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A REPORT TO
1334281 ONTARIO LIMITED

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

PROPOSED MID-RISE RESIDENTIAL DEVELOPMENT

720 GRANITE COURT

CITY OF PICKERING

Reference No. 2111-E043

February 25, 2022

DISTRIBUTION

3 Copies - 1334281Ontario Limited

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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.

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1.0 EXECUTIVE SUMMARY

Soil Engineers Ltd. (SEL) was retained by 1334281Ontario Limited to carry out a Phase Two Environmental Site Assessment (Phase Two ESA), as defined by Ontario Regulation (O. Reg.) 153/04, as amended under Environmental Protection Act (EPA). The Phase Two property is located at 720 Granite Court, in the City of Pickering (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 Assessment (Phase One ESA).

The field work was performed at selected locations on the subject site. Soil and groundwater samples collected and submitted for chemical analyses were compared with the Ministry of the Environment, Conservation and Parks (MECP) Table 2, Full Depth Generic Site Condition Standards for Use in a Potable Groundwater Condition, for Residential/ Parkland/Institutional Property Use and coarse textured soil (Table 2 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.

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.

Since no contaminants identified at the test locations at a concentration above the applicable site condition standards (Table 2 Standards) during the Phase Two ESA and therefore, it is our opinion that the property is suitable for the proposed residential development. No further environmental investigation is recommended at this time.

2.0 INTRODUCTION

Soil Engineers Ltd. (SEL) was retained by 1334281Ontario 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 under Environmental Protection Act (EPA). The Phase Two property is located at 720 Granite Court, in the City of Pickering (hereinafter referred to as "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 Assessment (Phase One ESA).

2.1 Site Description

The subject site, irregular (roughly a triangular) in shape and approximately 1.19 hectares (ha) (2.93 acres (ac)) in area, is located at 720 Granite Court, in the City of Pickering. The Property Identification Number (PIN) of the subject site is 26308-0086 (LT). The PIN along with its legal description and the UTM coordinates included in the subject site are summarized in the table below:

PIN from Parcel Register	Property Description from Parcel Register	UTM Coordinates (1983 NAD)	Municipal Address
26308-0086 (LT)	Part Bayly Street, Plan 40M-1334, Parts 1, 2 & 3, 40R18421, S/T ease over Part 2, 40R18421 as in LT86838, S/T ease over Part 3, 40R18421 as in LT100421; Pickering	17T 651738 m E 4852756 m N	720 Granite Court

At the time of the assessment, the subject site is comprised of a vacant land. The neighbouring properties consist of residential properties to the east and south, commercial property (Petro Canada gas station with fuel storage tanks and car wash) to the southeast and commercial properties to the west, southwest and northwest. The overall grade of the subject site generally decends to the northwest. A watercourse (a tributary of Petticoat Creek) is located approximately 485 metres (m) to the west of the subject site.

2.2 Property Ownership

This Phase Two ESA was commissioned to address the environmental concerns in accordance with our proposal, as approved by Mr. Steve Margie of 1334281Ontario Limited.

Our client can be contacted at:

1334281Ontario Limited
18 Twin Circle Court
North York, Ontario
M2R 3L6

Attention: Mr. Steve Margie

2.3 Current and Proposed Future Uses

The subject site is currently a vacant land. A mid-rise residential development is being proposed for the subject site. It is anticipated that the new development will be provided with municipal services meeting urban standards.

2.4 Applicable Site Condition Standards

SEL has selected the applicable regulatory standard from O. Reg. 153/04, as amended under the Environmental Protection Act, to assess the analytical data from the submitted soil 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 soil samples is between 5 and 9.
- 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.
- There are records of water wells at neighbouring properties within 250 m from the subject site boundaries.

- No water body is located on/within 30 m of the subject site boundaries.
- Full Depth Generic Site Condition Standards are to be used in this assessment.
- The intended property use of the subject site is residential.
- No grain size analysis was performed on a soil sample retrieved at the subject site. Therefore, the coarse textured soil standard has been applied.

Based on the above evaluation, the Ministry of the Environment, Conservation and Parks (MECP) Table 2, Full Depth Generic Site Condition Standards for Use in a Potable Groundwater Condition, for Residential/ Parkland/Institutional Property Use and coarse textured soil (Table 2 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 evaluating the environmental 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 residential and commercial area in the City of Pickering. At the time of the assessment, the neighbouring properties consist of residential properties to the east and south, commercial property (Petro Canada gas station with fuel storage tanks and car wash) to the southeast and commercial properties to the west, southwest and northwest.

The subject site is situated within the Iroquois Plain physiographic region of Southern Ontario. Geological maps of the area located at the Ontario Geological Survey indicate that the subject site is underlain by bedrock of Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Easticw Member with rock description as shale, limestone, dolostone and siltstone.

According to the Ontario Geological Survey Bedrock Cross Section Viewer, the bedrock at the subject site is overlain by approximately 29 m of drift.

The subject site is adjacent to the roadways (Granite Court and Whites Road to south and east, respectively). Railway tracks are located adjacent to the west of the subject site. 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 within the West Lake Ontario Shoreline Watershed.

A watercourse (a tributary of Petticoat Creek) is located approximately 485 m west of the subject site.

3.2 Past Investigations

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

- Phase One Environmental Site Assessment, Proposed Mid-Rise Residential Development, 720 Granite Court, City of Pickering, Reference No. 2111-E043, dated December 1, 2021.

Phase One Environmental Site Assessment (2021)

The Phase One ESA identified the Potential Contaminating Activities (PCAs) at the subject site that may have contributed to Areas of Potential Environmental Concerns (APECs), based on records review, interviews and site reconnaissance. The findings of the Phase One ESA included following APECs:

APEC 1: Potential soil and groundwater impact due to a gas station associated with fuel storage tanks located adjacent to the southeast of the subject site.

APEC 2: Potential soil and groundwater impact due to a car wash business located adjacent to the southeast of the subject site.

APEC 3: Potential soil and groundwater impact due to gasoline fuel spill occurred at a property located adjacent to the southeast of the subject site.

APEC 4: Potential soil and groundwater impact due to railway tracks located adjacent to the west of the subject site.

The locations of PCAs and APECs are illustrated in Drawings 1 and 2, respectively.

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of Site Investigation

The purpose of this investigation (Phase Two ESA) was to assess the soil and groundwater quality at the subject site, as related to the environmental concerns raised in the findings of our 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 four (4) boreholes (designated as BH/MW1, BH/MW2, BH/MW3 and BH/MW4) to depths ranging from 9.1 of 12.2 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 all four (4) of the boreholes (e.g., BH/MW1, BH/MW2, BH/MW3 and BH/MW4) for groundwater sampling and testing.
- Conduct groundwater monitoring, and collect groundwater samples for chemical testing.
- Carry out an analytical testing program on selected soil and groundwater samples including Quality Assurance and Quality Control (QA/QC) samples for one or more of the following parameters: Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Metals, Mercury (Hg), Chromium (Cr) (VI) and pH.
- Review analytical testing results of submitted soil and groundwater samples using applicable Site Condition Standards (Table 2 Standards).
- Prepare a Phase Two ESA report containing the findings of the investigation.

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. Consequently, no sediment sampling was conducted as part of Phase Two ESA.

Boreholes were advanced using a track-mounted CME 55 drill rig, equipped with a flight auger and split spoon soil sampler. Soil samples were logged in the field and headspace 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 ppmv (parts per million by volume).

Groundwater monitoring wells were installed in all boreholes. The monitoring wells were constructed using 50 millimetre (mm) diameter flush-joint threaded PVC monitoring well supplies. They were completed with 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 analyses being conducted).

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 PCAs, is presented on Drawing No. 1 and APECs are presented on Drawing No. 2.

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 (SOPs).

The Phase Two ESA consisted of four (4) boreholes, installation of monitoring wells at all boreholes, field measurements, monitoring, and collection of soil samples from the borehole locations and groundwater samples from the 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 a private locator (All Clear Locates)

The field work for this investigation was carried out on December 15, 20 and 23, 2021, and consisted of four (4) boreholes (designated as BH/MW1 to BH/MW4) to depths ranging from 9.1 to 12.2 mbgs. Monitoring wells were installed in at all four (4) borehole locations to depths ranging from 9.1 to 12.2 mbgs. The locations of the boreholes are shown on

Drawing No. 2.

The boreholes were advanced using a track-mounted CME 55 drill rig, equipped with a flight auger and split spoon soil sampler, supplied by a drilling contractor, DBW Drilling. Soil samples from the boreholes were recovered at regular intervals, using steel rod casing into the ground. The retrieved soil samples were examined for visual and olfactory evidence of potential contamination and for soil classification.

Drilling equipment such as drill rigs, augers, drill pipes and drilling rods were decontaminated prior to initial use, between borehole locations and at the completion of drilling activities. The drilling equipment were 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, all sampling equipment were 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 split spoon soil 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. In addition, any sub-sampling equipment used were decontaminated prior to each usage.

Each soil sample was split with part of the sample sealed in a laboratory-prepared sampling containers 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.

The subsoil conditions at the borehole locations indicate that beneath the layer of topsoil, the subject site is generally underlain by sandy silt till deposit, at various depths and locations.

Detailed descriptions of the encountered subsurface conditions are presented on the Borehole Logs provided in Appendix 'B'.

Based on the soil vapour measurements and/or visual and olfactory observations, representative 'worst case' soil samples from the sampling locations were selected to determine the maximum concentrations and sent to the laboratory for chemical analyses.

5.4 Field Screening Measurements

The headspace vapour concentrations were measured using a portable RKI Eagle gas detector, TYPE 1001 (Serial Number: E2A847) set to include flammable gases with the exception of methane (methane elimination mode), and having a minimum detection level of 2 ppmv. Prior to taking the measurements, the instrument was calibrated to hexane standards for both ppmv and Lower Explosive Limit (LEL) readings according to the instruction manual for the instrument. Our technician was trained by the supplier (Pine Environmental Services Inc.) for the proper calibration procedure. The instrument is calibrated or tuned up by the supplier 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 DBW Drilling on December 15, 20 and 23, 2021. The drilling contractor is an MECP licensed well contractor. The monitoring wells were constructed using 50 mm diameter PVC screen with 3m in length at the bottom of the boreholes. 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. At each monitoring well location, the aboveground riser was protected by steel monument casings that have been sealed into 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.

Well development was performed prior groundwater sampling from the installed wells. The monitoring wells were developed to remove any fluids that may have been introduced into the wells during drilling activities and to remove particles that may have become entrained in the wells and filter packs. Well development was carried out with three well casing volumes of groundwater from 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 were conducted at the monitoring wells BH/MW1, BH/MW2, BH/MW3 and BH/MW4 on January 11, 2022. Water level measurements were taken using a water level meter (Dipper-T). Groundwater observations were recorded for color, clarity, the presence or absence of any free product/surface sheen and any odours present during purging/well development 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 measurement are presented in Table II.

5.7 Groundwater: Sampling

Groundwater sampling was conducted at BH/MW1, BH/MW2, BH/MW3 and BH/MW4 locations on January 12, 2022, after purging and allowing the water to stabilize at the wells. 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 protocol

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 in 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 23, 2021 using a hand-held (Trimble Geoexplorer 7000 series) Global Navigation Satellite System measurement equipment.

The elevations at the borehole and monitoring well locations are presented in the Table II and Borehole 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 summarized as follows:

- The collection of at least one field duplicate sample per 10 samples for every sampling media.

- 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 °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 locations.

- 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 locations.
- The inclusion of one trip blank for water samples per submission (where three or more samples are collceted) for benzene, toluene, ethylbenzene, and xylenes (BTEX) 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 samples and trip blank sample 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, the subject site is generally underlain by sandy silt till deposit, at various depths and locations. No bedrock was encountered during the Phase Two ESA. 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.

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

Topsoil

Topsoil, approximately 0.20 to 0.23 m in thickness, was contacted at the ground surface of the boreholes.

Sandy Silt Till

Sandy silt till was encountered beneath the topsoil at the boreholes BH/MW1, BH/MW2, BH/MW3 and BH/MW4, extending to the bottom of the boreholes.

Hydrogeology

Upon completion of drilling activities, groundwater was detected in the boreholes. Based on the field observation and groundwater monitoring records (as indicated in the section below), shallow aquifer groundwater is present in the sandy silt till deposit. This hydrogeologic unit at the subject site was investigated for this Phase Two ESA.

6.2 Groundwater: Elevations and Flow Direction

Four (4) monitoring wells were installed at the boreholes during the field investigations for this Phase Two ESA. The monitoring wells were installed at depths ranging from 9.1 to 12.2 mbgs. Groundwater records were documented during the advancement of boreholes and groundwater purging and monitoring event on the dates indicated in Sections 5.5 and 5.6 of this report.

During groundwater monitoring event, water levels were recorded on January 11, 2022 at depths of 7.00, 6.95, 7.95 and 7.37 mbgs in the monitoring wells BH/MW1, BH/MW2, BH/MW3 and BH/MW4, respectively.

