 120	<0.20	ug/g	NC	30

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7083132	Acid Extractable Arsenic (As)	2020/12/02	97	75 - 125	106	80 - 120	<1.0	ug/g	1.3	30
7083132	Acid Extractable Barium (Ba)	2020/12/02	NC	75 - 125	106	80 - 120	<0.50	ug/g	2.0	30
7083132	Acid Extractable Beryllium (Be)	2020/12/02	92	75 - 125	102	80 - 120	<0.20	ug/g	4.4	30
7083132	Acid Extractable Boron (B)	2020/12/02	87	75 - 125	100	80 - 120	<5.0	ug/g	0.23	30
7083132	Acid Extractable Cadmium (Cd)	2020/12/02	94	75 - 125	103	80 - 120	<0.10	ug/g	15	30
7083132	Acid Extractable Chromium (Cr)	2020/12/02	95	75 - 125	103	80 - 120	<1.0	ug/g	2.4	30
7083132	Acid Extractable Cobalt (Co)	2020/12/02	95	75 - 125	103	80 - 120	<0.10	ug/g	0.055	30
7083132	Acid Extractable Copper (Cu)	2020/12/02	92	75 - 125	105	80 - 120	<0.50	ug/g	6.5	30
7083132	Acid Extractable Lead (Pb)	2020/12/02	94	75 - 125	103	80 - 120	<1.0	ug/g	4.4	30
7083132	Acid Extractable Mercury (Hg)	2020/12/02	84	75 - 125	89	80 - 120	<0.050	ug/g	NC	30
7083132	Acid Extractable Molybdenum (Mo)	2020/12/02	94	75 - 125	105	80 - 120	<0.50	ug/g	NC	30
7083132	Acid Extractable Nickel (Ni)	2020/12/02	97	75 - 125	104	80 - 120	<0.50	ug/g	1.9	30
7083132	Acid Extractable Selenium (Se)	2020/12/02	101	75 - 125	105	80 - 120	<0.50	ug/g	NC	30
7083132	Acid Extractable Silver (Ag)	2020/12/02	94	75 - 125	103	80 - 120	<0.20	ug/g	NC	30
7083132	Acid Extractable Thallium (Tl)	2020/12/02	94	75 - 125	101	80 - 120	<0.050	ug/g	11	30
7083132	Acid Extractable Uranium (U)	2020/12/02	94	75 - 125	99	80 - 120	<0.050	ug/g	5.0	30
7083132	Acid Extractable Vanadium (V)	2020/12/02	NC	75 - 125	106	80 - 120	<5.0	ug/g	1.6	30
7083132	Acid Extractable Zinc (Zn)	2020/12/02	NC	75 - 125	100	80 - 120	<5.0	ug/g	2.9	30
7083287	1,1,1,2-Tetrachloroethane	2020/12/01	87	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7083287	1,1,1-Trichloroethane	2020/12/01	87	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7083287	1,1,2,2-Tetrachloroethane	2020/12/01	84	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7083287	1,1,2-Trichloroethane	2020/12/01	90	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7083287	1,1-Dichloroethane	2020/12/01	80	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7083287	1,1-Dichloroethylene	2020/12/01	82	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
7083287	1,2-Dichlorobenzene	2020/12/01	85	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7083287	1,2-Dichloroethane	2020/12/01	83	60 - 140	95	60 - 130	<0.049	ug/g	NC	50
7083287	1,2-Dichloropropane	2020/12/01	82	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7083287	1,3-Dichlorobenzene	2020/12/01	82	60 - 140	93	60 - 130	<0.040	ug/g	NC	50
7083287	1,4-Dichlorobenzene	2020/12/01	96	60 - 140	109	60 - 130	<0.040	ug/g	NC	50
7083287	Acetone (2-Propanone)	2020/12/01	102	60 - 140	109	60 - 140	<0.49	ug/g	NC	50
7083287	Benzene	2020/12/01	78	60 - 140	93	60 - 130	<0.0060	ug/g	NC	50

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7083287	Bromodichloromethane	2020/12/01	87	60 - 140	102	60 - 130	<0.040	ug/g	NC	50
7083287	Bromoform	2020/12/01	86	60 - 140	97	60 - 130	<0.040	ug/g	NC	50
7083287	Bromomethane	2020/12/01	80	60 - 140	97	60 - 140	<0.040	ug/g	NC	50
7083287	Carbon Tetrachloride	2020/12/01	85	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7083287	Chlorobenzene	2020/12/01	83	60 - 140	97	60 - 130	<0.040	ug/g	NC	50
7083287	Chloroform	2020/12/01	85	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
7083287	cis-1,2-Dichloroethylene	2020/12/01	85	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
7083287	cis-1,3-Dichloropropene	2020/12/01	81	60 - 140	94	60 - 130	<0.030	ug/g	NC	50
7083287	Dibromochloromethane	2020/12/01	85	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7083287	Dichlorodifluoromethane (FREON 12)	2020/12/01	73	60 - 140	91	60 - 140	<0.040	ug/g	NC	50
7083287	Ethylbenzene	2020/12/01	76	60 - 140	91	60 - 130	<0.010	ug/g	NC	50
7083287	Ethylene Dibromide	2020/12/01	83	60 - 140	93	60 - 130	<0.040	ug/g	NC	50
7083287	Hexane	2020/12/01	82	60 - 140	106	60 - 130	<0.040	ug/g	NC	50
7083287	Methyl Ethyl Ketone (2-Butanone)	2020/12/01	92	60 - 140	101	60 - 140	<0.40	ug/g	NC	50
7083287	Methyl Isobutyl Ketone	2020/12/01	90	60 - 140	103	60 - 130	<0.40	ug/g	NC	50
7083287	Methyl t-butyl ether (MTBE)	2020/12/01	83	60 - 140	89	60 - 130	<0.040	ug/g	NC	50
7083287	Methylene Chloride(Dichloromethane)	2020/12/01	84	60 - 140	98	60 - 130	<0.049	ug/g	NC	50
7083287	o-Xylene	2020/12/01	79	60 - 140	94	60 - 130	<0.020	ug/g	NC	50
7083287	p+m-Xylene	2020/12/01	82	60 - 140	99	60 - 130	<0.020	ug/g	NC	50
7083287	Styrene	2020/12/01	91	60 - 140	109	60 - 130	<0.040	ug/g	NC	50
7083287	Tetrachloroethylene	2020/12/01	81	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
7083287	Toluene	2020/12/01	84	60 - 140	99	60 - 130	<0.020	ug/g	NC	50
7083287	Total Xylenes	2020/12/01					<0.020	ug/g	NC	50
7083287	trans-1,2-Dichloroethylene	2020/12/01	84	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7083287	trans-1,3-Dichloropropene	2020/12/01	88	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
7083287	Trichloroethylene	2020/12/01	88	60 - 140	104	60 - 130	<0.010	ug/g	NC	50
7083287	Trichlorofluoromethane (FREON 11)	2020/12/01	83	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
7083287	Vinyl Chloride	2020/12/01	79	60 - 140	97	60 - 130	<0.019	ug/g	NC	50
7084189	Chromium (VI)	2020/12/01	54 (1)	70 - 130	88	80 - 120	<0.18	ug/g	NC	35
7084444	1-Methylnaphthalene	2020/12/02	83	50 - 130	103	50 - 130	<0.0050	ug/g	NC	40
7084444	2-Methylnaphthalene	2020/12/02	79	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

QUALITY ASSURANCE REPORT(CONT'D)

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7084444	Acenaphthene	2020/12/02	89	50 - 130	95	50 - 130	<0.0050	ug/g	NC	40
7084444	Acenaphthylene	2020/12/02	97	50 - 130	103	50 - 130	<0.0050	ug/g	NC	40
7084444	Anthracene	2020/12/02	105	50 - 130	107	50 - 130	<0.0050	ug/g	NC	40
7084444	Benzo(a)anthracene	2020/12/02	107	50 - 130	110	50 - 130	<0.0050	ug/g	NC	40
7084444	Benzo(a)pyrene	2020/12/02	92	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
7084444	Benzo(b/j)fluoranthene	2020/12/02	96	50 - 130	104	50 - 130	<0.0050	ug/g	NC	40
7084444	Benzo(g,h,i)perylene	2020/12/02	96	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
7084444	Benzo(k)fluoranthene	2020/12/02	99	50 - 130	104	50 - 130	<0.0050	ug/g	NC	40
7084444	Chrysene	2020/12/02	107	50 - 130	111	50 - 130	<0.0050	ug/g	NC	40
7084444	Dibenzo(a,h)anthracene	2020/12/02	104	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
7084444	Fluoranthene	2020/12/02	107	50 - 130	110	50 - 130	<0.0050	ug/g	NC	40
7084444	Fluorene	2020/12/02	100	50 - 130	106	50 - 130	<0.0050	ug/g	NC	40
7084444	Indeno(1,2,3-cd)pyrene	2020/12/02	106	50 - 130	108	50 - 130	<0.0050	ug/g	NC	40
7084444	Naphthalene	2020/12/02	73	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
7084444	Phenanthrene	2020/12/02	100	50 - 130	103	50 - 130	<0.0050	ug/g	NC	40
7084444	Pyrene	2020/12/02	103	50 - 130	106	50 - 130	<0.0050	ug/g	NC	40
7084841	Hot Water Ext. Boron (B)	2020/12/01	104	75 - 125	97	75 - 125	<0.050	ug/g	0.70	40
7084903	Moisture	2020/12/01							1.8	20
7087097	Conductivity	2020/12/02			102	90 - 110	<0.002	mS/cm	0.61	10

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7087343	Available (CaCl2) pH	2020/12/02			100	97 - 103			0.41	N/A

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample. The matrix spike was reanalyzed to confirm result.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V7061
Report Date: 2020/12/10

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Your Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Your C.O.C. #: n/a

Attention: Munir Ahmad

Soil Engineers Ltd
90 West Beaver Creek Road
Unit 100
Richmond Hill, ON
CANADA L4B 1E7

Report Date: 2020/12/04
Report #: R6436077
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0V8911
Received: 2020/11/30, 15:34

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	1	N/A	2020/12/03	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	1	2020/12/02	2020/12/02	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	1	N/A	2020/12/03		EPA 8260C m
Hexavalent Chromium in Soil by IC (1)	2	2020/12/02	2020/12/03	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydro. CCME F1 & BTEX in Soil (2)	1	N/A	2020/12/03	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (3)	2	2020/12/02	2020/12/03	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	2	2020/12/02	2020/12/03	CAM SOP-00447	EPA 6020B m
Moisture	3	N/A	2020/12/01	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	1	2020/12/02	2020/12/03	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs	1	N/A	2020/12/02	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Your C.O.C. #: n/a

Attention: Munir Ahmad

Soil Engineers Ltd
90 West Beaver Creek Road
Unit 100
Richmond Hill, ON
CANADA L4B 1E7

Report Date: 2020/12/04
Report #: R6436077
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0V8911
Received: 2020/11/30, 15:34

(1) Soils are reported on a dry weight basis unless otherwise specified.
(2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.
(3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Bureau Veritas Laboratories
04 Dec 2020 09:46:23

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: Antonella.Brasil@bvlabs.com
Phone# (905)817-5817

This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C0V8911
Report Date: 2020/12/04

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 METALS PACKAGE (SOIL)

BV Labs ID		OHK252			OHK254		
Sampling Date		2020/11/26			2020/11/26		
COC Number		n/a			n/a		
	UNITS	BH201/1B	RDL	QC Batch	BH203/1B	RDL	QC Batch
Inorganics							
Moisture	%	13	1.0	7085895			
Chromium (VI)	ug/g	<0.18	0.18	7087823	<0.18	0.18	7087823
Metals							
Hot Water Ext. Boron (B)	ug/g				0.25	0.050	7087572
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	7087415	<0.20	0.20	7087415
Acid Extractable Arsenic (As)	ug/g	1.9	1.0	7087415	1.1	1.0	7087415
Acid Extractable Barium (Ba)	ug/g	76	0.50	7087415	33	0.50	7087415
Acid Extractable Beryllium (Be)	ug/g	0.55	0.20	7087415	0.34	0.20	7087415
Acid Extractable Boron (B)	ug/g	10	5.0	7087415	<5.0	5.0	7087415
Acid Extractable Cadmium (Cd)	ug/g	0.10	0.10	7087415	<0.10	0.10	7087415
Acid Extractable Chromium (Cr)	ug/g	19	1.0	7087415	14	1.0	7087415
Acid Extractable Cobalt (Co)	ug/g	6.7	0.10	7087415	4.5	0.10	7087415
Acid Extractable Copper (Cu)	ug/g	13	0.50	7087415	4.1	0.50	7087415
Acid Extractable Lead (Pb)	ug/g	8.3	1.0	7087415	6.1	1.0	7087415
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	7087415	<0.50	0.50	7087415
Acid Extractable Nickel (Ni)	ug/g	14	0.50	7087415	7.3	0.50	7087415
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	7087415	<0.50	0.50	7087415
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	7087415	<0.20	0.20	7087415
Acid Extractable Thallium (Tl)	ug/g	0.12	0.050	7087415	0.052	0.050	7087415
Acid Extractable Uranium (U)	ug/g	0.54	0.050	7087415	0.43	0.050	7087415
Acid Extractable Vanadium (V)	ug/g	32	5.0	7087415	28	5.0	7087415
Acid Extractable Zinc (Zn)	ug/g	33	5.0	7087415	27	5.0	7087415
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	7087415	<0.050	0.050	7087415

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel. (905) 817-5700 Toll-Free. 800-563-6266 Fax. (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V8911
Report Date: 2020/12/04

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 PAHS (SOIL)

BV Labs ID		OHK253		
Sampling Date		2020/11/26		
COC Number		n/a		
	UNITS	BH201/2	RDL	QC Batch
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	7084890
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	<0.0050	0.0050	7088991
Acenaphthylene	ug/g	<0.0050	0.0050	7088991
Anthracene	ug/g	<0.0050	0.0050	7088991
Benzo(a)anthracene	ug/g	<0.0050	0.0050	7088991
Benzo(a)pyrene	ug/g	<0.0050	0.0050	7088991
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0050	7088991
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	7088991
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	7088991
Chrysene	ug/g	<0.0050	0.0050	7088991
Dibenzo(a,h)anthracene	ug/g	<0.0050	0.0050	7088991
Fluoranthene	ug/g	<0.0050	0.0050	7088991
Fluorene	ug/g	<0.0050	0.0050	7088991
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	7088991
1-Methylnaphthalene	ug/g	<0.0050	0.0050	7088991
2-Methylnaphthalene	ug/g	<0.0050	0.0050	7088991
Naphthalene	ug/g	<0.0050	0.0050	7088991
Phenanthrene	ug/g	<0.0050	0.0050	7088991
Pyrene	ug/g	<0.0050	0.0050	7088991
Surrogate Recovery (%)				
D10-Anthracene	%	113		7088991
D14-Terphenyl (FS)	%	104		7088991
D8-Acenaphthylene	%	110		7088991

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V8911
Report Date: 2020/12/04

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 PHCS, BTEX/F1-F4 (SOIL)

BV Labs ID		OHK254			OHK254		
Sampling Date		2020/11/26			2020/11/26		
COC Number		n/a			n/a		
	UNITS	BH203/1B	RDL	QC Batch	BH203/1B Lab-Dup	RDL	QC Batch
Inorganics							
Moisture	%	13	1.0	7086028			
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.020	0.020	7089268	<0.020	0.020	7089268
Toluene	ug/g	<0.020	0.020	7089268	<0.020	0.020	7089268
Ethylbenzene	ug/g	<0.020	0.020	7089268	<0.020	0.020	7089268
o-Xylene	ug/g	<0.020	0.020	7089268	<0.020	0.020	7089268
p+m-Xylene	ug/g	<0.040	0.040	7089268	<0.040	0.040	7089268
Total Xylenes	ug/g	<0.040	0.040	7089268	<0.040	0.040	7089268
F1 (C6-C10)	ug/g	<10	10	7089268	<10	10	7089268
F1 (C6-C10) - BTEX	ug/g	<10	10	7089268	<10	10	7089268
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	7088384			
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7088384			
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7088384			
Reached Baseline at C50	ug/g	Yes		7088384			
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	95		7089268	96		7089268
4-Bromofluorobenzene	%	102		7089268	102		7089268
D10-o-Xylene	%	102		7089268	103		7089268
D4-1,2-Dichloroethane	%	104		7089268	103		7089268
o-Terphenyl	%	83		7088384			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		OHK253		
Sampling Date		2020/11/26		
COC Number		n/a		
	UNITS	BH201/2	RDL	QC Batch
Inorganics				
Moisture	%	13	1.0	7086028
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	7084869
Volatile Organics				
Acetone (2-Propanone)	ug/g	<0.50	0.50	7087497
Benzene	ug/g	<0.020	0.020	7087497
Bromodichloromethane	ug/g	<0.050	0.050	7087497
Bromoform	ug/g	<0.050	0.050	7087497
Bromomethane	ug/g	<0.050	0.050	7087497
Carbon Tetrachloride	ug/g	<0.050	0.050	7087497
Chlorobenzene	ug/g	<0.050	0.050	7087497
Chloroform	ug/g	<0.050	0.050	7087497
Dibromochloromethane	ug/g	<0.050	0.050	7087497
1,2-Dichlorobenzene	ug/g	<0.050	0.050	7087497
1,3-Dichlorobenzene	ug/g	<0.050	0.050	7087497
1,4-Dichlorobenzene	ug/g	<0.050	0.050	7087497
Dichlorodifluoromethane (FREON 12)	ug/g	<0.050	0.050	7087497
1,1-Dichloroethane	ug/g	<0.050	0.050	7087497
1,2-Dichloroethane	ug/g	<0.050	0.050	7087497
1,1-Dichloroethylene	ug/g	<0.050	0.050	7087497
cis-1,2-Dichloroethylene	ug/g	<0.050	0.050	7087497
trans-1,2-Dichloroethylene	ug/g	<0.050	0.050	7087497
1,2-Dichloropropane	ug/g	<0.050	0.050	7087497
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	7087497
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	7087497
Ethylbenzene	ug/g	<0.020	0.020	7087497
Ethylene Dibromide	ug/g	<0.050	0.050	7087497
Hexane	ug/g	<0.050	0.050	7087497
Methylene Chloride(Dichloromethane)	ug/g	<0.050	0.050	7087497
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.50	0.50	7087497
Methyl Isobutyl Ketone	ug/g	<0.50	0.50	7087497
Methyl t-butyl ether (MTBE)	ug/g	<0.050	0.050	7087497
Styrene	ug/g	<0.050	0.050	7087497
1,1,1,2-Tetrachloroethane	ug/g	<0.050	0.050	7087497

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs Job #: C0V8911
Report Date: 2020/12/04