The ground elevations of the monitoring wells were surveyed using a hand-held (Trimble Geoexplorer 7000 series) Global Navigation Satellite System measurement equipment. Water level measurements were taken using a water level meter (Dipper-T). Shallow aquifer groundwater levels, recorded on January 11, 2022, were used to determine the shallow aquifer groundwater flow direction. Based on the groundwater monitoring records on January 11, 2022, the groundwater flow direction appears to be to the northwest. No free product or surface sheen was observed in any of the monitoring wells.

The groundwater elevations measured in the monitoring wells are summarized in Table II. The shallow aquifer groundwater contours and interpreted groundwater flow direction are shown on Drawing No. 5.

6.3 Groundwater: Hydraulic Gradients

Based on the groundwater records on January 11, 2022, the horizontal hydraulic gradient for the investigated aquifer within the sandy silt till layer at the subject site is between 0.010 m/m and 0.011 m/m (average 0.010 m/m).

6.4 Coarse Soil Texture

No grain size analysis was performed as part of this investigation. Therefore, site condition standards for coarse textured soil standard has been applied.

6.5 Soil: Field Screening

Soil samples were logged in the field and headspace vapour screening readings were taken for the 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 ppmv.

Soil vapour readings ranging from non-detect to 40 ppm were recorded for the soil samples.

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 PHCs, VOCs, PAHs, Metals, Cr (VI), Hg and pH parameters.

The soil test results were reviewed using the Table 2, Full Depth Generic Site Condition Standards for Use in a Potable Groundwater Condition, for Residential/ Parkland/Institutional Property Use and coarse textured soil (Table 2 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.

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:

Petroleum Hydrocarbons (PHCs) and Benzene, Toluene, Ethylbenzene, Xylene (BTEX)

Four (4) original soil samples were submitted for analysis of PHCs and BTEX. The test results indicate the tested soil samples meet the Table 2 Standards.

Volatile Organic Compounds (VOCs)

Four (4) original soil samples and one (1) field duplicate sample were submitted for analysis of VOCs. The test results indicate the tested soil samples meet the Table 2 Standards.

Polycyclic Aromatic Hydrocarbons (PAHs)

Four (4) original soil samples were submitted for analysis of PAHs. The test results indicate the tested soil samples meet the Table 2 Standards.

Metals, Hg, Cr (VI) and pH Parameters

Four (4) original soil samples and one (1) field duplicate sample were submitted for analysis of Metals, Cr (VI), Hg, and/or pH parameters. The test results indicate the tested soil samples meet the Table 2 Standards.

6.7 Groundwater Quality

Groundwater samples were collected from four (4) monitoring wells BH/MW1 to BH/MW4 at the subject site. The groundwater samples were submitted to the laboratory for chemical analyses of PHCs, VOCs, PAHs, Metals , Cr (VI), Hg, and/or pH parameters.

The groundwater test results were reviewed using the Table 2, Full Depth Generic Site Condition Standards for Use in a Potable Groundwater Condition, for Residential/ Parkland/Institutional Property Use and coarse textured soil (Table 2 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.

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:

Petroleum Hydrocarbons

Four (4) original groundwater samples were submitted for analysis of PHCs. One (1) trip blank sample was submitted for analysis of BTEX. The test results indicate the tested groundwater samples and trip blank sample meet the Table 2 Standards.

Volatile Organic Compounds

Four (4) original groundwater samples and one (1) field duplicate sample were submitted for analysis of VOCs. The test results indicate the tested groundwater samples meet the Table 2 Standards.

Polycyclic Aromatic Hydrocarbons

Four (4) original groundwater samples were submitted for analysis of PAHs. The test results indicate the tested groundwater samples meet the Table 2 Standards.

Metal , Hg, Cr (VI) and pH Parameters

Four (4) original groundwater samples and one (1) duplicate sample were submitted for analysis of Metal , Cr (VI), Hg, and/or pH parameters. The test results indicate the tested

groundwater samples meet the Table 2 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 samples and trip blank sample were analysed. Field duplicate samples were collected in the field for VOCs, Metals, Hg, Cr (VI), and pH in soil and groundwater. One (1) trip blank for BTEX was shipped with the batch of the groundwater samples submitted for analyses. Details of QC samples are presented in the table below.

Field Duplicate

A total of two (2) 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
DUPS1	BH/MW2/6	Soil	VOCs
DUPS2	BH/MW3/4	Soil	Metals, Hg, Cr (VI) and pH
DUPW1	BH/MW1	Groundwater	Metals, Hg, Cr (VI) and pH
DUPW2	BH/MW3	Groundwater	VOCs

The results of the analyses of the field duplicate samples are similar to the results for the original samples and relative percent differences (RPDs) for the detectable tested parameters are within an acceptable range.

Trip Blank

One (1) trip blank sample was submitted to the laboratory for analysis of BTEX. 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 analyses.

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 laboratory duplicate samples is similar to the results for the original sample and relative percent differences for the detectable tested parameters are within the acceptable range.

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 Phase Two Conceptual Site Model

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

6.10.1 Description and Assessment

The subject site, irregular (roughly a triangular) in shape and approximately 1.19 ha (2.93 ac) in area, is located at 720 Granite Court, in the City of Pickering. The Property Identification Number (PIN) of the subject site is 26308-0086 (LT). The legal description of the subject site is Part Bayly Street, Plan 40M-1334, Parts 1, 2 & 3, 40R18421, S/T ease over Part 2, 40R18421 as in LT86838, S/T ease over Part 3, 40R18421 as in LT100421; Pickering.

6.10.1.1 Areas where Potentially Contaminating Activity Has Occurred

The Phase One ESA determined the Potentially Contaminating Activities (PCAs) at the subject site and within the Phase One Study Area based on the records review, interviews and site reconnaissance. The locations of PCAs along with the corresponding list in Table 2 Schedule D of O. Reg. 153/04 are summarized below:

Off-site PCAs:

The following off-site PCAs are considered to have contributed to the Areas of Potential Environmental Concern (APECs) at the subject site.

- A gas station associated with fuel storage tanks is located adjacent to the southeast of the subject site: #28 – Gasoline and Associated Products Storage in Fixed Tanks.
- Railway tracks are located adjacent to the west of the subject sit: #46 – Rail Yards, Tracks and Spurs.

The following off-site PCAs that are not listed in the Table 2 of Schedule D of the O. Reg. 153/04 and are considered to have contributed to the APECs at the subject site.

- A car wash business is located adjacent to the southeast of the subject site: #Other – Car Wash.
- Gasoline fuel spill occurred at a property located adjacent to the southeast of the subject site: #Other – Spill.

The following off-site PCAs that are listed in the Table 2 of Schedule D of the O. Reg. 153/04 and the PCAs are not considered to have contributed to the APEC due to relative distance and/or situated down/trans-gradient from the subject site.

- Metal and plastic products manufacturing business associated with waste generator is located approximately 222 m southwest of the subject site: #34 – Metal Fabrication. #43 – Plastics (including Fibreglass) Manufacturing and processing.

In addition to the off-site PCAs listed above, the following off-site PCAs that are not listed in the Table 2 of Schedule D of the O. Reg. 153/04 and these PCAs are not considered to have contributed to the APECs due to relative distance and/or situated trans-gradient from the subject site.

- Transformer oil spill occurred at a property located approximately 223 m west of the subject site: #Other - Spill.
- Electronic parts and components business associated with waste generator was located approximately 128 m west of the subject site: #Other - Electronic Parts Business.
- Printing, publication and manufacturing business associated with waste generator is located approximately 184 m west of the subject site: #Other - Printing, Publication and Manufacturing Business.
- Electronic parts and components business associated with waste generator is located approximately 223 m west of the subject site: #Other – Electronic Parts Business.
- Communications and Media Company associated with waste oil generator is located approximately 237 m southwest of the subject site: #Other – Waste Oil Generator.

- Duct Cleaning and Holding Corporation associated with waste oil generator is located approximately 244 m west of the subject site: : #Other – Waste Oil Generator.
- Electronic part and component manufacturing business is listed approximately 166 m southwest of the subject site: #Other – Electronic Parts Business.
- Chemical product manufacturing business is listed approximately 244 m west of the subject site: #Other – Chemical Product Manufacturing Business.

The PCAs are shown in Drawing No. 1.

6.10.1.2 Areas of Potential Environmental Concern

The Phase One ESA identified the following Areas of Potential Environmental Concern (APECs) at the subject site:

APEC 1: Potential soil and groundwater impact due to a gas station associated with fuel storage tanks located adjacent to the southeast of the subject site.

APEC 2: Potential soil and groundwater impact due to a car wash business located adjacent to the southeast of the subject site.

APEC 3: Potential soil and groundwater impact due to gasoline fuel spill occurred at a property located adjacent to the southeast of the subject site.

APEC 4: Potential soil and groundwater impact due to railway tracks located adjacent to the west of the subject site.

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

6.10.1.3 Subsurface Structures and Utilities

At the time of the assessment, the subject site is consisted of a vacant land. There were no underground structures/utilities at the subject site.

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

The subject site is situated within the Iroquois Plain physiographic region of Southern Ontario.

Geological maps of the area located at the Ontario Geological Survey(OGS) indicate that the site is underlain by bedrock of Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview Member with rock description as shale, limestone, dolostone and siltstone.

The field investigation for the Phase Two ESA consisted of advancing four (4) boreholes to depths ranging form 9.1 to 12.2 mbgs, and installing four (4) monitoring wells at the borehole locations. The subsoil conditions at the borehole locations indicate a layer of topsoil ranging from 0.20 to 0.23 m in thickness at the ground surface. The top soil is underlain by sandy silt till to depths ranging from 9.1 to 12.2 mbgs at the termination of the boreholes. 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 Hydrogeological Characteristics

The subject site is located in a larger hydrogeological region known as Southern Ontario Lowlands. A watershed map provided by Land Information Ontario (LIO) shows the subject site is situated in the West Lake Ontario Shoreline Watershed. Based on the inferred

topography of the area from topographic maps, precipitation runoff is expected to flow in northwestern direction.

A total of four (4) monitoring wells were installed during the field investigation for the Phase Two ESA at the subject site. The monitoring wells were installed at various depths, within the sandy silt till deposit. Based on the groundwater records at the installed monitoring wells and our investigation in this Phase Two ESA, the groundwater flow direction appears to be to northwesterly. 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 shallow aquifer at the subject site is between 0.010 m/m and 0.011 m/m (average 0.010 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 12.2 mbgs. According to the OGS Bedrock Drift Thickness Database, the depth of bedrock in the general vicinity of the subject site is approximately 29 m.

6.10.2.4 Approximate Depth to Water Table

Based on the groundwater records for the site investigation, depths to the water table at the monitoring wells installed at the subject site ranges from 6.95 mbgs to 7.95 mbgs on January 11, 2022.

6.10.2.5 Section 35, 41 or 43.1 of the Regulation

There are records of water wells located at the neighbouring properties within 250 m from the subject site boundaries. Therefore, Section 35 of the Regulation (Non-Potable Site Condition Standards) does not apply to the subject site.

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. 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. In addition, there is no water body within the subject site or within 30 m from the subject site boundaries. Therefore, Section 43.1 of the Regulation (Site Condition Standards, Shallow Soil Property or Water Body) does not apply to the subject site.

6.10.2.6 Areas On, In or Under the Phase Two Property Where Excess Soil Is Finally Placed

The findings of our Phase One ESA and the field investigation of the Phase Two ESA indicated no fill material was brought at the subject site. No soil was brought at the subject site during the Phase Two ESA.

6.10.2.7 Proposed Building and Other Structures

A residential development is being proposed for the subject site. It is anticipated that the new development will be provided with municipal services meeting urban standards. The final location of proposed building or any other structures was not known at the time of preparation of this Phase Two Conceptual Site Model.

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 in the areas and depths, where potentially maximum concentration is expected to be representative of the full extents of the 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 2, Full Depth Generic Site Condition Standards for Use in a Potable Groundwater Condition, for Residential/ Parkland/Institutional Property Use and coarse textured soil (Table 2 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:

APEC 1: Soil and groundwater samples samples were submitted for chemical analyses of PHCs, BTEX and Metals.

APEC 2: Soil and groundwater samples were submitted for chemical analyses of PHCs, VOCs, PAHs, Metals, Hg, Cr (VI) and pH.

APEC 3: Soil and groundwater samples were submitted for chemical analyses of PHCs, VOCs and Metals.

APEC 4: Soil and groundwater samples were submitted for chemical analyses of PHCs, VOCs, PAHs, Metals, Hg, Cr (VI).

A review of the analytical test results of soil and groundwater samples indicate that the tested samples for the tested parameters meet the Table 2 Standards.

Consequently, there are no contaminants identified at the subject site at a concentration above the applicable site condition standards (Table 2 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 2 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 and groundwater impact due to a gas station associated with fuel storage tanks located adjacent to the southeast of the subject site.

APEC 2: Potential soil and groundwater impact due to a car wash business located adjacent to the southeast of the subject site.

APEC 3: Potential soil and groundwater impact due to gasoline fuel spill occurred at a property located adjacent to the southeast of the subject site.