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

BV Labs ID		OHK253		
Sampling Date		2020/11/26		
COC Number		n/a		
	UNITS	BH201/2	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/g	<0.050	0.050	7087497
Tetrachloroethylene	ug/g	<0.050	0.050	7087497
Toluene	ug/g	<0.020	0.020	7087497
1,1,1-Trichloroethane	ug/g	<0.050	0.050	7087497
1,1,2-Trichloroethane	ug/g	<0.050	0.050	7087497
Trichloroethylene	ug/g	<0.050	0.050	7087497
Trichlorofluoromethane (FREON 11)	ug/g	<0.050	0.050	7087497
Vinyl Chloride	ug/g	<0.020	0.020	7087497
p+m-Xylene	ug/g	<0.020	0.020	7087497
o-Xylene	ug/g	<0.020	0.020	7087497
Total Xylenes	ug/g	<0.020	0.020	7087497
F1 (C6-C10)	ug/g	<10	10	7087497
F1 (C6-C10) - BTEX	ug/g	<10	10	7087497
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	7088384
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7088384
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7088384
Reached Baseline at C50	ug/g	Yes		7088384
Surrogate Recovery (%)				
o-Terphenyl	%	85		7088384
4-Bromofluorobenzene	%	88		7087497
D10-o-Xylene	%	89		7087497
D4-1,2-Dichloroethane	%	96		7087497
D8-Toluene	%	101		7087497

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V8911
Report Date: 2020/12/04

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

TEST SUMMARY

BV Labs ID: OHK252
Sample ID: BH201/1B
Matrix: Soil

Collected: 2020/11/26
Shipped:
Received: 2020/11/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	7087823	2020/12/02	2020/12/03	Ann-Marie Stern
Strong Acid Leachable Metals by ICPMS	ICP/MS	7087415	2020/12/02	2020/12/03	Viviana Canzonieri
Moisture	BAL	7085895	N/A	2020/12/01	Mithunaa Sasitheepan

BV Labs ID: OHK253
Sample ID: BH201/2
Matrix: Soil

Collected: 2020/11/26
Shipped:
Received: 2020/11/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7084890	N/A	2020/12/03	Automated Statchk
1,3-Dichloropropene Sum	CALC	7084869	N/A	2020/12/03	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7088384	2020/12/02	2020/12/03	Prabhjot Gulati
Moisture	BAL	7086028	N/A	2020/12/01	Prgya Panchal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7088991	2020/12/02	2020/12/03	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7087497	N/A	2020/12/02	Anna Gabrielyan

BV Labs ID: OHK254
Sample ID: BH203/1B
Matrix: Soil

Collected: 2020/11/26
Shipped:
Received: 2020/11/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	7087572	2020/12/02	2020/12/02	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	7087823	2020/12/02	2020/12/03	Ann-Marie Stern
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7089268	N/A	2020/12/03	Joe Paino
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7088384	2020/12/02	2020/12/03	Prabhjot Gulati
Strong Acid Leachable Metals by ICPMS	ICP/MS	7087415	2020/12/02	2020/12/03	Viviana Canzonieri
Moisture	BAL	7086028	N/A	2020/12/01	Prgya Panchal

BV Labs ID: OHK254 Dup
Sample ID: BH203/1B
Matrix: Soil

Collected: 2020/11/26
Shipped:
Received: 2020/11/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7089268	N/A	2020/12/03	Joe Paino

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V8911
Report Date: 2020/12/04

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	0.3°C

Cooler custody seal was not present.

Results relate only to the items tested.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V8911
Report Date: 2020/12/04

QUALITY ASSURANCE REPORT

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7087497	4-Bromofluorobenzene	2020/12/02	93	60 - 140	94	60 - 140	88	%		
7087497	D10-o-Xylene	2020/12/02	90	60 - 130	89	60 - 130	82	%		
7087497	D4-1,2-Dichloroethane	2020/12/02	101	60 - 140	102	60 - 140	99	%		
7087497	D8-Toluene	2020/12/02	101	60 - 140	102	60 - 140	100	%		
7088384	o-Terphenyl	2020/12/02	90	60 - 130	91	60 - 130	96	%		
7088991	D10-Anthracene	2020/12/03	109	50 - 130	121	50 - 130	116	%		
7088991	D14-Terphenyl (FS)	2020/12/03	104	50 - 130	109	50 - 130	105	%		
7088991	D8-Acenaphthylene	2020/12/03	113	50 - 130	120	50 - 130	112	%		
7089268	1,4-Difluorobenzene	2020/12/03	95	60 - 140	93	60 - 140	95	%		
7089268	4-Bromofluorobenzene	2020/12/03	102	60 - 140	104	60 - 140	102	%		
7089268	D10-o-Xylene	2020/12/03	102	60 - 140	94	60 - 140	92	%		
7089268	D4-1,2-Dichloroethane	2020/12/03	98	60 - 140	99	60 - 140	102	%		
7085895	Moisture	2020/12/01							0.54	20
7087415	Acid Extractable Antimony (Sb)	2020/12/03	99	75 - 125	102	80 - 120	<0.20	ug/g	NC	30
7087415	Acid Extractable Arsenic (As)	2020/12/03	100	75 - 125	102	80 - 120	<1.0	ug/g	NC	30
7087415	Acid Extractable Barium (Ba)	2020/12/03	91	75 - 125	103	80 - 120	<0.50	ug/g	0.85	30
7087415	Acid Extractable Beryllium (Be)	2020/12/03	96	75 - 125	97	80 - 120	<0.20	ug/g	NC	30
7087415	Acid Extractable Boron (B)	2020/12/03	95	75 - 125	97	80 - 120	<5.0	ug/g	NC	30
7087415	Acid Extractable Cadmium (Cd)	2020/12/03	102	75 - 125	103	80 - 120	<0.10	ug/g	NC	30
7087415	Acid Extractable Chromium (Cr)	2020/12/03	100	75 - 125	99	80 - 120	<1.0	ug/g	7.5	30
7087415	Acid Extractable Cobalt (Co)	2020/12/03	101	75 - 125	102	80 - 120	<0.10	ug/g	1.3	30
7087415	Acid Extractable Copper (Cu)	2020/12/03	96	75 - 125	98	80 - 120	<0.50	ug/g	8.5	30
7087415	Acid Extractable Lead (Pb)	2020/12/03	98	75 - 125	104	80 - 120	<1.0	ug/g	6.1	30
7087415	Acid Extractable Mercury (Hg)	2020/12/03	93	75 - 125	99	80 - 120	<0.050	ug/g	NC	30
7087415	Acid Extractable Molybdenum (Mo)	2020/12/03	99	75 - 125	100	80 - 120	<0.50	ug/g	NC	30
7087415	Acid Extractable Nickel (Ni)	2020/12/03	99	75 - 125	102	80 - 120	<0.50	ug/g	4.6	30
7087415	Acid Extractable Selenium (Se)	2020/12/03	103	75 - 125	106	80 - 120	<0.50	ug/g	NC	30
7087415	Acid Extractable Silver (Ag)	2020/12/03	96	75 - 125	98	80 - 120	<0.20	ug/g	NC	30
7087415	Acid Extractable Thallium (Tl)	2020/12/03	97	75 - 125	102	80 - 120	<0.050	ug/g	NC	30
7087415	Acid Extractable Uranium (U)	2020/12/03	98	75 - 125	101	80 - 120	<0.050	ug/g	15	30
7087415	Acid Extractable Vanadium (V)	2020/12/03	100	75 - 125	102	80 - 120	<5.0	ug/g	13	30

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7087415	Acid Extractable Zinc (Zn)	2020/12/03	105	75 - 125	105	80 - 120	<5.0	ug/g	7.2	30
7087497	1,1,1,2-Tetrachloroethane	2020/12/02	91	60 - 140	97	60 - 130	<0.050	ug/g	NC	50
7087497	1,1,1-Trichloroethane	2020/12/02	95	60 - 140	99	60 - 130	<0.050	ug/g	NC	50
7087497	1,1,2,2-Tetrachloroethane	2020/12/02	89	60 - 140	93	60 - 130	<0.050	ug/g	NC	50
7087497	1,1,2-Trichloroethane	2020/12/02	102	60 - 140	100	60 - 130	<0.050	ug/g	NC	50
7087497	1,1-Dichloroethane	2020/12/02	94	60 - 140	98	60 - 130	<0.050	ug/g	NC	50
7087497	1,1-Dichloroethylene	2020/12/02	96	60 - 140	101	60 - 130	<0.050	ug/g	NC	50
7087497	1,2-Dichlorobenzene	2020/12/02	92	60 - 140	97	60 - 130	<0.050	ug/g	NC	50
7087497	1,2-Dichloroethane	2020/12/02	92	60 - 140	96	60 - 130	<0.050	ug/g	NC	50
7087497	1,2-Dichloropropane	2020/12/02	95	60 - 140	98	60 - 130	<0.050	ug/g	NC	50
7087497	1,3-Dichlorobenzene	2020/12/02	93	60 - 140	99	60 - 130	<0.050	ug/g	NC	50
7087497	1,4-Dichlorobenzene	2020/12/02	105	60 - 140	112	60 - 130	<0.050	ug/g	NC	50
7087497	Acetone (2-Propanone)	2020/12/02	90	60 - 140	93	60 - 140	<0.50	ug/g	NC	50
7087497	Benzene	2020/12/02	94	60 - 140	98	60 - 130	<0.020	ug/g	NC	50
7087497	Bromodichloromethane	2020/12/02	96	60 - 140	99	60 - 130	<0.050	ug/g	NC	50
7087497	Bromoform	2020/12/02	83	60 - 140	88	60 - 130	<0.050	ug/g	NC	50
7087497	Bromomethane	2020/12/02	96	60 - 140	101	60 - 140	<0.050	ug/g	NC	50
7087497	Carbon Tetrachloride	2020/12/02	93	60 - 140	98	60 - 130	<0.050	ug/g	NC	50
7087497	Chlorobenzene	2020/12/02	91	60 - 140	97	60 - 130	<0.050	ug/g	NC	50
7087497	Chloroform	2020/12/02	100	60 - 140	103	60 - 130	<0.050	ug/g	NC	50
7087497	cis-1,2-Dichloroethylene	2020/12/02	99	60 - 140	103	60 - 130	<0.050	ug/g	NC	50
7087497	cis-1,3-Dichloropropene	2020/12/02	81	60 - 140	88	60 - 130	<0.030	ug/g	NC	50
7087497	Dibromochloromethane	2020/12/02	88	60 - 140	93	60 - 130	<0.050	ug/g	NC	50
7087497	Dichlorodifluoromethane (FREON 12)	2020/12/02	73	60 - 140	81	60 - 140	<0.050	ug/g	NC	50
7087497	Ethylbenzene	2020/12/02	82	60 - 140	89	60 - 130	<0.020	ug/g	NC	50
7087497	Ethylene Dibromide	2020/12/02	88	60 - 140	93	60 - 130	<0.050	ug/g	NC	50
7087497	F1 (C6-C10) - BTEX	2020/12/02					<10	ug/g	NC	30
7087497	F1 (C6-C10)	2020/12/02	93	60 - 140	96	80 - 120	<10	ug/g	NC	30
7087497	Hexane	2020/12/02	97	60 - 140	101	60 - 130	<0.050	ug/g	NC	50
7087497	Methyl Ethyl Ketone (2-Butanone)	2020/12/02	85	60 - 140	88	60 - 140	<0.50	ug/g	NC	50
7087497	Methyl Isobutyl Ketone	2020/12/02	79	60 - 140	83	60 - 130	<0.50	ug/g	NC	50

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7087497	Methyl t-butyl ether (MTBE)	2020/12/02	84	60 - 140	87	60 - 130	<0.050	ug/g	NC	50
7087497	Methylene Chloride(Dichloromethane)	2020/12/02	110	60 - 140	114	60 - 130	<0.050	ug/g	NC	50
7087497	o-Xylene	2020/12/02	80	60 - 140	87	60 - 130	<0.020	ug/g	NC	50
7087497	p+m-Xylene	2020/12/02	81	60 - 140	88	60 - 130	<0.020	ug/g	NC	50
7087497	Styrene	2020/12/02	87	60 - 140	94	60 - 130	<0.050	ug/g	NC	50
7087497	Tetrachloroethylene	2020/12/02	90	60 - 140	97	60 - 130	<0.050	ug/g	NC	50
7087497	Toluene	2020/12/02	88	60 - 140	94	60 - 130	<0.020	ug/g	NC	50
7087497	Total Xylenes	2020/12/02					<0.020	ug/g	NC	50
7087497	trans-1,2-Dichloroethylene	2020/12/02	102	60 - 140	106	60 - 130	<0.050	ug/g	NC	50
7087497	trans-1,3-Dichloropropene	2020/12/02	82	60 - 140	92	60 - 130	<0.040	ug/g	NC	50
7087497	Trichloroethylene	2020/12/02	103	60 - 140	108	60 - 130	<0.050	ug/g	NC	50
7087497	Trichlorofluoromethane (FREON 11)	2020/12/02	96	60 - 140	101	60 - 130	<0.050	ug/g	NC	50
7087497	Vinyl Chloride	2020/12/02	92	60 - 140	98	60 - 130	<0.020	ug/g	NC	50
7087572	Hot Water Ext. Boron (B)	2020/12/02	106	75 - 125	99	75 - 125	<0.050	ug/g	NC	40
7087823	Chromium (VI)	2020/12/03	82	70 - 130	89	80 - 120	<0.18	ug/g	NC	35
7088384	F2 (C10-C16 Hydrocarbons)	2020/12/03	97	50 - 130	97	80 - 120	<10	ug/g	NC	30
7088384	F3 (C16-C34 Hydrocarbons)	2020/12/03	103	50 - 130	102	80 - 120	<50	ug/g	NC	30
7088384	F4 (C34-C50 Hydrocarbons)	2020/12/03	102	50 - 130	101	80 - 120	<50	ug/g	NC	30
7088991	1-Methylnaphthalene	2020/12/03	99	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
7088991	2-Methylnaphthalene	2020/12/03	97	50 - 130	91	50 - 130	<0.0050	ug/g	11	40
7088991	Acenaphthene	2020/12/03	98	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
7088991	Acenaphthylene	2020/12/03	107	50 - 130	108	50 - 130	<0.0050	ug/g	NC	40
7088991	Anthracene	2020/12/03	105	50 - 130	118	50 - 130	<0.0050	ug/g	NC	40
7088991	Benzo(a)anthracene	2020/12/03	113	50 - 130	119	50 - 130	<0.0050	ug/g	NC	40
7088991	Benzo(a)pyrene	2020/12/03	98	50 - 130	106	50 - 130	<0.0050	ug/g	NC	40
7088991	Benzo(b/j)fluoranthene	2020/12/03	103	50 - 130	114	50 - 130	<0.0050	ug/g	NC	40
7088991	Benzo(g,h,i)perylene	2020/12/03	99	50 - 130	106	50 - 130	<0.0050	ug/g	NC	40
7088991	Benzo(k)fluoranthene	2020/12/03	109	50 - 130	113	50 - 130	<0.0050	ug/g	NC	40
7088991	Chrysene	2020/12/03	113	50 - 130	120	50 - 130	<0.0050	ug/g	NC	40
7088991	Dibenzo(a,h)anthracene	2020/12/03	109	50 - 130	112	50 - 130	<0.0050	ug/g	NC	40
7088991	Fluoranthene	2020/12/03	112	50 - 130	117	50 - 130	<0.0050	ug/g	NC	40

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7088991	Fluorene	2020/12/03	109	50 - 130	111	50 - 130	<0.0050	ug/g	NC	40
7088991	Indeno(1,2,3-cd)pyrene	2020/12/03	109	50 - 130	116	50 - 130	<0.0050	ug/g	NC	40
7088991	Naphthalene	2020/12/03	89	50 - 130	88	50 - 130	<0.0050	ug/g	NC	40
7088991	Phenanthrene	2020/12/03	109	50 - 130	112	50 - 130	<0.0050	ug/g	NC	40
7088991	Pyrene	2020/12/03	110	50 - 130	115	50 - 130	<0.0050	ug/g	NC	40
7089268	Benzene	2020/12/03	104	50 - 140	94	50 - 140	<0.020	ug/g	NC	50
7089268	Ethylbenzene	2020/12/03	109	50 - 140	99	50 - 140	<0.020	ug/g	NC	50
7089268	F1 (C6-C10) - BTEX	2020/12/03					<10	ug/g	NC	30
7089268	F1 (C6-C10)	2020/12/03	106	60 - 140	92	80 - 120	<10	ug/g	NC	30
7089268	o-Xylene	2020/12/03	106	50 - 140	97	50 - 140	<0.020	ug/g	NC	50
7089268	p+m-Xylene	2020/12/03	105	50 - 140	96	50 - 140	<0.040	ug/g	NC	50
7089268	Toluene	2020/12/03	101	50 - 140	90	50 - 140	<0.020	ug/g	NC	50
7089268	Total Xylenes	2020/12/03					<0.040	ug/g	NC	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0V8911
Report Date: 2020/12/04

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Your Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Your C.O.C. #: na

Attention: Munir Ahmad

Soil Engineers Ltd
90 West Beaver Creek Road
Unit 100
Richmond Hill, ON
CANADA L4B 1E7

Report Date: 2020/12/31
Report #: R6468049
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0Y2888
Received: 2020/12/23, 16:09

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Strong Acid Leachable Metals by ICPMS	1	2020/12/29	2020/12/30	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	1	2020/12/29	2020/12/31	CAM SOP-00447	EPA 6020B m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Your C.O.C. #: na

Attention: Munir Ahmad

Soil Engineers Ltd
90 West Beaver Creek Road
Unit 100
Richmond Hill, ON
CANADA L4B 1E7

Report Date: 2020/12/31
Report #: R6468049
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0Y2888
Received: 2020/12/23, 16:09

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas Laboratories
31 Dec 2020 14:54:46

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: Antonella.Brasil@bvlabs.com
Phone# (905)817-5817

This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C0Y2888
Report Date: 2020/12/31

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

O.REG 153 ICPMS METALS (SOIL)

BV Labs ID		OMJ043		OMJ044		
Sampling Date		2020/12/22		2020/12/22		
COC Number		na		na		
	UNITS	S1	QC Batch	S2	RDL	QC Batch
Metals						
Acid Extractable Antimony (Sb)	ug/g	0.83	7129073	1.1	0.20	7129263
Acid Extractable Arsenic (As)	ug/g	2.0	7129073	1.7	1.0	7129263
Acid Extractable Barium (Ba)	ug/g	63	7129073	55	0.50	7129263
Acid Extractable Beryllium (Be)	ug/g	0.36	7129073	0.34	0.20	7129263
Acid Extractable Boron (B)	ug/g	6.0	7129073	5.3	5.0	7129263
Acid Extractable Cadmium (Cd)	ug/g	0.77	7129073	0.79	0.10	7129263
Acid Extractable Chromium (Cr)	ug/g	18	7129073	15	1.0	7129263
Acid Extractable Cobalt (Co)	ug/g	5.3	7129073	4.8	0.10	7129263
Acid Extractable Copper (Cu)	ug/g	51	7129073	28	0.50	7129263
Acid Extractable Lead (Pb)	ug/g	180	7129073	110	1.0	7129263
Acid Extractable Molybdenum (Mo)	ug/g	1.0	7129073	0.57	0.50	7129263
Acid Extractable Nickel (Ni)	ug/g	12	7129073	10	0.50	7129263
Acid Extractable Selenium (Se)	ug/g	<0.50	7129073	<0.50	0.50	7129263
Acid Extractable Silver (Ag)	ug/g	<0.20	7129073	<0.20	0.20	7129263
Acid Extractable Thallium (Tl)	ug/g	0.091	7129073	0.083	0.050	7129263
Acid Extractable Uranium (U)	ug/g	0.37	7129073	0.42	0.050	7129263
Acid Extractable Vanadium (V)	ug/g	23	7129073	25	5.0	7129263
Acid Extractable Zinc (Zn)	ug/g	230	7129073	99	5.0	7129263
Acid Extractable Mercury (Hg)	ug/g	0.051	7129073	<0.050	0.050	7129263