APEC 4: Potential soil and groundwater impact due to railway tracks located adjacent to the west 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 this Phase Two ESA consisted of advancing four (4) boreholes (designated as BH/MW1, BH/MW2, BH/MW3 and BH/MW4) to depths ranging from 9.1 to 12.2 mbgs. Monitoring wells were installed in all four (4) boreholes locations (i.e., BH/MW1, BH/MW2, BH/MW3 and BH/MW4) to depths ranging from 9.1 to 12.2 mbgs.
- The subsoil conditions at the borehole locations indicate that beneath a layer of topsoil, the subject site is generally underlain by sandy silt till deposits to the termination of boreholes.
- The soil samples retrieved from the sampling location were examined for visual and olfactory evidence of potential contamination.
- Headspace vapour readings ranging from non-detect to 40 ppmv were recorded in the soil samples retrieved from the sampling locations.
- Based on the soil field screening and observations, representative "worst case" soil

samples were selected to determine the maximum concentrations from each sampling location for chemical analyses of Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Metals, Hg, Cr (VI) and/or pH parameters.

- Groundwater samples collected and submitted for analyses of PHCs, VOCs, PAHs, Metals, Hg, Cr (VI) and/or pH parameters.
- As part of the Quality Assurance and Quality Control (QA/QC) program for the investigation, QC samples in the form of field duplicate samples were analysed. Field duplicate samples were collected in the field for the analyses of VOCs, metals, Hg, Cr (VI), and pH in soil and groundwater. One (1) trip blank sample for BTEX was shipped with the batch of the groundwater samples submitted for analyses.
- The analytical test results were reviewed using the Table 2, Full Depth Generic Site Condition Standards for Use in a Potable Groundwater Condition, for Residential/ Parkland/Institutional Property Use and coarse textured soil (Table 2 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 the analyses of the duplicate samples are similar to the results for the original samples and relative percent differences for the detectable tested parameters are within an acceptable range.
- The result of the trip blank sample indicates that the sample was below the reported laboratory detection limit.
- 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 above the applicable site condition standards (Table 2 Standards) during the Phase Two ESA.

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.

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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.

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TABLES

REFERENCE NO. 2111-E043

Reference No. 2111-E043

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/MW1	10.7	3.0	7.7 – 10.7	7.1 – 10.7	0.3 – 7.1
BH/MW2	10.7	3.0	7.7 – 10.7	7.1 – 10.7	0.3 – 7.1
BH/MW3	12.2	3.0	9.2 – 12.2	8.6 – 12.2	0.3 – 8.6
BH/MW4	9.1	3.0	6.1 – 9.1	5.5 – 9.1	0.3 – 5.5

Note: mbgs – meters below ground surface

Monitoring Well No.	Ground Elevation (masl)	Measured Groundwater Level		Field Observations		
		January 11, 2022				
		Depth (mbgs)	Elevation (m)	Odour	Colour	Sheen or Free Product
BH/MW1	104.60	7.00	97.60	None	Clear	None
BH/MW2	104.40	6.95	97.45	None	Clear	None
BH/MW3	104.50	7.95	96.55	None	Clear	None
BH/MW4	104.10	7.37	96.73	None	Clear	None

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

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Table III

Soil Chemical Analysis - Metals and Inorganic Parameters

Project No. 2111-E043

Sample ID	RDL*	BH/MW1/1A	BH/MW1/4	BH/MW2/4	BH/MW3/4	DUPS2	BH/MW4/4	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		15-December-2021	15-December-2021	15-December-2021	23-December-2021	23-December-2021	20-December-2021	
Laboratory ID		RJO899	RJO901	RJO903	RME125	RME128	RLJ239	
Bore Hole No		BH/MW1/1A	BH/MW1/4	BH/MW2/4	BH/MW3/4	BH/MW3/4	BH/MW4/4	
Depth (mbgs)		0 0 - 0.4	2.3 - 3 0	2.3 - 3.0	2.3 - 3.0	2.3 - 3.0	2.3 - 3.0	
Antimony	0.2	-	<0.20	<0.20	<0.20	<0.20	<0.20	7.5
Arsenic	1	-	1.3	2.1	1.3	1.4	1.5	18
Barium	0.5	-	34	51	39	40	50	390
Beryllium	0.2	-	0.2	0.35	0.21	0.23	0.3	4
Cadmium	0.1	-	<0.10	<0 10	<0.10	<0.10	<0.10	1.2
Chromium	1	-	9.8	18	11	11	25	160
Chromium VI	0.18	-	<0.18	<0.18	<0.18	<0.18	<0.18	8
Cobalt	0.1	-	4.2	8.4	3.9	4.2	5.1	22
Copper	0.5	-	8.1	15	8.1	8.4	9.8	140
Lead	1	-	4.2	7.9	3.9	3.9	4.9	120
Mercury	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	0.27
Molybdenum	0.5	-	<0.50	0.73	<0.50	<0.50	<0.50	6.9
Nickel	0 5	-	8 5	16	8.3	8.5	12	100
Selenium	0.5	-	<0.50	<0.50	<0.50	<0.50	<0.50	2.4
Silver	0.2	-	<0.20	<0.20	<0.20	<0.20	<0.20	20
Thallium	0.05	-	0.08	0.14	0.077	0.082	0.11	1
Vanadium	5	-	17	24	18	20	23	86
Zinc	5	-	20	35	20	21	26	340
pH (pH Units)	-	7.16	-	8.01	7.97	7.98	-	NV
Boron (Total)	0.01	-	<5.0	<5.0	<5.0	<5.0	5.3	0.051
Uranium	0.05	-	0.49	0.65	0.5	0.47	0.49	23

Analysis by Bureau Veritas, 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 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use (coarse textured soils)

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Project No. 2111-E043

Soil Chemical Analysis - Volatile Organic Compound (VOC) Parameters

Sample ID	RDL*	BH/MW1/5	BH/MW2/6	DUP51	BH/MW3/6	BH/MW4/5	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		15-December-2021	15-December-2021	15-December-2021	23-December-2021	20-December-2021	
Laboratory ID		RJO902	RJO905	RJO906	RME127	RLJ240	
Bore Hole No.		BH/MW1/5	BH/MW2/6	BH/MW2/6	BH/MW3/6	BH/MW4/5	
Depth (mbgs)		3.0 - 3.8	3.8 - 4.5	3.8 - 4.5	4.0 - 4.5	3.0 - 3.8	
Acetone	0.5	<0.49	<0.49	<0.49	<0.49	<0.49	16
Benzene	0.02	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.21
Bromodichloromethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	1.5
Bromoform	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.27
Bromomethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Carbon Tetrachloride	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Chlorobenzene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	2.4
Chloroform	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Dibromochloromethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	2.3
1,2-Dichlorobenzene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	1.2
1,3-Dichlorobenzene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	4.8
1,4-Dichlorobenzene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.083
1,1-Dichloroethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.47
1,2-Dichloroethane	0.05	<0.049	<0.049	<0.049	<0.049	<0.049	0.05
1,1-Dichloroethylene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Cis-1,2-Dichloroethylene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	1.9
Trans-1,2-Dichloroethylene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.084
1,2-Dichloropropane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Cis-1,3-Dichloropropylene	0.03	<0.030	<0.030	<0.030	<0.030	<0.030	NV
Trans-1,3-Dichloropropylene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	NV
Ethylbenzene	0.02	<0.010	<0.010	<0.010	<0.010	<0.010	1.1
Ethylene Dibromide	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Methyl Ethyl Ketone	0.5	<0.40	<0.40	<0.40	<0.40	<0.40	16
Methylene Chloride	0.05	<0.049	<0.049	<0.049	<0.049	<0.049	0.1
Methyl Isobutyl Ketone	0.5	<0.40	<0.40	<0.40	<0.40	<0.40	1.7
Methyl-t-Butyl Ether	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.75
Styrene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.7
1,1,1,2-Tetrachloroethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.058
1,1,2,2-Tetrachloroethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Toluene	0.05	<0.020	<0.020	<0.020	<0.020	<0.020	2.3
Tetrachloroethylene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.28
1,1,1-Trichloroethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.38
1,1,2-Trichloroethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Trichloroethylene	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	0.061
Vinyl Chloride	0.02	<0.019	<0.019	<0.019	<0.019	<0.019	0.02
m-Xylene & p-Xylene	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	NV
o-Xylene	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	NV
Total Xylenes	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	3.1
Dichlorodifluoromethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	16
Hexane(n)	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	2.8
Trichlorofluoromethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	4
1,3-Dichloropropene (cis + trans)	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	0.05

Analysis by Bureau Veritas, 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 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use (coarse textured soils)

Soil Engineers Ltd.

Table III

Soil Chemical Analysis - Petroleum Hydrocarbon (PHC) and BTEX Parameters

Project No. 2111-E043

Sample ID	RDL*	BH/MW1/5	BH/MW2/5	BH/MW3/5	BH/MW4/5	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		15-December-2021	15-December-2021	23-December-2021	20-December-2021	
Laboratory ID		RJO902	RJO904	RME126	RLJ240	
Bore Hole No.		BH/MW1/5	BH/MW2/5	BH/MW3/5	BH/MW4/5	
Depth (mbgs)		3.0 - 3.8	3.0 - 3.8	3.0 - 3.8	3.0 - 3.8	
Benzene	0.04	-	<0.020	<0.020	-	0.21
Toluene	0.04	-	<0.020	<0.020	-	2.3
Ethylbenzene	0.04	-	<0.020	<0.020	-	1.1
m/p xylenes	0.08	-	<0.040	<0.040	-	NV
o xylene	0.04	-	<0.020	<0.020	-	NV
Total Xylenes	0.08	-	<0.040	<0.040	-	3.1
F1 (C6-C10)	20	<10	<10	<10	<10	55
F1 (C6-C10) - BTEX	20	<10	<10	<10	<10	55
F2 (C10-C16)	10	<10	<10	<10	<10	98
F3 (C16-C34)	50	<50	<50	<50	<50	300
F4 (C34-C50)	50	<50	<50	<50	<50	2800

Analysis by Bureau Veritas, 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 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use (coarse textured soils)

Soil Engineers Ltd.

Table III

Project No. 2111-E043

Soil Chemical Analysis - Polycyclic Aromatic Hydrocarbon (PAH) and Semi-Volatile Organics (SVOCs) Parameters

Sample ID	RDL*	BH/MW1/3	BH/MW2/4	BH/MW3/4	BH/MW4/4	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		15-December-2021	15-December-2021	23-December-2021	20-December-2021	
Laboratory ID		RJO900	RJO903	RME125	RLJ239	
Bore Hole No.		BH/MW1/3	BH/MW2/4	BH/MW3/4	BH/MW4/4	
Depth (mbgs)		1.5 - 2.3	2.3 - 3.0	2.3 - 3.0	2.3 - 3.0	
Acenaphthene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	7.9
Acenaphthylene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.15
Anthracene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.67
Benzo(a)anthracene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.5
Benzo(a)pyrene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.3
Benzo(b/j)fluoranthene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.78
Benzo(ghi)perylene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	6.6
Benzo(k)fluoranthene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.78
Chrysene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	7
Dibenzo(a,h)anthracene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.1
Fluoranthene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.69
Fluorene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	62
Indeno(1,2,3-cd)pyrene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.38
1-Methylnaphthalene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.99
2-Methylnaphthalene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.99
Naphthalene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.6
Phenanthrene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	6.2
Pyrene	0.005	<0.0050	<0.0050	<0.0050	<0.0050	78
Methylnaphthalene, 2-(1-)	0.0071	<0.0071	<0.0071	<0.0071	<0.0071	0.99

Analysis by Bureau Veritas. 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 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use (coarse textured soils)

Soil Engineers Ltd

Table IV

Groundwater Chemical Analysis - Metals and Inorganic Parameters

Project No. 2111-E043

Sample ID	RDL*	BH/MW1	DUPW1	BH/MW2	BH/MW3	BH/MW4	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		12-January-2022	12-January-2022	12-January-2022	12-January-2022	12-January-2022	
Laboratory ID		RPQ581	RPQ585	RPQ582	RPQ583	RPQ584	
Bore Hole No.		BH/MW1	BH/MW1	BH/MW2	BH/MW3	BH/MW4	
Screen Depth (mbgs)		7.7-10.7	7.7-10.7	7.7-10.7	9.2-12.2	6.1-9.1	
Antimony	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	6
Arsenic	1	<1.0	<1.0	1.3	<1.0	2.2	25
Barium	2	160	160	240	51	110	1000
Beryllium	0.5	<0.40	<0.40	<0.40	<0.40	<0.40	4
Boron	10	130	130	130	250	120	5000
Cadmium	0.1	<0.090	<0.090	<0.090	<0.090	<0.090	2.7
Chromium	5	<5.0	<5.0	<5.0	<5.0	<5.0	50
Chromium VI	0.5	<0.50	0.5	<0.50	<0.50	<0.50	25
Cobalt	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	3.8
Copper	0.9	1.4	1.4	<0.90	<0.90	<0.90	87
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	<0.10	0.29
Molybdenum	0.5	12	12	11	37	19	70
Nickel	1	1.7	1.8	1.3	<1.0	1.3	100
Selenium	2	<2.0	<2.0	<2.0	<2.0	<2.0	10
Silver	0.1	<0.090	<0.090	<0.090	<0.090	<0.090	1.5
Thallium	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	2
Vanadium	0.5	1.2	1.4	0.52	<0.50	0.9	6.2
Zinc	5	36	37	<5.0	<5.0	<5.0	1100
pH (pH Units)	-	7.57	7.6	7.52	-	-	NV
Cyanide, Free	1	<1	<1	-	-	-	66
Uranium	0.1	1.3	1.3	1.2	0.11	0.79	20

Analysis by Bureau Veritas, 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 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of property use

Soil Engineers Ltd

Table IV

Groundwater Chemical Analysis - Volatile Organic Compound (VOC) Parameters

Project No. 2111-E043

Sample ID	RDL*	BH/MW1	BH/MW2	BH/MW3	DUPW2	BH/MW4	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		12-January-2022	12-January-2022	12-January-2022	12-January-2022	12-January-2022	
Laboratory ID		RPQ581	RPQ582	RPQ583	RPQ586	RPQ584	
Bore Hole No.		BH/MW1	BH/MW2	BH/MW3	BH/MW3	BH/MW4	
Screen Depth (mbgs)		7.7-10.7	7.7-10.7	9.2-12.2	9.2-12.2	6.1-9.1	
Acetone	10	<10	<10	<10	<10	<10	2700
Benzene	0.2	0.24	0.19	0.26	0.28	<0.17	5
Bromodichloromethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	16
Bromoform	1	<1.0	<1.0	<1.0	<1.0	<1.0	25
Bromomethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	0.89
Carbon Tetrachloride	0.2	<0.20	<0.20	<0.20	<0.19	<0.20	0.79
Chlorobenzene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	30
Chloroform	0.2	<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	25
1,2-Dichlorobenzene	0.5	<0.50	<0.50	<0.50	<0.40	<0.50	3
1,3-Dichlorobenzene	0.5	<0.50	<0.50	<0.50	<0.40	<0.50	59
1,4-Dichlorobenzene	0.5	<0.50	<0.50	<0.50	<0.40	<0.50	1
1,1-Dichloroethane	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	5
1,2-Dichloroethane	0.5	<0.50	<0.50	<0.50	<0.49	<0.50	1.6
1,1-Dichloroethylene	0.2	<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	1.6
Trans-1,2-Dichloroethylene	0.5	<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	5
Cis-1,3-Dichloropropylene	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	NV
Trans-1,3-Dichloropropylene	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	NV
Ethylbenzene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	2.4
Ethylene Dibromide	0.2	<0.20	<0.20	<0.20	<0.19	<0.20	0.2
Methyl Ethyl Ketone	10	<10	<10	<10	<10	<10	1800
Methylene Chloride	2	<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	640
Methyl-t-Butyl Ether	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	15
Styrene	0.5	<0.50	<0.50	<0.50	<0.40	<0.50	5.4
1,1,1,2-Tetrachloroethane	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	1.1
1,1,2,2-Tetrachloroethane	0.5	<0.50	<0.50	<0.50	<0.40	<0.50	1
Toluene	0.2	0.49	0.39	0.43	0.37	0.33	24
Tetrachloroethylene	0.2	<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	200
1,1,2-Trichloroethane	0.5	<0.50	<0.50	<0.50	<0.40	<0.50	4.7
Trichloroethylene	0.2	<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	0.5
m-Xylene & p-Xylene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	NV
o-Xylene	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	NV
Total Xylenes	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	300
Dichlorodifluoromethane	1	<1.0	<1.0	<1.0	<1.0	<1.0	590
Hexane(n)	1	<1.0	<1.0	<1.0	<1.0	<1.0	51
Trichlorofluoromethane	0.5	<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	0.5

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 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of property use

Soil Engineers Ltd

Table IV

Groundwater Chemical Analysis - Petroleum Hydrocarbon (PHC) and BTEX Parameters

Project No. 2111-E043

Sample ID	RDL*	BH/MW1	BH/MW2	BH/MW3	BH/MW4	TRIP BLANK	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		12-January-2022	12-January-2022	12-January-2022	12-January-2022	12-January-2022	
Laboratory ID		RPQ581	RPQ582	RPQ583	RPQ584	RPQ587	
Bore Hole No.		BH/MW1	BH/MW2	BH/MW3	BH/MW4	TRIP BLANK	
Screen Depth (mbgs)		7.7-10.7	7.7-10.7	9.2-12.2	6.1-9.1	-	
Benzene	0.2	-	-	-	-	<0.20	5
Toluene	0.2	-	-	-	-	<0.20	24
Ethylbenzene	0.2	-	-	-	-	<0.20	2.4
m/p xylenes	0.4	-	-	-	-	<0.40	NV
o xylene	0.2	-	-	-	-	<0.20	NV
Total Xylenes	0.4	-	-	-	-	<0.40	300
F1 (C6-C10)	25	<25	<25	<25	<25	-	750
F1 (C6-C10) - BTEX	25	<25	<25	<25	<25	-	750
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 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of property use

Soil Engineers Ltd

Table IV

Project No. 2111-E043

Groundwater Chemical Analysis - Polycyclic Aromatic Hydrocarbon (PAH) and Semi-Volatile Organics (SVOCs) Parameters

Sample ID	RDL*	BH/MW1	BH/MW2	BH/MW3	BH/MW4	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		12-January-2022	12-January-2022	12-January-2022	12-January-2022	
Laboratory ID		RPQ581	RPQ582	RPQ583	RPQ584	
Bore Hole No.		BH/MW1	BH/MW2	BH/MW3	BH/MW4	
Screen Depth (mbgs)		7.7-10.7	7.7-10.7	9.2-12.2	6.1-9.1	
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	2.4
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	<0.030	<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 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of property use

Summary of Metals and Inorganics

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Antimony	ug/g	<0.20	-	-
Arsenic	ug/g	2.1	BH/MW2/4	2.3 – 3.0
Barium	ug/g	51	BH/MW2/4	2.3 – 3.0
Beryllium	ug/g	0.35	BH/MW2/4	2.3 – 3.0
Cadmium	ug/g	<0.10	-	-
Chromium	ug/g	25	BH/MW4/4	2.3 – 3.0
Chromium VI	ug/g	<0.18	-	-
Cobalt	ug/g	8.4	BH/MW2/4	2.3 – 3.0
Copper	ug/g	15	BH/MW2/4	2.3 – 3.0
Lead	ug/g	7.9	BH/MW2/4	2.3 – 3.0
Mercury	ug/g	<0.050	-	-
Molybdenum	ug/g	0.73	BH/MW2/4	2.3 – 3.0
Nickel	ug/g	16	BH/MW2/4	2.3 – 3.0
Selenium	ug/g	<0.50	-	-
Silver	ug/g	<0.20	-	-
Thallium	ug/g	0.14	BH/MW2/4	2.3 – 3.0
Vanadium	ug/g	24	BH/MW2/4	2.3 – 3.0
Zinc	ug/g	35	BH/MW2/4	2.3 – 3.0
pH (pH Units)	ug/g	8.01	BH/MW2/4	2.3 – 3.0
Boron (Total)	ug/g	5.3	BH/MW4/4	2.3 – 3.0
Uranium	ug/g	0.65	BH/MW2/4	2.3 – 3.0

Summary of VOCs

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Acetone	µg/g	<0.50	-	-
Benzene	µg/g	<0.020	-	-
Bromodichloromethane	µg/g	<0.050	-	-
Bromoform	µg/g	<0.050	-	-
Bromomethane	µg/g	<0.050	-	-
Carbon Tetrachloride	µg/g	<0.050	-	-
Chlorobenzene	µg/g	<0.050	-	-
Chloroform	µg/g	<0.050	-	-
Dibromochloromethane	µg/g	<0.050	-	-
1,2-Dichlorobenzene	µg/g	<0.050	-	-
1,3-Dichlorobenzene	µg/g	<0.050	-	-
1.4-Dichlorobenzene	µg/g	<0.050	-	-
1,1-Dichloroethane	µg/g	<0.050	-	-
1,2-Dichloroethane	µg/g	<0.050	-	-
1,1-Dichloroethylene	µg/g	<0.050	-	-
Cis-1,2-Dichloroethylene	µg/g	<0.050	-	-
Trans-1,2-Dichloroethylene	µg/g	<0.050	-	-
1,2-Dichloropropane	µg/g	<0.050	-	-
Cis-1,3-Dichloropropylene	µg/g	<0.030	-	-
Trans-1,3-Dichloropropylene	µg/g	<0.040	-	-
Ethylbenzene	µg/g	<0.20	-	-
Ethylene Dibromide	µg/g	<0.050	-	-
Methyl Ethyl Ketone	µg/g	<0.50	-	-
Methylene Chloride	µg/g	<0.050	-	-
Methyl Isobutyl Ketone	µg/g	<0.50	-	-
Methyl-t-Butyl Ether	µg/g	<0.050	-	-
Styrene	µg/g	<0.050	-	-
1,1,1,2-Tetrachloroethane	µg/g	<0.050	-	-
1,1,2,2-Tetrachloroethane	µg/g	<0.050	-	-
Toluene	µg/g	<0.020	-	-
Tetrachloroethylene	µg/g	<0.050	-	-
1,1,1-Trichloroethane	µg/g	<0.050	-	-
1,1,2-Trichloroethane	µg/g	<0.050	-	-
Trichloroethylene	µg/g	<0.050	-	-
Vinyl Chloride	µg/g	<0.020	-	-

Summary of VOCs (Cont'd)

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
m-Xylene & p-Xylene	µg/g	<0.020	-	-
o-Xylene	µg/g	<0.020	-	-
Total Xylenes	µg/g	<0.020	-	-
Dichlorodifluoromethane	µg/g	<0.050	-	-
Hexane (n)	µg/g	<0.050	-	-
Trichlorofluoromethane	µg/g	<0.050	-	-
1,3-Dichloropropene (cis + trans)	µg/g	<0.050	-	-

Summary of PHC and BTEX

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Benzene	µg/g	<0.040	-	-
Toluene	µg/g	<0.040	-	-
Ethylbenzene	µg/g	<0.040	-	-
Total Xylenes	µg/g	<0.080	-	-
F1 (C6-C10)	µg/g	<20	-	-
F1 (C6-C10) - BTEX	µg/g	<20	-	-
F2 (C10-C16)	µg/g	<10	-	-
F3 (C16-C34)	µg/g	<50	-	-
F4 (C34-C50)	µg/g	<50	-	-

Summary of PAH and SVOCs

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	<0.005	-	-
Benzo(a)pyrene	µg/g	<0.005	-	-
Benzo(b/j)fluoranthene	µg/g	<0.005	-	-
Benzo(ghi)perylene	µg/g	<0.005	-	-
Benzo(k)fluoranthene	µg/g	<0.005	-	-
Chrysene	µg/g	<0.005	-	-
Dibenzo(a,h)anthracene	µg/g	<0.005	-	-
Fluoranthene	µg/g	<0.005	-	-
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	<0.005	-	-
Pyrene	µg/g	<0.005	-	-
Methylnaphthalene, 2-(1-)	µg/g	<0.0071	-	-

Summary of Metals and Inorganics

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Screen Depth (m)
Antimony	µg/L	<0.50	-	-	-
Arsenic	µg/L	2.2	BH/MW4	BH4	6.1-9.1
Barium	µg/L	240	BH/MW2	BH2	7.7-10.7
Beryllium	µg/L	<0.40	-	-	-
Boron	µg/L	250	BH/MW3	BH3	9.2-12.2
Cadmium	µg/L	<0.090	-	-	-
Chromium	µg/L	<5.0	-	-	-
Chromium VI	µg/L	0.5	BH/MW1, DUPW1	BH1	7.7-10.7
Cobalt	µg/L	<0.50	-	-	-
Copper	µg/L	1.4	BH/MW1, DUPW1	BH1	7.7-10.7
Lead	µg/L	<0.50	-	-	-
Mercury	µg/L	<0.10	-	-	-
Molybdenum	µg/L	37	BH/MW3	BH3	9.2-12.2
Nickel	µg/L	1.8	DUPW1	BH1	7.7-10.7
Selenium	µg/L	<2.0	-	-	-
Silver	µg/L	<0.090	-	-	-
Thallium	µg/L	<0.050	-	-	-
Vanadium	µg/L	1.4	DUPW1	BH1	7.7-10.7
Zinc	µg/L	37	DUPW1	BH1	7.7-10.7
pH (pH Units)	-	7.6	DUPW1	BH1	7.7-10.7
Cyanide, Free	µg/L	<1	-	-	-
Uranium	µg/L	1.3	BH/MW1, DUPW1	BH1	7.7-10.7