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0Y2888
Report Date: 2020/12/31

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

TEST SUMMARY

BV Labs ID: OMJ043
Sample ID: S1
Matrix: Soil

Collected: 2020/12/22
Shipped:
Received: 2020/12/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	7129073	2020/12/29	2020/12/31	Viviana Canzonieri

BV Labs ID: OMJ044
Sample ID: S2
Matrix: Soil

Collected: 2020/12/22
Shipped:
Received: 2020/12/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	7129263	2020/12/29	2020/12/30	Viviana Canzonieri

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0Y2888
Report Date: 2020/12/31

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	0.0°C

Results relate only to the items tested.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0Y2888
Report Date: 2020/12/31

QUALITY ASSURANCE REPORT

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7129073	Acid Extractable Antimony (Sb)	2020/12/31	102	75 - 125	99	80 - 120	<0.20	ug/g	NC	30
7129073	Acid Extractable Arsenic (As)	2020/12/31	104	75 - 125	99	80 - 120	<1.0	ug/g	1.4	30
7129073	Acid Extractable Barium (Ba)	2020/12/31	NC	75 - 125	95	80 - 120	<0.50	ug/g	1.5	30
7129073	Acid Extractable Beryllium (Be)	2020/12/31	96	75 - 125	97	80 - 120	<0.20	ug/g	2.5	30
7129073	Acid Extractable Boron (B)	2020/12/31	91	75 - 125	95	80 - 120	<5.0	ug/g	3.9	30
7129073	Acid Extractable Cadmium (Cd)	2020/12/31	103	75 - 125	97	80 - 120	<0.10	ug/g	NC	30
7129073	Acid Extractable Chromium (Cr)	2020/12/31	100	75 - 125	95	80 - 120	<1.0	ug/g	4.6	30
7129073	Acid Extractable Cobalt (Co)	2020/12/31	102	75 - 125	97	80 - 120	<0.10	ug/g	3.5	30
7129073	Acid Extractable Copper (Cu)	2020/12/31	98	75 - 125	96	80 - 120	<0.50	ug/g	0.23	30
7129073	Acid Extractable Lead (Pb)	2020/12/31	100	75 - 125	101	80 - 120	<1.0	ug/g	0.60	30
7129073	Acid Extractable Mercury (Hg)	2020/12/31	88	75 - 125	96	80 - 120	<0.050	ug/g	NC	30
7129073	Acid Extractable Molybdenum (Mo)	2020/12/31	103	75 - 125	96	80 - 120	<0.50	ug/g	3.1	30
7129073	Acid Extractable Nickel (Ni)	2020/12/31	101	75 - 125	98	80 - 120	<0.50	ug/g	7.0	30
7129073	Acid Extractable Selenium (Se)	2020/12/31	107	75 - 125	103	80 - 120	<0.50	ug/g	NC	30
7129073	Acid Extractable Silver (Ag)	2020/12/31	107	75 - 125	103	80 - 120	<0.20	ug/g	NC	30
7129073	Acid Extractable Thallium (Tl)	2020/12/31	100	75 - 125	101	80 - 120	<0.050	ug/g	2.1	30
7129073	Acid Extractable Uranium (U)	2020/12/31	102	75 - 125	101	80 - 120	<0.050	ug/g	1.2	30
7129073	Acid Extractable Vanadium (V)	2020/12/31	101	75 - 125	94	80 - 120	<5.0	ug/g	5.4	30
7129073	Acid Extractable Zinc (Zn)	2020/12/31	NC	75 - 125	98	80 - 120	<5.0	ug/g	3.1	30
7129263	Acid Extractable Antimony (Sb)	2020/12/30	88	75 - 125	102	80 - 120	<0.20	ug/g	NC	30
7129263	Acid Extractable Arsenic (As)	2020/12/30	95	75 - 125	103	80 - 120	<1.0	ug/g	0.51	30
7129263	Acid Extractable Barium (Ba)	2020/12/30	NC	75 - 125	103	80 - 120	<0.50	ug/g	2.6	30
7129263	Acid Extractable Beryllium (Be)	2020/12/30	95	75 - 125	99	80 - 120	<0.20	ug/g	3.3	30
7129263	Acid Extractable Boron (B)	2020/12/30	96	75 - 125	100	80 - 120	<5.0	ug/g	0.47	30
7129263	Acid Extractable Cadmium (Cd)	2020/12/30	96	75 - 125	102	80 - 120	<0.10	ug/g	NC	30
7129263	Acid Extractable Chromium (Cr)	2020/12/30	97	75 - 125	101	80 - 120	<1.0	ug/g	0.22	30
7129263	Acid Extractable Cobalt (Co)	2020/12/30	92	75 - 125	100	80 - 120	<0.10	ug/g	0.010	30
7129263	Acid Extractable Copper (Cu)	2020/12/30	91	75 - 125	102	80 - 120	<0.50	ug/g	0.16	30
7129263	Acid Extractable Lead (Pb)	2020/12/30	90	75 - 125	101	80 - 120	<1.0	ug/g	0.54	30
7129263	Acid Extractable Mercury (Hg)	2020/12/30	84	75 - 125	95	80 - 120	<0.050	ug/g	NC	30
7129263	Acid Extractable Molybdenum (Mo)	2020/12/30	93	75 - 125	99	80 - 120	<0.50	ug/g	2.2	30

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0Y2888
Report Date: 2020/12/31

QUALITY ASSURANCE REPORT(CONT'D)

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7129263	Acid Extractable Nickel (Ni)	2020/12/30	96	75 - 125	103	80 - 120	<0.50	ug/g	0.67	30
7129263	Acid Extractable Selenium (Se)	2020/12/30	98	75 - 125	105	80 - 120	<0.50	ug/g	NC	30
7129263	Acid Extractable Silver (Ag)	2020/12/30	95	75 - 125	102	80 - 120	<0.20	ug/g	NC	30
7129263	Acid Extractable Thallium (Tl)	2020/12/30	89	75 - 125	101	80 - 120	<0.050	ug/g	5.0	30
7129263	Acid Extractable Uranium (U)	2020/12/30	93	75 - 125	102	80 - 120	<0.050	ug/g	2.4	30
7129263	Acid Extractable Vanadium (V)	2020/12/30	NC	75 - 125	101	80 - 120	<5.0	ug/g	0.085	30
7129263	Acid Extractable Zinc (Zn)	2020/12/30	NC	75 - 125	106	80 - 120	<5.0	ug/g	7.4	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0Y2888
Report Date: 2020/12/31

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: OG

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Soil Engineers Ltd.
CONSULTING ENGINEERS
GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE
90 WEST BEAVER CREEK ROAD, SUITE #100, RICHMOND HILL, ONTARIO L4B 1E7 · TEL (416) 754-8515 · FAX (905) 881-8335

BARRIE	MISSISSAUGA	OSHAWA	NEWMARKET	GRAVENHURST	PETERBOROUGH	HAMILTON
TEL: (705) 721-7863	TEL: (905) 542-7605	TEL: (905) 440-2040	TEL: (905) 853-0647	TEL: (705) 684-4242	TEL: (905) 440-2040	TEL: (905) 777-7956
FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (905) 881-8335	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

APPENDIX 'D'

CERTIFICATE OF ANALYSIS
(GROUNDWATER SAMPLES)

REFERENCE NO. 2007-E048

Your Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Your C.O.C. #: N/A

Attention: Munir Ahmad

Soil Engineers Ltd
90 West Beaver Creek Road
Unit 100
Richmond Hill, ON
CANADA L4B 1E7

Report Date: 2020/12/14
Report #: R6448866
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0W7005
Received: 2020/12/08, 15:05

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	3	N/A	2020/12/11	CAM SOP-00301	EPA 8270D m
Methylnaphthalene Sum	1	N/A	2020/12/12	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	6	N/A	2020/12/11		EPA 8260C m
Chromium (VI) in Water	4	N/A	2020/12/11	CAM SOP-00436	EPA 7199 m
Petroleum Hydrocarbons F2-F4 in Water (1)	4	2020/12/10	2020/12/11	CAM SOP-00316	CCME PHC-CWS m
Mercury	4	2020/12/10	2020/12/10	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	5	N/A	2020/12/10	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM)	4	2020/12/10	2020/12/11	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs	4	N/A	2020/12/10	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Water	2	N/A	2020/12/11	CAM SOP-00228	EPA 8260C m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Your C.O.C. #: N/A

Attention: Munir Ahmad

Soil Engineers Ltd
90 West Beaver Creek Road
Unit 100
Richmond Hill, ON
CANADA L4B 1E7

Report Date: 2020/12/14
Report #: R6448866
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0W7005
Received: 2020/12/08, 15:05

(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas Laboratories
14 Dec 2020 14:27:33