Summary of VOCs

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Screen Depth (m)
Acetone	µg/L	<10	-	-	-
Benzene	µg/L	0.28	DUPW2	BH3	9.2-12.2
Bromodichloromethane	µg/L	<0.50	-	-	-
Bromoform	µg/L	<1	-	-	-
Bromomethane	µg/L	<0.50	-	-	-
Carbon Tetrachloride	µg/L	<0.20	-	-	-
Chlorobenzene	µg/L	<0.20	-	-	-
Chloroform	µg/L	<0.20	-	-	-
Dibromochloromethane	µg/L	<0.50	-	-	-
1,2-Dichlorobenzene	µg/L	<0.50	-	-	-
1,3-Dichlorobenzene	µg/L	<0.50	-	-	-
1,4-Dichlorobenzene	µg/L	<0.50	-	-	-
1,1-Dichloroethane	µg/L	<0.20	-	-	-
1,2-Dichloroethane	µg/L	<0.50	-	-	-
1,1-Dichloroethylene	µg/L	<0.20	-	-	-
Cis-1,2-Dichloroethylene	µg/L	<0.50	-	-	-
Trans-1,2-Dichloroethylene	µg/L	<0.50	-	-	-
1,2-Dichloropropane	µg/L	<0.20	-	-	-
Cis-1,3-Dichloropropylene	µg/L	<0.30	-	-	-
Trans-1,3-Dichloropropylene	µg/L	<0.40	-	-	-
Ethylbenzene	µg/L	<0.20	-	-	-
Ethylene Dibromide	µg/L	<0.20	-	-	-
Methyl Ethyl Ketone	µg/L	<10	-	-	-
Methylene Chloride	µg/L	<2	-	-	-
Methyl Isobutyl Ketone	µg/L	<5	-	-	-
Methyl-t-Butyl Ether	µg/L	<0.50	-	-	-
Styrene	µg/L	<0.50	-	-	-
1,1,1,2-Tetrachloroethane	µg/L	<0.50	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	<0.50	-	-	-
Toluene	µg/L	0.49	BH/MW1	BH1	7.7-10.7
Tetrachloroethylene	µg/L	<0.20	-	-	-
1,1,1-Trichloroethane	µg/L	<0.20	-	-	-

Summary of VOCs (Cont'd)

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Screen Depth (m)
1,1,2-Trichloroethane	µg/L	<0.50	-	-	-
Trichloroethylene	µg/L	<0.20	-	-	-
Vinyl Chloride	µg/L	<0.20	-	-	-
m-Xylene & p-Xylene	µg/L	<0.20	-	-	-
o-Xylene	µg/L	<0.20	-	-	-
Total Xylenes	µg/L	<0.20	-	-	-
Dichlorodifluoromethane	µg/L	<1	-	-	-
Hexane(n)	µg/L	<1	-	-	-
Trichlorofluoromethane	µg/L	<0.50	-	-	-
1,3-Dichloropropene (cis + trans)	µg/L	<0.50	-	-	-

Summary of PHCs and BTEX

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Screen Depth (m)
Benzene	µg/g	<0.20	-	-	-
Toluene	µg/g	<0.20	-	-	-
Ethylbenzene	µg/g	<0.20	-	-	-
o-Xylene	µg/g	<0.40	-	-	-
p+m –Xylene	µg/g	<0.20	-	-	-
Total Xylenes	µg/g	<0.40	-	-	-
F1 (C6 to C10)	µg/L	<25	-	-	-
F2 (C10 to C16)	µg/L	<25	-	-	-
F3 (C16 to C34)	µg/L	<100	-	-	-
F4 (C34 to C50)	µg/L	<200	-	-	-

Summary of PAHs

Parameter	Unit	Maximum Concentration	Sample ID	Screen Depth (m)
Acenaphthene	µg/g	<0.050	-	-
Acenaphthylene	µg/g	<0.050	-	-
Anthracene	µg/g	<0.050	-	-
Benzo(a)anthracene	µg/g	<0.050	-	-
Benzo(a)pyrene	µg/g	<0.0090	-	-
Benzo(b/j)fluoranthene	µg/g	<0.050	-	-
Benzo(ghi)perylene	µg/g	<0.050	-	-
Benzo(k)fluoranthene	µg/g	<0.050	-	-
Chrysene	µg/g	<0.050	-	-
Dibenzo(a,h)anthracene	µg/g	<0.050	-	-
Fluoranthene	µg/g	<0.050	-	-
Fluorene	µg/g	<0.050	-	-
Indeno(1,2,3-cd)pyrene	µg/g	<0.050	-	-
1-Methylnaphthalene	µg/g	<0.050	-	-
2-Methylnaphthalene	µg/g	<0.050	-	-
Naphthalene	µg/g	<0.050	-	-
Phenanthrene	µg/g	<0.030	-	-
Pyrene	µg/g	<0.050	-	-
Biphenyl	µg/g	<0.050	-	-
Methylnaphthalene, 2-(1-)	µg/g	<0.071	-	-

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FIGURES

REFERENCE NO. 2111-E043

N

Subject Site

Phase One Study Area

Expressway/Freeway

Major Road

Local Road

Railway

Potentially Contaminating Activities (PCAs)

28 Gasoline and Associated Products Storage in Fixed Tanks

34 Metal Fabrication

43 Plastics (including Fiberglass) Manufacturing and Processing

46 Rail Yards, Tracks, and Spurs

Additional Potential Sources of Contamination

Other - Car Wash

Other - Chemical Product Manufacturing Business

Other - Electronic Parts Business

Other - Printing, Publication and Manu

Other - Spill

Other - Waste Oil Generator

Soil Engineers Ltd.

Title: Site Location Plan

Project:
Proposed Mid-Rise Residential Development
720 Granite Court
City of Pickering

Reference No. 2111-E043

Date: February 11, 2022

Scale:
0 25 50 100 150 200
Metres

Drawing No. 1

N

Subject Site

Borehole with Monitoring Well

Major Road

Local Road

Railway

Areas of Potential Environmental Concern (APEC)

APEC 1

APEC 2

APEC 3

APEC 4

Soil Engineers Ltd.

Title: Sampling Location Plan

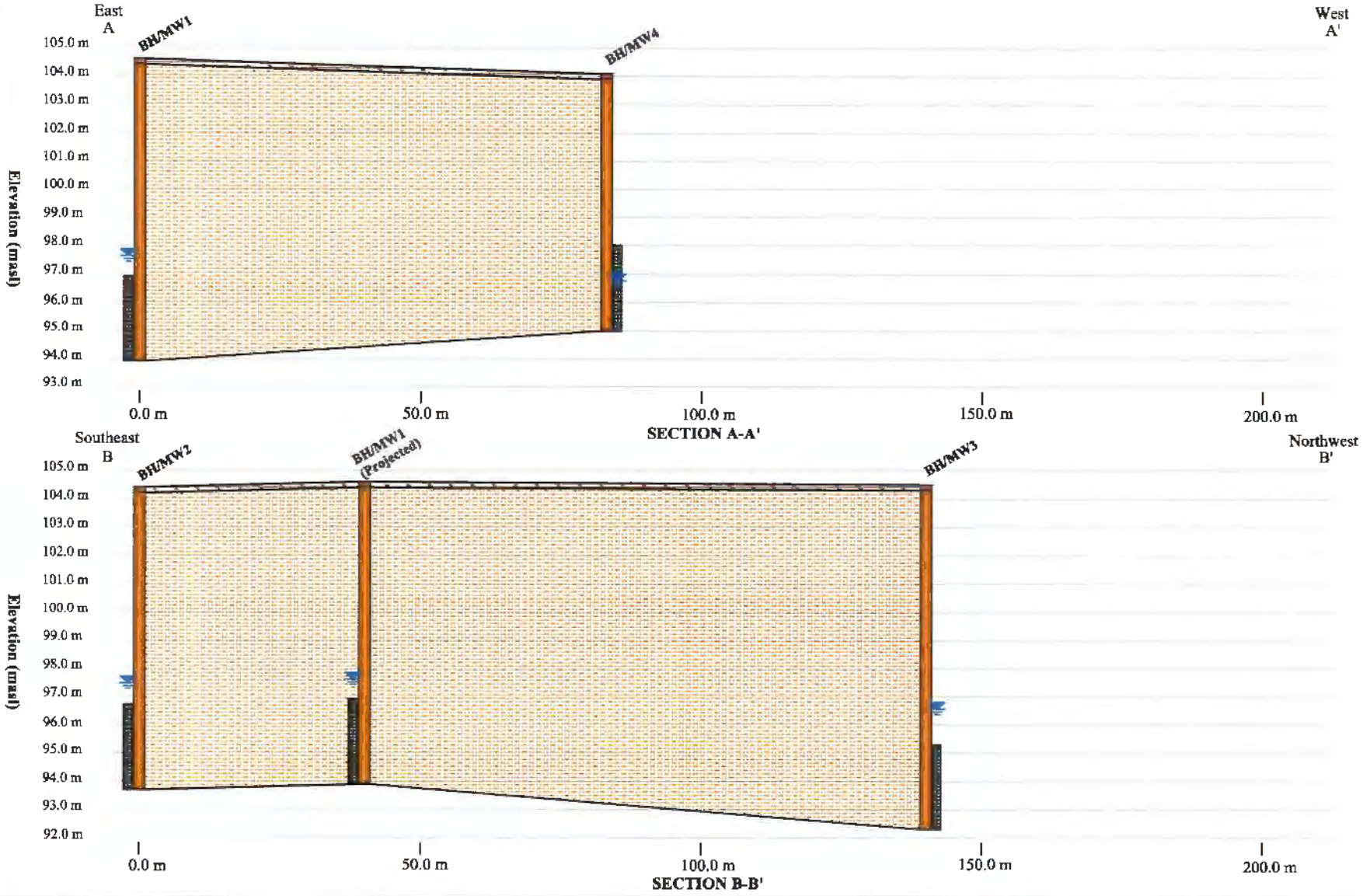
Project:
Proposed Mid-Rise Residential Development
720 Granite Court
City of Pickering

Reference No. 2111-E043

Date: February 11, 2022

Scale:
0 5 10 20 30 40 50
Metres

Drawing No. 2



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CONSULTING SOIL, FOUNDATION & ENVIRONMENTAL ENGINEERS

Title:	Geological Cross-Sections A-A' and B-B'
Project:	Proposed Mid-Rise Residential Development 720 Granite Court City of Pickering

Reference No:	Date:	Scale: V	Scale: H	Drawing No.
2111-E043	February 11, 2022	1:200	1:1000	4

N

Subject Site

Borehole with Monitoring Well

Major Road

Local Road

Railway

Cross-Section Direction

Soil Engineers Ltd.

Title: Cross-Section Key Plan

Project:
Proposed Mid-Rise Residential Development
720 Granite Court
City of Pickering

Reference No. 2111-E043

Date: February 11, 2022

Scale:
0 5 10 20 30 40 50
Metres

Drawing No. 3

Source: Ontario Ministry of Natural Resources and Forestry

N

Subject Site

Borehole with Monitoring Well

Interpreted Shallow Groundwater Flow Direction

Groundwater Elevation Contour

Major Road

Local Road

Railway

(97.60) Groundwater Elevation (masl)

Soil Engineers Ltd.

Title: Shallow Groundwater Contour Map

Project:
Proposed Mid-Rise Residential Development
720 Granite Court
City of Pickering

Reference No. 2111-E043

Date: February 11, 2022

Scale:
0 5 10 20 30 40 50
Metres

Drawing No. 5

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APPENDIX 'A'

SAMPLING AND ANALYSIS PLAN

REFERENCE NO. 2111-E043

This Sampling and Analysis Plan has been prepared for a Phase Two Environmental Site Assessment (Phase Two ESA) as defined by Ontario Regulation (O. Reg.) 153/04, as amended. The Phase Two property is located at 720 Granite Court, in the City of Pickering (herein 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).

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 Concern (APECs) identified in our Phase One ESA:

APEC 1: Potential soil and groundwater impact due to a gas station associated with fuel storage tanks located adjacent to the southeast of the subject site.

APEC 2: Potential soil and groundwater impact due to a car wash business located adjacent to the southeast of the subject site.

APEC 3: Potential soil and groundwater impact due to gasoline fuel spill occurred at a property located adjacent to the southeast of the subject site.

APEC 4: Potential soil and groundwater impact due to railway tracks located adjacent to the west of the subject site.

Potentially Contaminating Activities (PCAs) and APECs are shown on Drawing Nos. 1 and 2, respectively.

2) SCOPE OF WORK

The scope of work for the Phase Two ESA includes:

- Locate the underground and overhead utilities.
- Conduct four (4) boreholes (designated as BH/MW1, BH/MW2, BH/MW3 and BH/MW4) to depths ranging from 9.1 of 12.2 mbgs.

- Collect representative soil samples from the borcholes.
- 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.
- Installation of monitoring wells in all four (4) of the boreholes (e.g., BH/MW1, BH/MW2, BH/MW3 and BH/MW4) for groundwater sampling and testing.
- Conduct groundwater monitoring and collect groundwater samples for chemical testing.
- Carry out an analytical testing program on selected soil and groundwater samples including Quality Assurance and Quality Control (QA/QC) samples for one or more of the following parameters: Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Metals, Mercury (Hg), Chromium (Cr) (VI) and pH.
- Review analytical testing results of submitted soil and groundwater samples using applicable Site Condition Standards (Table 2 Standards).
- Prepare a Phase Two ESA report containing the findings of the investigation.