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: Antonella.Brasil@bvlabs.com
Phone# (905)817-5817

==========

This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

O.REG 153 DISSOLVED ICPMS METALS (WATER)

BV Labs ID		OJC592		
Sampling Date		2020/12/07		
COC Number		N/A		
	UNITS	DUP W1	RDL	QC Batch
Metals				
Dissolved Antimony (Sb)	ug/L	1.0	0.50	7100460
Dissolved Arsenic (As)	ug/L	1.5	1.0	7100460
Dissolved Barium (Ba)	ug/L	160	2.0	7100460
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7100460
Dissolved Boron (B)	ug/L	180	10	7100460
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7100460
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7100460
Dissolved Cobalt (Co)	ug/L	0.74	0.50	7100460
Dissolved Copper (Cu)	ug/L	3.1	0.90	7100460
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7100460
Dissolved Molybdenum (Mo)	ug/L	13	0.50	7100460
Dissolved Nickel (Ni)	ug/L	2.2	1.0	7100460
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7100460
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7100460
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7100460
Dissolved Uranium (U)	ug/L	12	0.10	7100460
Dissolved Vanadium (V)	ug/L	0.80	0.50	7100460
Dissolved Zinc (Zn)	ug/L	6.5	5.0	7100460

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

O.REG 153 METALS PACKAGE (WATER)

BV Labs ID		OJC588	OJC589	OJC590	OJC591			OJC591		
Sampling Date		2020/12/07	2020/12/07	2020/12/07	2020/12/07			2020/12/07		
COC Number		N/A	N/A	N/A	N/A			N/A		
	UNITS	MW201	MW202	MW206	MW207	RDL	QC Batch	MW207 Lab-Dup	RDL	QC Batch
Metals										
Chromium (VI)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7101286	<0.50	0.50	7101286
Mercury (Hg)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7102044			
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	0.91	0.50	7100460			
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	<1.0	1.4	1.0	7100460			
Dissolved Barium (Ba)	ug/L	610	190	110	150	2.0	7100460			
Dissolved Beryllium (Be)	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	7100460			
Dissolved Boron (B)	ug/L	19	120	22	180	10	7100460			
Dissolved Cadmium (Cd)	ug/L	<0.090	<0.090	<0.090	<0.090	0.090	7100460			
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	7100460			
Dissolved Cobalt (Co)	ug/L	1.7	3.5	<0.50	0.74	0.50	7100460			
Dissolved Copper (Cu)	ug/L	3.4	4.0	2.3	1.2	0.90	7100460			
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100460			
Dissolved Molybdenum (Mo)	ug/L	1.2	12	3.1	13	0.50	7100460			
Dissolved Nickel (Ni)	ug/L	5.3	4.1	<1.0	2.1	1.0	7100460			
Dissolved Selenium (Se)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	7100460			
Dissolved Silver (Ag)	ug/L	<0.090	<0.090	<0.090	<0.090	0.090	7100460			
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7100460			
Dissolved Uranium (U)	ug/L	1.9	2.9	1.4	12	0.10	7100460			
Dissolved Vanadium (V)	ug/L	1.2	0.70	0.97	0.80	0.50	7100460			
Dissolved Zinc (Zn)	ug/L	<5.0	5.6	<5.0	5.7	5.0	7100460			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

O.REG 153 PAHS (WATER)

BV Labs ID		OJC588	OJC589	OJC590	OJC591		
Sampling Date		2020/12/07	2020/12/07	2020/12/07	2020/12/07		
COC Number		N/A	N/A	N/A	N/A		
	UNITS	MW201	MW202	MW206	MW207	RDL	QC Batch
Calculated Parameters							
Methylnaphthalene, 2-(1-)	ug/L	<0.071	<0.071	<0.071	<0.071	0.071	7099626
Polyaromatic Hydrocarbons							
Acenaphthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Benzo(a)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Benzo(a)pyrene	ug/L	<0.0090	<0.0090	<0.0090	<0.0090	0.0090	7103817
Benzo(b/j)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Chrysene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Dibenzo(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Naphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Phenanthrene	ug/L	<0.030	<0.030	0.040	<0.030	0.030	7103817
Pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	7103817
Surrogate Recovery (%)							
D10-Anthracene	%	111	122	114	111		7103817
D14-Terphenyl (FS)	%	109	102	110	89		7103817
D8-Acenaphthylene	%	103	108	103	105		7103817

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		OJC588	OJC589	OJC590	OJC591		
Sampling Date		2020/12/07	2020/12/07	2020/12/07	2020/12/07		
COC Number		N/A	N/A	N/A	N/A		
	UNITS	MW201	MW202	MW206	MW207	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7099628
Volatile Organics							
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	10	7100305
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
Bromodichloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
Bromoform	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7100305
Bromomethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
Carbon Tetrachloride	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
Chlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
Chloroform	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
Dibromochloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7100305
1,1-Dichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
1,2-Dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
1,1-Dichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
1,2-Dichloropropane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	<0.30	<0.30	0.30	7100305
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	7100305
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
Hexane	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7100305
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	7100305
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	<10	<10	10	7100305
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	7100305
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
Styrene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
Tetrachloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

O.REG 153 VOCS BY HS & F1-F4 (WATER)

BV Labs ID		OJC588	OJC589	OJC590	OJC591		
Sampling Date		2020/12/07	2020/12/07	2020/12/07	2020/12/07		
COC Number		N/A	N/A	N/A	N/A		
	UNITS	MW201	MW202	MW206	MW207	RDL	QC Batch
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
Trichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7100305
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7100305
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	7100305
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	7100305
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	100	7103869
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	200	7103869
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	200	7103869
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes		7103869
Surrogate Recovery (%)							
o-Terphenyl	%	96	99	97	99		7103869
4-Bromofluorobenzene	%	100	99	102	100		7100305
D4-1,2-Dichloroethane	%	107	108	123	106		7100305
D8-Toluene	%	101	96	91	108		7100305

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

O.REG 153 VOCS BY HS (WATER)

BV Labs ID		OJC593	OJC594		
Sampling Date		2020/12/07	2020/12/07		
COC Number		N/A	N/A		
	UNITS	DUP W2	TRIP BLANK	RDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50	0.50	7099628
Volatile Organics					
Acetone (2-Propanone)	ug/L	<10	<10	10	7099833
Benzene	ug/L	<0.20	<0.20	0.20	7099833
Bromodichloromethane	ug/L	<0.50	<0.50	0.50	7099833
Bromoform	ug/L	<1.0	<1.0	1.0	7099833
Bromomethane	ug/L	<0.50	<0.50	0.50	7099833
Carbon Tetrachloride	ug/L	<0.19	<0.19	0.19	7099833
Chlorobenzene	ug/L	<0.20	<0.20	0.20	7099833
Chloroform	ug/L	<0.20	<0.20	0.20	7099833
Dibromochloromethane	ug/L	<0.50	<0.50	0.50	7099833
1,2-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	7099833
1,3-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	7099833
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	7099833
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	1.0	7099833
1,1-Dichloroethane	ug/L	<0.20	<0.20	0.20	7099833
1,2-Dichloroethane	ug/L	<0.49	<0.49	0.49	7099833
1,1-Dichloroethylene	ug/L	<0.20	<0.20	0.20	7099833
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	0.50	7099833
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	0.50	7099833
1,2-Dichloropropane	ug/L	<0.20	<0.20	0.20	7099833
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	0.30	7099833
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	0.40	7099833
Ethylbenzene	ug/L	<0.20	<0.20	0.20	7099833
Ethylene Dibromide	ug/L	<0.19	<0.19	0.19	7099833
Hexane	ug/L	<1.0	<1.0	1.0	7099833
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	7099833
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	10	7099833
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	5.0	7099833
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	0.50	7099833
Styrene	ug/L	<0.40	<0.40	0.40	7099833
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	0.50	7099833
1,1,2,2-Tetrachloroethane	ug/L	<0.40	<0.40	0.40	7099833
Tetrachloroethylene	ug/L	<0.20	<0.20	0.20	7099833

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

O.REG 153 VOCS BY HS (WATER)

BV Labs ID		OJC593	OJC594		
Sampling Date		2020/12/07	2020/12/07		
COC Number		N/A	N/A		
	UNITS	DUP W2	TRIP BLANK	RDL	QC Batch
Toluene	ug/L	<0.20	<0.20	0.20	7099833
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	0.20	7099833
1,1,2-Trichloroethane	ug/L	<0.40	<0.40	0.40	7099833
Trichloroethylene	ug/L	<0.20	<0.20	0.20	7099833
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	0.50	7099833
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	7099833
p+m-Xylene	ug/L	<0.20	<0.20	0.20	7099833
o-Xylene	ug/L	<0.20	<0.20	0.20	7099833
Total Xylenes	ug/L	<0.20	<0.20	0.20	7099833
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	95	96		7099833
D4-1,2-Dichloroethane	%	87	88		7099833
D8-Toluene	%	96	96		7099833

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

TEST SUMMARY

BV Labs ID: OJC588
Sample ID: MW201
Matrix: Water

Collected: 2020/12/07
Shipped:
Received: 2020/12/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7099626	N/A	2020/12/11	Automated Statchk
1,3-Dichloropropene Sum	CALC	7099628	N/A	2020/12/11	Automated Statchk
Chromium (VI) in Water	IC	7101286	N/A	2020/12/11	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7103869	2020/12/10	2020/12/11	Prabhjot Gulati
Mercury	CV/AA	7102044	2020/12/10	2020/12/10	Prempal Bhatti
Dissolved Metals by ICPMS	ICP/MS	7100460	N/A	2020/12/10	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	7103817	2020/12/10	2020/12/11	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7100305	N/A	2020/12/10	Denis Reid

BV Labs ID: OJC589
Sample ID: MW202
Matrix: Water

Collected: 2020/12/07
Shipped:
Received: 2020/12/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7099626	N/A	2020/12/11	Automated Statchk
1,3-Dichloropropene Sum	CALC	7099628	N/A	2020/12/11	Automated Statchk
Chromium (VI) in Water	IC	7101286	N/A	2020/12/11	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7103869	2020/12/10	2020/12/11	Prabhjot Gulati
Mercury	CV/AA	7102044	2020/12/10	2020/12/10	Prempal Bhatti
Dissolved Metals by ICPMS	ICP/MS	7100460	N/A	2020/12/10	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	7103817	2020/12/10	2020/12/11	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7100305	N/A	2020/12/10	Denis Reid

BV Labs ID: OJC590
Sample ID: MW206
Matrix: Water

Collected: 2020/12/07
Shipped:
Received: 2020/12/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7099626	N/A	2020/12/12	Automated Statchk
1,3-Dichloropropene Sum	CALC	7099628	N/A	2020/12/11	Automated Statchk
Chromium (VI) in Water	IC	7101286	N/A	2020/12/11	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7103869	2020/12/10	2020/12/11	Prabhjot Gulati
Mercury	CV/AA	7102044	2020/12/10	2020/12/10	Prempal Bhatti
Dissolved Metals by ICPMS	ICP/MS	7100460	N/A	2020/12/10	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	7103817	2020/12/10	2020/12/11	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7100305	N/A	2020/12/10	Denis Reid

BV Labs ID: OJC591
Sample ID: MW207
Matrix: Water

Collected: 2020/12/07
Shipped:
Received: 2020/12/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7099626	N/A	2020/12/11	Automated Statchk
1,3-Dichloropropene Sum	CALC	7099628	N/A	2020/12/11	Automated Statchk

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

TEST SUMMARY

BV Labs ID: OJC591
Sample ID: MW207
Matrix: Water

Collected: 2020/12/07
Shipped:
Received: 2020/12/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	7101286	N/A	2020/12/11	Lang Le
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7103869	2020/12/10	2020/12/11	Prabhjot Gulati
Mercury	CV/AA	7102044	2020/12/10	2020/12/10	Prempal Bhatti
Dissolved Metals by ICPMS	ICP/MS	7100460	N/A	2020/12/10	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	7103817	2020/12/10	2020/12/11	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7100305	N/A	2020/12/10	Denis Reid

BV Labs ID: OJC591 Dup
Sample ID: MW207
Matrix: Water

Collected: 2020/12/07
Shipped:
Received: 2020/12/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	7101286	N/A	2020/12/11	Lang Le

BV Labs ID: OJC592
Sample ID: DUP W1
Matrix: Water

Collected: 2020/12/07
Shipped:
Received: 2020/12/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	7100460	N/A	2020/12/10	Arefa Dabhad

BV Labs ID: OJC593
Sample ID: DUP W2
Matrix: Water

Collected: 2020/12/07
Shipped:
Received: 2020/12/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7099628	N/A	2020/12/11	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	7099833	N/A	2020/12/11	Chandni Khawas

BV Labs ID: OJC594
Sample ID: TRIP BLANK
Matrix: Water

Collected: 2020/12/07
Shipped:
Received: 2020/12/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7099628	N/A	2020/12/11	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	7099833	N/A	2020/12/11	Chandni Khawas

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.3°C

Cooler custody seal was present and intact.

Results relate only to the items tested.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BUREAU VERITAS

BV Labs Job #: C0W7005
Report Date: 2020/12/14

QUALITY ASSURANCE REPORT

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7099833	4-Bromofluorobenzene	2020/12/10	100	70 - 130	101	70 - 130	100	%		
7099833	D4-1,2-Dichloroethane	2020/12/10	105	70 - 130	101	70 - 130	100	%		
7099833	D8-Toluene	2020/12/10	101	70 - 130	100	70 - 130	99	%		
7100305	4-Bromofluorobenzene	2020/12/10	105	70 - 130	103	70 - 130	87	%		
7100305	D4-1,2-Dichloroethane	2020/12/10	105	70 - 130	102	70 - 130	103	%		
7100305	D8-Toluene	2020/12/10	95	70 - 130	109	70 - 130	97	%		
7103817	D10-Anthracene	2020/12/11	118	50 - 130	124	50 - 130	119	%		
7103817	D14-Terphenyl (FS)	2020/12/11	118	50 - 130	128	50 - 130	114	%		
7103817	D8-Acenaphthylene	2020/12/11	108	50 - 130	109	50 - 130	113	%		
7103869	o-Terphenyl	2020/12/11	104	60 - 130	104	60 - 130	101	%		
7099833	1,1,1,2-Tetrachloroethane	2020/12/10	97	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7099833	1,1,1-Trichloroethane	2020/12/10	93	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
7099833	1,1,2,2-Tetrachloroethane	2020/12/10	100	70 - 130	91	70 - 130	<0.40	ug/L	NC	30
7099833	1,1,2-Trichloroethane	2020/12/10	102	70 - 130	95	70 - 130	<0.40	ug/L	NC	30
7099833	1,1-Dichloroethane	2020/12/10	88	70 - 130	90	70 - 130	<0.20	ug/L	NC	30
7099833	1,1-Dichloroethylene	2020/12/10	89	70 - 130	92	70 - 130	<0.20	ug/L	NC	30
7099833	1,2-Dichlorobenzene	2020/12/10	95	70 - 130	92	70 - 130	<0.40	ug/L	NC	30
7099833	1,2-Dichloroethane	2020/12/10	94	70 - 130	91	70 - 130	<0.49	ug/L	NC	30
7099833	1,2-Dichloropropane	2020/12/10	96	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
7099833	1,3-Dichlorobenzene	2020/12/10	92	70 - 130	92	70 - 130	<0.40	ug/L	NC	30
7099833	1,4-Dichlorobenzene	2020/12/10	107	70 - 130	106	70 - 130	<0.40	ug/L	NC	30
7099833	Acetone (2-Propanone)	2020/12/10	109	60 - 140	101	60 - 140	<10	ug/L	NC	30
7099833	Benzene	2020/12/10	89	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
7099833	Bromodichloromethane	2020/12/10	99	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
7099833	Bromoform	2020/12/10	101	70 - 130	94	70 - 130	<1.0	ug/L	NC	30
7099833	Bromomethane	2020/12/10	88	60 - 140	87	60 - 140	<0.50	ug/L	NC	30
7099833	Carbon Tetrachloride	2020/12/10	90	70 - 130	93	70 - 130	<0.19	ug/L	NC	30
7099833	Chlorobenzene	2020/12/10	95	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
7099833	Chloroform	2020/12/10	93	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
7099833	cis-1,2-Dichloroethylene	2020/12/10	94	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
7099833	cis-1,3-Dichloropropene	2020/12/10	96	70 - 130	91	70 - 130	<0.30	ug/L	NC	30

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7099833	Dibromochloromethane	2020/12/10	98	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
7099833	Dichlorodifluoromethane (FREON 12)	2020/12/10	71	60 - 140	71	60 - 140	<1.0	ug/L		
7099833	Ethylbenzene	2020/12/10	89	70 - 130	89	70 - 130	<0.20	ug/L	NC	30
7099833	Ethylene Dibromide	2020/12/10	98	70 - 130	91	70 - 130	<0.19	ug/L	NC	30
7099833	Hexane	2020/12/10	87	70 - 130	91	70 - 130	<1.0	ug/L		
7099833	Methyl Ethyl Ketone (2-Butanone)	2020/12/10	111	60 - 140	103	60 - 140	<10	ug/L	NC	30
7099833	Methyl Isobutyl Ketone	2020/12/10	108	70 - 130	102	70 - 130	<5.0	ug/L	NC	30
7099833	Methyl t-butyl ether (MTBE)	2020/12/10	90	70 - 130	89	70 - 130	<0.50	ug/L	NC	30
7099833	Methylene Chloride(Dichloromethane)	2020/12/10	105	70 - 130	104	70 - 130	<2.0	ug/L	NC	30
7099833	o-Xylene	2020/12/10	89	70 - 130	90	70 - 130	<0.20	ug/L	NC	30
7099833	p+m-Xylene	2020/12/10	92	70 - 130	93	70 - 130	<0.20	ug/L	NC	30
7099833	Styrene	2020/12/10	100	70 - 130	100	70 - 130	<0.40	ug/L	NC	30
7099833	Tetrachloroethylene	2020/12/10	85	70 - 130	87	70 - 130	<0.20	ug/L	NC	30
7099833	Toluene	2020/12/10	87	70 - 130	87	70 - 130	<0.20	ug/L	NC	30
7099833	Total Xylenes	2020/12/10					<0.20	ug/L	NC	30
7099833	trans-1,2-Dichloroethylene	2020/12/10	90	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7099833	trans-1,3-Dichloropropene	2020/12/10	107	70 - 130	96	70 - 130	<0.40	ug/L	NC	30
7099833	Trichloroethylene	2020/12/10	94	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
7099833	Trichlorofluoromethane (FREON 11)	2020/12/10	86	70 - 130	88	70 - 130	<0.50	ug/L		
7099833	Vinyl Chloride	2020/12/10	83	70 - 130	86	70 - 130	<0.20	ug/L	NC	30
7100305	1,1,1,2-Tetrachloroethane	2020/12/10	94	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
7100305	1,1,1-Trichloroethane	2020/12/10	96	70 - 130	105	70 - 130	<0.20	ug/L	NC	30
7100305	1,1,2,2-Tetrachloroethane	2020/12/10	99	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
7100305	1,1,2-Trichloroethane	2020/12/10	91	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
7100305	1,1-Dichloroethane	2020/12/10	83	70 - 130	88	70 - 130	<0.20	ug/L	NC	30
7100305	1,1-Dichloroethylene	2020/12/10	85	70 - 130	104	70 - 130	<0.20	ug/L	NC	30
7100305	1,2-Dichlorobenzene	2020/12/10	93	70 - 130	97	70 - 130	<0.50	ug/L	NC	30
7100305	1,2-Dichloroethane	2020/12/10	101	70 - 130	90	70 - 130	<0.50	ug/L	NC	30
7100305	1,2-Dichloropropane	2020/12/10	87	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
7100305	1,3-Dichlorobenzene	2020/12/10	93	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
7100305	1,4-Dichlorobenzene	2020/12/10	110	70 - 130	110	70 - 130	<0.50	ug/L	NC	30