3) RATIONALE OF SAMPLING LOCATION

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

Areas of Potential Environmental Concern (APECs)	Borehole/ Monitoring Well ID
APEC 1: Potential soil and groundwater impact due to a gas station associated with fuel storage tanks located adjacent to the southeast of the subject site.	BH/MW1 and BH/MW2
APEC 2: Potential soil and groundwater impact due to a car wash business located adjacent to the southeast of the subject site.	BH/MW1 and BH/MW2
APEC 3: Potential soil and groundwater impact due to gasoline fuel spill occurred at a property located adjacent to the southeast of the subject site.	BH/MW1 and BH/MW2
APEC 4 Potential soil and groundwater impact due to railway tracks located adjacent to the west of the subject site.	BH/MW3 and BH/MW4

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

4) SOIL 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 tables below:

Soil Samples

Borehole	PHCs/BTEX	VOCs	PAHs	Metals, Hg, Cr (VI)	pH
BH/MW1	1	1	1	1	1
BH/MW2	1	1	1	1	1
BH/MW3	1	1	1	1	-
BH/MW 4	1	1	1	1	-
DUPS1	-	1	-	-	-
DUPS2	-	-	-	1	1

Groundwater Samples

Monitoring Well	PHCs/BTEX	VOCs	PAHs	Metals, Hg, Cr (VI)	pH
BH/MW1	1	1	1	1	1
BH/MW2	1	1	1	1	1
BH/MW3	1	1	1	1	-
BH/MW4	1	1	1	1	-
DUPW1	-	-	-	1	1
DUPW2	-	1	-	-	-
Trip Blank	1	-	-	-	-

It should be noted that based on the analytical results of the submitted 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 analyses of contaminants of concern.

5) SOIL AND GROUNDWATER SAMPLING PROCEDURES

Soil Engineer's Ltd.'s (SEL) Standard Operation Procedures (SOPs) will be followed throughout the field investigation (sampling, decontamination of equipment, observation and

documentation) including field QA/QC program. SEL's Standard Operating Procedure is 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's Standard Operating Procedures, as presented in Section 7 below.
- 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, 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 until target sampling depth is reached. The steel rod has been specially modified for specific types of sample collection.

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 the 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.

7.2.2) Drilling Rig Decontamination

Powerprobe

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.

7.2.3) 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 and the moisture content of the samples as determined in the laboratory are given on the borehole logs.

7.2.4) 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 samples are selected for chemical analysis.

The organic vapour readings are measured using a portable RKI Eagle gas detector, TYPE 1001 (Serial Number: E2A847) 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%.

7.2.5) 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 of PHCs, VOCs, PAHs, Metals, Hg, Cr (VI) and pH parameters.

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.

ii. Field Blanks: Field blank samples are prepared to confirm that no contamination takes place during the soil sampling procedure.

7.3) Well Installation and Groundwater Sampling

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 is equipped with threaded end caps. The appropriate numbers 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 is 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.

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

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90 WEST BEAVER CREEK ROAD, SUITE 100, RICHMOND HILL, ONTARIO L4B 1E7 · TEL: (416) 754-8515 · FAX: (905) 881-8335

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FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (905) 881-8335	FAX: (705) 684-8522	FAX: (905) 542-2769

APPENDIX 'B'

BOREHOLE LOGS

REFERENCE NO. 2111-E043

JOB NO.: 2111-E043

LOG OF BOREHOLE NO.: 1

FIGURE NO.: 1

PROJECT DESCRIPTION: Proposed Mid-Rise Residential Development

METHOD OF BORING: Split Spoon

PROJECT LOCATION: 720 Granite Court
City of Pickering

DRILLING DATE: December 15, 2021

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
104.6	Ground Surface							
0.0	20 cm TOPSOIL							
	Brown, moist SANDY SILT, Till trace of gravel, dense some clay occ. cobbles and boulders	1A	DO	0	0		BH1/1A: pH	
		1B		0	1			
		2A	DO	10	2			
		2B		10	3			
		3	DO	0			BH1/3: PAHs	
		4	DO	5	4		BH1/4: Metals, Cr(VI), Hg	
		5	DO	15	5		BH1/5: PHCs, VOCs	
		6	DO	10	6			
		7	DO	0	7			
		8	DO	0	8			
		9	DO	0	9			
		10	DO	0	10			
		11	DO	0				
		12	DO	0				
93.9								
10.7	END OF BOREHOLE Installed 51mm standpipe @ 10.7m Concrete from 0.0m to 0.3m Bentonite seal from 0.3m to 7.1m Sand backfill from 7.1m to 10.7m 3m screen from 7.7m to 10.7m Provided with monument protective casing				11			W.L. @ 7.00 mbgs on January 11, 2022
					12			
					13			
					14			

Soil Engineers Ltd.

JOB NO.: 2111-E043

LOG OF BOREHOLE NO.: 2

FIGURE NO.: 2

PROJECT DESCRIPTION: Proposed Mid-Rise Residential Development

METHOD OF BORING: Split Spoon

PROJECT LOCATION: 720 Granite Court
City of Pickering

DRILLING DATE: December 15, 2021

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
104.4	Ground Surface							
0.0	20 cm TOPSOIL	1A	DO	0	0		BH2/4: PAHs, Metals, Cr(VI), Hg, pH BH2/5: PHCs, BTEX BH2/6: VOCs DUPS1: VOCs	W.L. @ 6.95 mbgs on January 11, 2022
	Brown, moist SANDY SILT, Till trace of gravel, some clay occ. cobbles and boulders	1B	DO	0	1			
		2A	DO	10	2			
		2B	DO	0	3			
	grey	3	DO	0				
		4	DO	5	4			
		5	DO	15	5			
		6	DO	15	6			
		7	DO	10				
		8	DO	5	7			
		9	DO	0	8			
		10	DO	0				
		11	DO	0	9			
		12	DO	0	10			
93.7								
10.7	END OF BOREHOLE Installed 51mm standpipe @ 10.7m Concrete from 0.0m to 0.3m Bentonite seal from 0.3m to 7.1m Sand backfill from 7.1m to 10.7m 3m screen from 7.7m to 10.7m Provided with monument protective casing				11			
					12			
					13			
					14			

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

Soil Engineers Ltd.

JOB NO.: 2111-E043

LOG OF BOREHOLE NO.: 3

FIGURE NO.: 3

PROJECT DESCRIPTION: Proposed Mid-Rise Residential Development

METHOD OF BORING: Split Spoon

PROJECT LOCATION: 720 Granite Court
City of Pickering

DRILLING DATE: December 23, 2021

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
104.5	Ground Surface							
0.0	23 cm TOPSOIL	1A	DO	10	0			
	Brown, moist SANDY SILT, Till trace of gravel, dense some clay occ. cobbles and boulders	1B		5	1			
		2A	DO	15	2			
		2B		10	3			
		3A	DO	5	4			
		3B		5	5		BH3/4: PAHs, Metals, Cr(V), Hg, pH DUPS2: Metals, Cr(VI), Hg, pH BH3/5: PHCs, BTEX	
		4	DO	10	6		BH3/6: VOCs	
		5	DO	40	7			
		6	DO	30	8			
		7	DO	15	9			
		8	DO	0	10			
		9	DO	0	11			
		10	DO	0	12			
		11	DO	0	13			
		12	DO	0	14			
92.3								
12.2	END OF BOREHOLE Installed 51mm standpipe @ 12.2m Concrete from 0.0m to 0.3m Bentonite seal from 0.3m to 8.6m Sand backfill from 8.6m to 12.2m 3m screen from 9.2m to 12.2m Provided with monument protective casing							

W.L. @ 7.95 mbgs on January 11, 2022

Soil Engineers Ltd.

JOB NO.: 2111-E043

LOG OF BOREHOLE NO.: 4

FIGURE NO.: 4

PROJECT DESCRIPTION: Proposed Mid-Rise Residential Development

METHOD OF BORING: Split Spoon

PROJECT LOCATION: 720 Granite Court
City of Pickering

DRILLING DATE: December 20, 2021

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
104.1 / 0.0	Ground Surface 23 cm TOPSOIL				0	20 60 100 140 180		
	Brown, dry SANDY SILT, Till trace of gravel, some clay occ. cobbles and boulders	1A	DO	0	1			
		1B		0				
		2A	DO	0	2			
		2B		0	3			
		3A	DO	0	4			
		3B		0				
	grey	4	DO	0	5		BH4/4: PAHs, Metals, Cr(VI), Hg BH4/5: PHCs, VOCs	
		5	DO	0	6			
		6	DO	0	7			
		7	DO	0	8			
		8	DO	0				
95.0		9	DO	0	9			W.L. @ 7.37 mbgs on January 11, 2022
9.1	END OF BOREHOLE Installed 51mm standpipe @ 9.1m Concrete from 0.0m to 0.3m Bentonite seal from 0.3m to 5.5m Sand backfill from 5.5m to 9.1m 3m screen from 6.1m to 9.1m Provided with monument protective casing				10 11 12 13 14			

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APPENDIX 'C'

CERTIFICATES OF ANALYSIS (SOIL SAMPLES)

REFERENCE NO. 2111-E043

Your Project #: 2111-E043
Your C.O.C. #: n/a

Attention: Ram Sah

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

Report Date: 2021/12/22
Report #: R6935107
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z3446
Received: 2021/12/16, 15:13

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	2	N/A	2021/12/21	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	3	N/A	2021/12/21		EPA 8260C m
Hexavalent Chromium in Soil by IC (1)	2	2021/12/19	2021/12/20	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydro. CCME F1 & BTEX in Soil (2)	1	N/A	2021/12/19	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (3)	2	2021/12/17	2021/12/18	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS	2	2021/12/20	2021/12/21	CAM SOP-00447	EPA 6020B m
Moisture	6	N/A	2021/12/17	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	1	N/A	2021/12/18	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	2	2021/12/18	2021/12/18	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	2	2021/12/20	2021/12/20	CAM SOP-00413	EPA 9045 D m
Volatile Organic Compounds and F1 PHCs	1	N/A	2021/12/20	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Soil	2	N/A	2021/12/20	CAM SOP-00228	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas 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 Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, results relate to the supplied samples tested.

Your Project #: 2111-E043
Your C.O.C. #: n/a

Attention: Ram Sah

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

Report Date: 2021/12/22
Report #: R6935107
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z3446
Received: 2021/12/16, 15:13

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) 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
22 Dec 2021 13:53:04

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

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Bureau Veritas Job #: C1Z3446
Report Date: 2021/12/22

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: ASH

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID		RJO901			RJO903		
Sampling Date		2021/12/15 09:20			2021/12/15 10:45		
COC Number		n/a			n/a		
	UNITS	BH/MW1/4	RDL	QC Batch	BH/MW2/4	RDL	QC Batch
Inorganics							
Moisture	%	4.7	1.0	7738838			
Available (CaCl2) pH	pH				8.01		7741646
Chromium (VI)	ug/g	<0.18	0.18	7740057	<0.18	0.18	7740057
Metals							
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	7741090	<0.20	0.20	7741090
Acid Extractable Arsenic (As)	ug/g	1.3	1.0	7741090	2.1	1.0	7741090
Acid Extractable Barium (Ba)	ug/g	34	0.50	7741090	51	0.50	7741090
Acid Extractable Beryllium (Be)	ug/g	0.20	0.20	7741090	0.35	0.20	7741090
Acid Extractable Boron (B)	ug/g	<5.0	5.0	7741090	<5.0	5.0	7741090
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	7741090	<0.10	0.10	7741090
Acid Extractable Chromium (Cr)	ug/g	9.8	1.0	7741090	18	1.0	7741090
Acid Extractable Cobalt (Co)	ug/g	4.2	0.10	7741090	8.4	0.10	7741090
Acid Extractable Copper (Cu)	ug/g	8.1	0.50	7741090	15	0.50	7741090
Acid Extractable Lead (Pb)	ug/g	4.2	1.0	7741090	7.9	1.0	7741090
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	7741090	0.73	0.50	7741090
Acid Extractable Nickel (Ni)	ug/g	8.5	0.50	7741090	16	0.50	7741090
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	7741090	<0.50	0.50	7741090
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	7741090	<0.20	0.20	7741090
Acid Extractable Thallium (Tl)	ug/g	0.080	0.050	7741090	0.14	0.050	7741090
Acid Extractable Uranium (U)	ug/g	0.49	0.050	7741090	0.65	0.050	7741090
Acid Extractable Vanadium (V)	ug/g	17	5.0	7741090	24	5.0	7741090
Acid Extractable Zinc (Zn)	ug/g	20	5.0	7741090	35	5.0	7741090
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	7741090	<0.050	0.050	7741090

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

O.REG 153 PAHS (SOIL)

Bureau Veritas ID		RJO900	RJO903		
Sampling Date		2021/12/15 09:10	2021/12/15 10:45		
COC Number		n/a	n/a		
	UNITS	BH/MW1/3	BH/MW2/4	RDL	QC Batch
Inorganics					
Moisture	%	6.5	6.0	1.0	7736376
Calculated Parameters					
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	0.0071	7734792
Polyaromatic Hydrocarbons					
Acenaphthene	ug/g	<0.0050	<0.0050	0.0050	7738076
Acenaphthylene	ug/g	<0.0050	<0.0050	0.0050	7738076
Anthracene	ug/g	<0.0050	<0.0050	0.0050	7738076
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	0.0050	7738076
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	0.0050	7738076
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	7738076
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	0.0050	7738076
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	7738076
Chrysene	ug/g	<0.0050	<0.0050	0.0050	7738076
Dibenzo(a,h)anthracene	ug/g	<0.0050	<0.0050	0.0050	7738076
Fluoranthene	ug/g	<0.0050	<0.0050	0.0050	7738076
Fluorene	ug/g	<0.0050	<0.0050	0.0050	7738076
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	0.0050	7738076
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	7738076
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	7738076
Naphthalene	ug/g	<0.0050	<0.0050	0.0050	7738076
Phenanthrene	ug/g	<0.0050	<0.0050	0.0050	7738076
Pyrene	ug/g	<0.0050	<0.0050	0.0050	7738076
Surrogate Recovery (%)					
D10-Anthracene	%	93	94		7738076
D14-Terphenyl (FS)	%	101	101		7738076
D8-Acenaphthylene	%	93	91		7738076