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7100305	Acetone (2-Propanone)	2020/12/10	115	60 - 140	99	60 - 140	<10	ug/L	NC	30
7100305	Benzene	2020/12/10	90	70 - 130	93	70 - 130	<0.20	ug/L	NC	30
7100305	Bromodichloromethane	2020/12/10	88	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
7100305	Bromoform	2020/12/10	97	70 - 130	98	70 - 130	<1.0	ug/L	NC	30
7100305	Bromomethane	2020/12/10	86	60 - 140	90	60 - 140	<0.50	ug/L	NC	30
7100305	Carbon Tetrachloride	2020/12/10	93	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
7100305	Chlorobenzene	2020/12/10	92	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
7100305	Chloroform	2020/12/10	97	70 - 130	90	70 - 130	<0.20	ug/L	NC	30
7100305	cis-1,2-Dichloroethylene	2020/12/10	98	70 - 130	91	70 - 130	<0.50	ug/L	NC	30
7100305	cis-1,3-Dichloropropene	2020/12/10	93	70 - 130	94	70 - 130	<0.30	ug/L	NC	30
7100305	Dibromochloromethane	2020/12/10	84	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
7100305	Dichlorodifluoromethane (FREON 12)	2020/12/10	62	60 - 140	80	60 - 140	<1.0	ug/L	NC	30
7100305	Ethylbenzene	2020/12/10	89	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
7100305	Ethylene Dibromide	2020/12/10	94	70 - 130	92	70 - 130	<0.20	ug/L	NC	30
7100305	F1 (C6-C10) - BTEX	2020/12/10					<25	ug/L	NC	30
7100305	F1 (C6-C10)	2020/12/10	93	60 - 140	100	60 - 140	<25	ug/L	NC	30
7100305	Hexane	2020/12/10	87	70 - 130	97	70 - 130	<1.0	ug/L	NC	30
7100305	Methyl Ethyl Ketone (2-Butanone)	2020/12/10	130	60 - 140	92	60 - 140	<10	ug/L	NC	30
7100305	Methyl Isobutyl Ketone	2020/12/10	95	70 - 130	89	70 - 130	<5.0	ug/L	NC	30
7100305	Methyl t-butyl ether (MTBE)	2020/12/10	91	70 - 130	87	70 - 130	<0.50	ug/L	NC	30
7100305	Methylene Chloride(Dichloromethane)	2020/12/10	95	70 - 130	98	70 - 130	<2.0	ug/L	NC	30
7100305	o-Xylene	2020/12/10	92	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
7100305	p+m-Xylene	2020/12/10	92	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
7100305	Styrene	2020/12/10	100	70 - 130	105	70 - 130	<0.50	ug/L	NC	30
7100305	Tetrachloroethylene	2020/12/10	80	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
7100305	Toluene	2020/12/10	79	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
7100305	Total Xylenes	2020/12/10					<0.20	ug/L	NC	30
7100305	trans-1,2-Dichloroethylene	2020/12/10	93	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7100305	trans-1,3-Dichloropropene	2020/12/10	95	70 - 130	97	70 - 130	<0.40	ug/L	NC	30
7100305	Trichloroethylene	2020/12/10	92	70 - 130	102	70 - 130	<0.20	ug/L	NC	30
7100305	Trichlorofluoromethane (FREON 11)	2020/12/10	89	70 - 130	98	70 - 130	<0.50	ug/L	NC	30

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7100305	Vinyl Chloride	2020/12/10	80	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
7100460	Dissolved Antimony (Sb)	2020/12/10	107	80 - 120	104	80 - 120	<0.50	ug/L	NC	20
7100460	Dissolved Arsenic (As)	2020/12/10	103	80 - 120	101	80 - 120	<1.0	ug/L	1.1	20
7100460	Dissolved Barium (Ba)	2020/12/10	100	80 - 120	102	80 - 120	<2.0	ug/L	2.6	20
7100460	Dissolved Beryllium (Be)	2020/12/10	100	80 - 120	99	80 - 120	<0.40	ug/L	NC	20
7100460	Dissolved Boron (B)	2020/12/10	98	80 - 120	96	80 - 120	<10	ug/L	3.5	20
7100460	Dissolved Cadmium (Cd)	2020/12/10	103	80 - 120	103	80 - 120	<0.090	ug/L	NC	20
7100460	Dissolved Chromium (Cr)	2020/12/10	102	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
7100460	Dissolved Cobalt (Co)	2020/12/10	98	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
7100460	Dissolved Copper (Cu)	2020/12/10	98	80 - 120	100	80 - 120	<0.90	ug/L	NC	20
7100460	Dissolved Lead (Pb)	2020/12/10	99	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
7100460	Dissolved Molybdenum (Mo)	2020/12/10	102	80 - 120	99	80 - 120	<0.50	ug/L	7.9	20
7100460	Dissolved Nickel (Ni)	2020/12/10	98	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
7100460	Dissolved Selenium (Se)	2020/12/10	103	80 - 120	105	80 - 120	<2.0	ug/L	NC	20
7100460	Dissolved Silver (Ag)	2020/12/10	93	80 - 120	103	80 - 120	<0.090	ug/L	NC	20
7100460	Dissolved Thallium (Tl)	2020/12/10	100	80 - 120	107	80 - 120	<0.050	ug/L	NC	20
7100460	Dissolved Uranium (U)	2020/12/10	104	80 - 120	106	80 - 120	<0.10	ug/L	2.5	20
7100460	Dissolved Vanadium (V)	2020/12/10	101	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
7100460	Dissolved Zinc (Zn)	2020/12/10	102	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
7101286	Chromium (VI)	2020/12/11	98	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7102044	Mercury (Hg)	2020/12/10	95	75 - 125	98	80 - 120	<0.10	ug/L	NC	20
7103817	1-Methylnaphthalene	2020/12/11	119	50 - 130	89	50 - 130	<0.050	ug/L	NC	30
7103817	2-Methylnaphthalene	2020/12/11	113	50 - 130	84	50 - 130	<0.050	ug/L	NC	30
7103817	Acenaphthene	2020/12/11	113	50 - 130	107	50 - 130	<0.050	ug/L	NC	30
7103817	Acenaphthylene	2020/12/11	107	50 - 130	104	50 - 130	<0.050	ug/L	NC	30
7103817	Anthracene	2020/12/11	113	50 - 130	109	50 - 130	<0.050	ug/L	NC	30
7103817	Benzo(a)anthracene	2020/12/11	111	50 - 130	111	50 - 130	<0.050	ug/L	NC	30
7103817	Benzo(a)pyrene	2020/12/11	96	50 - 130	99	50 - 130	<0.0090	ug/L	NC	30
7103817	Benzo(b/j)fluoranthene	2020/12/11	112	50 - 130	116	50 - 130	<0.050	ug/L	NC	30
7103817	Benzo(g,h,i)perylene	2020/12/11	111	50 - 130	118	50 - 130	<0.050	ug/L	NC	30
7103817	Benzo(k)fluoranthene	2020/12/11	107	50 - 130	116	50 - 130	<0.050	ug/L	NC	30

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7103817	Chrysene	2020/12/11	113	50 - 130	116	50 - 130	<0.050	ug/L	NC	30
7103817	Dibenzo(a,h)anthracene	2020/12/11	109	50 - 130	119	50 - 130	<0.050	ug/L	NC	30
7103817	Fluoranthene	2020/12/11	123	50 - 130	120	50 - 130	<0.050	ug/L	NC	30
7103817	Fluorene	2020/12/11	110	50 - 130	108	50 - 130	<0.050	ug/L	NC	30
7103817	Indeno(1,2,3-cd)pyrene	2020/12/11	112	50 - 130	120	50 - 130	<0.050	ug/L	NC	30
7103817	Naphthalene	2020/12/11	111	50 - 130	87	50 - 130	<0.050	ug/L	NC	30
7103817	Phenanthrene	2020/12/11	115	50 - 130	112	50 - 130	<0.030	ug/L	NC	30
7103817	Pyrene	2020/12/11	118	50 - 130	119	50 - 130	<0.050	ug/L	NC	30
7103869	F2 (C10-C16 Hydrocarbons)	2020/12/11	103	60 - 130	104	60 - 130	<100	ug/L	NC	30
7103869	F3 (C16-C34 Hydrocarbons)	2020/12/11	102	60 - 130	103	60 - 130	<200	ug/L	NC	30
7103869	F4 (C34-C50 Hydrocarbons)	2020/12/11	105	60 - 130	104	60 - 130	<200	ug/L	NC	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

BV Labs Job #: C0W7005
Report Date: 2020/12/14

Soil Engineers Ltd
Client Project #: 2007-E048
Site Location: 55 EAGLE STREET, NEWMARKET
Sampler Initials: EL

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com