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C1Z3446
Report Date: 2021/12/22

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: ASH

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

Bureau Veritas ID		RJO904		
Sampling Date		2021/12/15 11:15		
COC Number		n/a		
	UNITS	BH/MW2/5	RDL	QC Batch
Inorganics				
Moisture	%	8.7	1.0	7736376
BTEX & F1 Hydrocarbons				
Benzene	ug/g	<0.020	0.020	7738356
Toluene	ug/g	<0.020	0.020	7738356
Ethylbenzene	ug/g	<0.020	0.020	7738356
o-Xylene	ug/g	<0.020	0.020	7738356
p+m-Xylene	ug/g	<0.040	0.040	7738356
Total Xylenes	ug/g	<0.040	0.040	7738356
F1 (C6-C10)	ug/g	<10	10	7738356
F1 (C6-C10) - BTEX	ug/g	<10	10	7738356
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	7737156
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7737156
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7737156
Reached Baseline at C50	ug/g	Yes		7737156
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	98		7738356
4-Bromofluorobenzene	%	93		7738356
D10-o-Xylene	%	110		7738356
D4-1,2-Dichloroethane	%	102		7738356
o-Terphenyl	%	87		7737156

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

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

Bureau Veritas ID		RJO902		
Sampling Date		2021/12/15 09:50		
COC Number		n/a		
	UNITS	BH/MW1/5	RDL	QC Batch
Inorganics				
Moisture	%	5.5	1.0	7736376
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	7734793
Volatile Organics				
Acetone (2-Propanone)	ug/g	<0.49	0.49	7741535
Benzene	ug/g	<0.0060	0.0060	7741535
Bromodichloromethane	ug/g	<0.040	0.040	7741535
Bromoform	ug/g	<0.040	0.040	7741535
Bromomethane	ug/g	<0.040	0.040	7741535
Carbon Tetrachloride	ug/g	<0.040	0.040	7741535
Chlorobenzene	ug/g	<0.040	0.040	7741535
Chloroform	ug/g	<0.040	0.040	7741535
Dibromochloromethane	ug/g	<0.040	0.040	7741535
1,2-Dichlorobenzene	ug/g	<0.040	0.040	7741535
1,3-Dichlorobenzene	ug/g	<0.040	0.040	7741535
1,4-Dichlorobenzene	ug/g	<0.040	0.040	7741535
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	0.040	7741535
1,1-Dichloroethane	ug/g	<0.040	0.040	7741535
1,2-Dichloroethane	ug/g	<0.049	0.049	7741535
1,1-Dichloroethylene	ug/g	<0.040	0.040	7741535
cis-1,2-Dichloroethylene	ug/g	<0.040	0.040	7741535
trans-1,2-Dichloroethylene	ug/g	<0.040	0.040	7741535
1,2-Dichloropropane	ug/g	<0.040	0.040	7741535
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	7741535
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	7741535
Ethylbenzene	ug/g	<0.010	0.010	7741535
Ethylene Dibromide	ug/g	<0.040	0.040	7741535
Hexane	ug/g	<0.040	0.040	7741535
Methylene Chloride(Dichloromethane)	ug/g	<0.049	0.049	7741535
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	0.40	7741535
Methyl Isobutyl Ketone	ug/g	<0.40	0.40	7741535
Methyl t-butyl ether (MTBE)	ug/g	<0.040	0.040	7741535
Styrene	ug/g	<0.040	0.040	7741535
1,1,1,2-Tetrachloroethane	ug/g	<0.040	0.040	7741535
1,1,2,2-Tetrachloroethane	ug/g	<0.040	0.040	7741535

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Bureau Veritas ID		RJO902		
Sampling Date		2021/12/15 09:50		
COC Number		n/a		
	UNITS	BH/MW1/5	RDL	QC Batch
Tetrachloroethylene	ug/g	<0.040	0.040	7741535
Toluene	ug/g	<0.020	0.020	7741535
1,1,1-Trichloroethane	ug/g	<0.040	0.040	7741535
1,1,2-Trichloroethane	ug/g	<0.040	0.040	7741535
Trichloroethylene	ug/g	<0.010	0.010	7741535
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	0.040	7741535
Vinyl Chloride	ug/g	<0.019	0.019	7741535
p+m-Xylene	ug/g	<0.020	0.020	7741535
o-Xylene	ug/g	<0.020	0.020	7741535
Total Xylenes	ug/g	<0.020	0.020	7741535
F1 (C6-C10)	ug/g	<10	10	7741535
F1 (C6-C10) - BTEX	ug/g	<10	10	7741535
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	7737156
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7737156
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7737156
Reached Baseline at C50	ug/g	Yes		7737156
Surrogate Recovery (%)				
o-Terphenyl	%	92		7737156
4-Bromofluorobenzene	%	89		7741535
D10-o-Xylene	%	98		7741535
D4-1,2-Dichloroethane	%	96		7741535
D8-Toluene	%	103		7741535

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS (SOIL)

Bureau Veritas ID		RJO905	RJO906		
Sampling Date		2021/12/15 11:45	2021/12/15		
COC Number		n/a	n/a		
	UNITS	BH/MW2/6	DUPS1	RDL	QC Batch
Inorganics					
Moisture	%	6.7	6.7	1.0	7736848
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	0.050	7734793
Volatile Organics					
Acetone (2-Propanone)	ug/g	<0.49	<0.49	0.49	7741584
Benzene	ug/g	<0.0060	<0.0060	0.0060	7741584
Bromodichloromethane	ug/g	<0.040	<0.040	0.040	7741584
Bromoform	ug/g	<0.040	<0.040	0.040	7741584
Bromomethane	ug/g	<0.040	<0.040	0.040	7741584
Carbon Tetrachloride	ug/g	<0.040	<0.040	0.040	7741584
Chlorobenzene	ug/g	<0.040	<0.040	0.040	7741584
Chloroform	ug/g	<0.040	<0.040	0.040	7741584
Dibromochloromethane	ug/g	<0.040	<0.040	0.040	7741584
1,2-Dichlorobenzene	ug/g	<0.040	<0.040	0.040	7741584
1,3-Dichlorobenzene	ug/g	<0.040	<0.040	0.040	7741584
1,4-Dichlorobenzene	ug/g	<0.040	<0.040	0.040	7741584
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	<0.040	0.040	7741584
1,1-Dichloroethane	ug/g	<0.040	<0.040	0.040	7741584
1,2-Dichloroethane	ug/g	<0.049	<0.049	0.049	7741584
1,1-Dichloroethylene	ug/g	<0.040	<0.040	0.040	7741584
cis-1,2-Dichloroethylene	ug/g	<0.040	<0.040	0.040	7741584
trans-1,2-Dichloroethylene	ug/g	<0.040	<0.040	0.040	7741584
1,2-Dichloropropane	ug/g	<0.040	<0.040	0.040	7741584
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	0.030	7741584
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	0.040	7741584
Ethylbenzene	ug/g	<0.010	<0.010	0.010	7741584
Ethylene Dibromide	ug/g	<0.040	<0.040	0.040	7741584
Hexane	ug/g	<0.040	<0.040	0.040	7741584
Methylene Chloride(Dichloromethane)	ug/g	<0.049	<0.049	0.049	7741584
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	<0.40	0.40	7741584
Methyl Isobutyl Ketone	ug/g	<0.40	<0.40	0.40	7741584
Methyl t-butyl ether (MTBE)	ug/g	<0.040	<0.040	0.040	7741584
Styrene	ug/g	<0.040	<0.040	0.040	7741584
1,1,1,2-Tetrachloroethane	ug/g	<0.040	<0.040	0.040	7741584
1,1,2,2-Tetrachloroethane	ug/g	<0.040	<0.040	0.040	7741584

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS (SOIL)

Bureau Veritas ID		RJO905	RJO906		
Sampling Date		2021/12/15 11:45	2021/12/15		
COC Number		n/a	n/a		
	UNITS	BH/MW2/6	DUPS1	RDL	QC Batch
Tetrachloroethylene	ug/g	<0.040	<0.040	0.040	7741584
Toluene	ug/g	<0.020	<0.020	0.020	7741584
1,1,1-Trichloroethane	ug/g	<0.040	<0.040	0.040	7741584
1,1,2-Trichloroethane	ug/g	<0.040	<0.040	0.040	7741584
Trichloroethylene	ug/g	<0.010	<0.010	0.010	7741584
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	<0.040	0.040	7741584
Vinyl Chloride	ug/g	<0.019	<0.019	0.019	7741584
p+m-Xylene	ug/g	<0.020	<0.020	0.020	7741584
o-Xylene	ug/g	<0.020	<0.020	0.020	7741584
Total Xylenes	ug/g	<0.020	<0.020	0.020	7741584
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	98	98		7741584
D10-o-Xylene	%	93	97		7741584
D4-1,2-Dichloroethane	%	109	108		7741584
D8-Toluene	%	98	98		7741584

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C1Z3446
Report Date: 2021/12/22

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: ASH

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		RJO899	
Sampling Date		2021/12/15 08:50	
COC Number		n/a	
	UNITS	BH/MW1/1A	QC Batch
Inorganics			
Available (CaCl2) pH	pH	7.16	7741646
QC Batch = Quality Control Batch			

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TEST SUMMARY

Bureau Veritas ID: RJO899
Sample ID: BH/MW1/1A
Matrix: Soil

Collected: 2021/12/15
Shipped:
Received: 2021/12/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	7741646	2021/12/20	2021/12/20	Taslima Aktar

Bureau Veritas ID: RJO900
Sample ID: BH/MW1/3
Matrix: Soil

Collected: 2021/12/15
Shipped:
Received: 2021/12/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7734792	N/A	2021/12/21	Automated Statchk
Moisture	BAL	7736376	N/A	2021/12/17	Muhammad Chhaidan
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7738076	2021/12/18	2021/12/18	Jonghan Yoon

Bureau Veritas ID: RJO901
Sample ID: BH/MW1/4
Matrix: Soil

Collected: 2021/12/15
Shipped:
Received: 2021/12/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	7740057	2021/12/19	2021/12/20	Violeta Porcila
Acid Extractable Metals by ICPMS	ICP/MS	7741090	2021/12/20	2021/12/21	Viviana Canzonieri
Moisture	BAL	7738838	N/A	2021/12/18	Prgya Panchal

Bureau Veritas ID: RJO902
Sample ID: BH/MW1/5
Matrix: Soil

Collected: 2021/12/15
Shipped:
Received: 2021/12/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7734793	N/A	2021/12/21	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7737156	2021/12/17	2021/12/18	Anna Stuglik-Rolland
Moisture	BAL	7736376	N/A	2021/12/17	Muhammad Chhaidan
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7741535	N/A	2021/12/20	Blair Gannon

Bureau Veritas ID: RJO903
Sample ID: BH/MW2/4
Matrix: Soil

Collected: 2021/12/15
Shipped:
Received: 2021/12/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7734792	N/A	2021/12/21	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	7740057	2021/12/19	2021/12/20	Violeta Porcila
Acid Extractable Metals by ICPMS	ICP/MS	7741090	2021/12/20	2021/12/21	Viviana Canzonieri
Moisture	BAL	7736376	N/A	2021/12/17	Muhammad Chhaidan
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7738076	2021/12/18	2021/12/18	Jonghan Yoon
pH CaCl2 EXTRACT	AT	7741646	2021/12/20	2021/12/20	Taslima Aktar

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TEST SUMMARY

Bureau Veritas ID: RJO904
Sample ID: BH/MW2/5
Matrix: Soil

Collected: 2021/12/15
Shipped:
Received: 2021/12/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7738356	N/A	2021/12/19	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7737156	2021/12/17	2021/12/18	Anna Stuglik-Rolland
Moisture	BAL	7736376	N/A	2021/12/17	Muhammad Chhaidan

Bureau Veritas ID: RJO905
Sample ID: BH/MW2/6
Matrix: Soil

Collected: 2021/12/15
Shipped:
Received: 2021/12/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7734793	N/A	2021/12/21	Automated Statchk
Moisture	BAL	7736848	N/A	2021/12/17	Muhammad Chhaidan
Volatile Organic Compounds in Soil	GC/MS	7741584	N/A	2021/12/20	Ancheol Jeong

Bureau Veritas ID: RJO906
Sample ID: DUP51
Matrix: Soil

Collected: 2021/12/15
Shipped:
Received: 2021/12/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7734793	N/A	2021/12/21	Automated Statchk
Moisture	BAL	7736848	N/A	2021/12/17	Muhammad Chhaidan
Volatile Organic Compounds in Soil	GC/MS	7741584	N/A	2021/12/20	Ancheol Jeong

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GENERAL COMMENTS

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

Package 1	2.0°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7737156	o-Terphenyl	2021/12/18	91	60 - 130	91	60 - 130	100	%		
7738076	D10-Anthracene	2021/12/18	92	50 - 130	97	50 - 130	96	%		
7738076	D14-Terphenyl (FS)	2021/12/18	100	50 - 130	103	50 - 130	104	%		
7738076	D8-Acenaphthylene	2021/12/18	90	50 - 130	96	50 - 130	97	%		
7738356	1,4-Difluorobenzene	2021/12/19	95	60 - 140	96	60 - 140	103	%		
7738356	4-Bromofluorobenzene	2021/12/19	105	60 - 140	104	60 - 140	92	%		
7738356	D10-o-Xylene	2021/12/19	98	60 - 140	103	60 - 140	106	%		
7738356	D4-1,2-Dichloroethane	2021/12/19	96	60 - 140	99	60 - 140	104	%		
7741535	4-Bromofluorobenzene	2021/12/20	100	60 - 140	102	60 - 140	90	%		
7741535	D10-o-Xylene	2021/12/20	98	60 - 130	95	60 - 130	100	%		
7741535	D4-1,2-Dichloroethane	2021/12/20	98	60 - 140	105	60 - 140	106	%		
7741535	D8-Toluene	2021/12/20	104	60 - 140	102	60 - 140	99	%		
7741584	4-Bromofluorobenzene	2021/12/20	101	60 - 140	102	60 - 140	99	%		
7741584	D10-o-Xylene	2021/12/20	93	60 - 130	102	60 - 130	97	%		
7741584	D4-1,2-Dichloroethane	2021/12/20	106	60 - 140	111	60 - 140	116	%		
7741584	D8-Toluene	2021/12/20	102	60 - 140	100	60 - 140	96	%		
7736376	Moisture	2021/12/17							2.5	20
7736848	Moisture	2021/12/17							17	20
7737156	F2 (C10-C16 Hydrocarbons)	2021/12/18	95	50 - 130	98	80 - 120	<10	ug/g	NC	30
7737156	F3 (C16-C34 Hydrocarbons)	2021/12/18	93	50 - 130	95	80 - 120	<50	ug/g	NC	30
7737156	F4 (C34-C50 Hydrocarbons)	2021/12/18	93	50 - 130	94	80 - 120	<50	ug/g	NC	30
7738076	1-Methylnaphthalene	2021/12/18	96	50 - 130	105	50 - 130	<0.0050	ug/g	NC	40
7738076	2-Methylnaphthalene	2021/12/18	97	50 - 130	106	50 - 130	<0.0050	ug/g	NC	40
7738076	Acenaphthene	2021/12/18	89	50 - 130	95	50 - 130	<0.0050	ug/g	NC	40
7738076	Acenaphthylene	2021/12/18	84	50 - 130	91	50 - 130	<0.0050	ug/g	NC	40
7738076	Anthracene	2021/12/18	88	50 - 130	92	50 - 130	<0.0050	ug/g	NC	40
7738076	Benzo(a)anthracene	2021/12/18	91	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
7738076	Benzo(a)pyrene	2021/12/18	91	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
7738076	Benzo(b/j)fluoranthene	2021/12/18	93	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
7738076	Benzo(g,h,i)perylene	2021/12/18	90	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
7738076	Benzo(k)fluoranthene	2021/12/18	86	50 - 130	91	50 - 130	<0.0050	ug/g	NC	40

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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
7738076	Chrysene	2021/12/18	96	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
7738076	Dibenzo(a,h)anthracene	2021/12/18	86	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40
7738076	Fluoranthene	2021/12/18	99	50 - 130	104	50 - 130	<0.0050	ug/g	NC	40
7738076	Fluorene	2021/12/18	95	50 - 130	101	50 - 130	<0.0050	ug/g	NC	40
7738076	Indeno(1,2,3-cd)pyrene	2021/12/18	93	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
7738076	Naphthalene	2021/12/18	80	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40
7738076	Phenanthrene	2021/12/18	94	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
7738076	Pyrene	2021/12/18	98	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
7738356	Benzene	2021/12/19	93	50 - 140	98	50 - 140	<0.020	ug/g	NC	50
7738356	Ethylbenzene	2021/12/19	103	50 - 140	108	50 - 140	<0.020	ug/g	NC	50
7738356	F1 (C6-C10) - BTEX	2021/12/19					<10	ug/g	NC	30
7738356	F1 (C6-C10)	2021/12/19	82	60 - 140	90	80 - 120	<10	ug/g	NC	30
7738356	o-Xylene	2021/12/19	101	50 - 140	106	50 - 140	<0.020	ug/g	NC	50
7738356	p+m-Xylene	2021/12/19	100	50 - 140	104	50 - 140	<0.040	ug/g	NC	50
7738356	Toluene	2021/12/19	91	50 - 140	96	50 - 140	<0.020	ug/g	NC	50
7738356	Total Xylenes	2021/12/19					<0.040	ug/g	NC	50
7738838	Moisture	2021/12/18							6.0	20
7740057	Chromium (VI)	2021/12/20	86	70 - 130	92	80 - 120	<0.18	ug/g	31	35
7741090	Acid Extractable Antimony (Sb)	2021/12/21	101	75 - 125	103	80 - 120	<0.20	ug/g	NC	30
7741090	Acid Extractable Arsenic (As)	2021/12/21	96	75 - 125	103	80 - 120	<1.0	ug/g	2.9	30
7741090	Acid Extractable Barium (Ba)	2021/12/21	105	75 - 125	100	80 - 120	<0.50	ug/g	3.3	30
7741090	Acid Extractable Beryllium (Be)	2021/12/21	97	75 - 125	100	80 - 120	<0.20	ug/g	NC	30
7741090	Acid Extractable Boron (B)	2021/12/21	90	75 - 125	99	80 - 120	<5.0	ug/g	NC	30
7741090	Acid Extractable Cadmium (Cd)	2021/12/21	98	75 - 125	101	80 - 120	<0.10	ug/g	NC	30
7741090	Acid Extractable Chromium (Cr)	2021/12/21	97	75 - 125	102	80 - 120	<1.0	ug/g	12	30
7741090	Acid Extractable Cobalt (Co)	2021/12/21	97	75 - 125	104	80 - 120	<0.10	ug/g	4.9	30
7741090	Acid Extractable Copper (Cu)	2021/12/21	92	75 - 125	101	80 - 120	<0.50	ug/g	4.1	30
7741090	Acid Extractable Lead (Pb)	2021/12/21	99	75 - 125	104	80 - 120	<1.0	ug/g	6.9	30
7741090	Acid Extractable Mercury (Hg)	2021/12/21	85	75 - 125	90	80 - 120	<0.050	ug/g	NC	30
7741090	Acid Extractable Molybdenum (Mo)	2021/12/21	99	75 - 125	102	80 - 120	<0.50	ug/g	NC	30
7741090	Acid Extractable Nickel (Ni)	2021/12/21	97	75 - 125	104	80 - 120	<0.50	ug/g	0.43	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
7741090	Acid Extractable Selenium (Se)	2021/12/21	98	75 - 125	103	80 - 120	<0.50	ug/g	NC	30
7741090	Acid Extractable Silver (Ag)	2021/12/21	99	75 - 125	104	80 - 120	<0.20	ug/g	NC	30
7741090	Acid Extractable Thallium (Tl)	2021/12/21	98	75 - 125	106	80 - 120	<0.050	ug/g	NC	30
7741090	Acid Extractable Uranium (U)	2021/12/21	98	75 - 125	103	80 - 120	<0.050	ug/g	11	30
7741090	Acid Extractable Vanadium (V)	2021/12/21	98	75 - 125	101	80 - 120	<5.0	ug/g	14	30
7741090	Acid Extractable Zinc (Zn)	2021/12/21	93	75 - 125	106	80 - 120	<5.0	ug/g	5.0	30
7741535	1,1,1,2-Tetrachloroethane	2021/12/20	91	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7741535	1,1,1-Trichloroethane	2021/12/20	92	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7741535	1,1,2,2-Tetrachloroethane	2021/12/20	88	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
7741535	1,1,2-Trichloroethane	2021/12/20	94	60 - 140	106	60 - 130	<0.040	ug/g	NC	50
7741535	1,1-Dichloroethane	2021/12/20	89	60 - 140	102	60 - 130	<0.040	ug/g	NC	50
7741535	1,1-Dichloroethylene	2021/12/20	89	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7741535	1,2-Dichlorobenzene	2021/12/20	87	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7741535	1,2-Dichloroethane	2021/12/20	88	60 - 140	101	60 - 130	<0.049	ug/g	NC	50
7741535	1,2-Dichloropropane	2021/12/20	89	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
7741535	1,3-Dichlorobenzene	2021/12/20	96	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7741535	1,4-Dichlorobenzene	2021/12/20	91	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
7741535	Acetone (2-Propanone)	2021/12/20	91	60 - 140	103	60 - 140	<0.49	ug/g	NC	50
7741535	Benzene	2021/12/20	85	60 - 140	97	60 - 130	<0.0060	ug/g	NC	50
7741535	Bromodichloromethane	2021/12/20	93	60 - 140	107	60 - 130	<0.040	ug/g	NC	50
7741535	Bromoform	2021/12/20	92	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7741535	Bromomethane	2021/12/20	91	60 - 140	104	60 - 140	<0.040	ug/g	NC	50
7741535	Carbon Tetrachloride	2021/12/20	90	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
7741535	Chlorobenzene	2021/12/20	89	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
7741535	Chloroform	2021/12/20	90	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
7741535	cis-1,2-Dichloroethylene	2021/12/20	92	60 - 140	106	60 - 130	<0.040	ug/g	NC	50
7741535	cis-1,3-Dichloropropene	2021/12/20	90	60 - 140	105	60 - 130	<0.030	ug/g	NC	50
7741535	Dibromochloromethane	2021/12/20	91	60 - 140	102	60 - 130	<0.040	ug/g	NC	50
7741535	Dichlorodifluoromethane (FREON 12)	2021/12/20	87	60 - 140	100	60 - 140	<0.040	ug/g	NC	50
7741535	Ethylbenzene	2021/12/20	82	60 - 140	90	60 - 130	<0.010	ug/g	NC	50
7741535	Ethylene Dibromide	2021/12/20	88	60 - 140	100	60 - 130	<0.040	ug/g	NC	50

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
7741535	F1 (C6-C10) - BTEX	2021/12/20					<10	ug/g	NC	30
7741535	F1 (C6-C10)	2021/12/20	108	60 - 140	98	80 - 120	<10	ug/g	NC	30
7741535	Hexane	2021/12/20	93	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7741535	Methyl Ethyl Ketone (2-Butanone)	2021/12/20	95	60 - 140	112	60 - 140	<0.40	ug/g	NC	50
7741535	Methyl Isobutyl Ketone	2021/12/20	94	60 - 140	115	60 - 130	<0.40	ug/g	NC	50
7741535	Methyl t-butyl ether (MTBE)	2021/12/20	85	60 - 140	97	60 - 130	<0.040	ug/g	NC	50
7741535	Methylene Chloride(Dichloromethane)	2021/12/20	93	60 - 140	108	60 - 130	<0.049	ug/g	NC	50
7741535	o-Xylene	2021/12/20	81	60 - 140	90	60 - 130	<0.020	ug/g	NC	50
7741535	p+m-Xylene	2021/12/20	85	60 - 140	94	60 - 130	<0.020	ug/g	NC	50
7741535	Styrene	2021/12/20	95	60 - 140	108	60 - 130	<0.040	ug/g	NC	50
7741535	Tetrachloroethylene	2021/12/20	85	60 - 140	92	60 - 130	<0.040	ug/g	NC	50
7741535	Toluene	2021/12/20	93	60 - 140	103	60 - 130	<0.020	ug/g	NC	50
7741535	Total Xylenes	2021/12/20					<0.020	ug/g	NC	50
7741535	trans-1,2-Dichloroethylene	2021/12/20	92	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
7741535	trans-1,3-Dichloropropene	2021/12/20	102	60 - 140	116	60 - 130	<0.040	ug/g	NC	50
7741535	Trichloroethylene	2021/12/20	95	60 - 140	107	60 - 130	<0.010	ug/g	NC	50
7741535	Trichlorofluoromethane (FREON 11)	2021/12/20	90	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
7741535	Vinyl Chloride	2021/12/20	94	60 - 140	108	60 - 130	<0.019	ug/g	NC	50
7741584	1,1,1,2-Tetrachloroethane	2021/12/20	93	60 - 140	105	60 - 130	<0.040	ug/g	NC	50
7741584	1,1,1-Trichloroethane	2021/12/20	99	60 - 140	109	60 - 130	<0.040	ug/g	NC	50
7741584	1,1,2,2-Tetrachloroethane	2021/12/20	84	60 - 140	106	60 - 130	<0.040	ug/g	NC	50
7741584	1,1,2-Trichloroethane	2021/12/20	96	60 - 140	113	60 - 130	<0.040	ug/g	NC	50
7741584	1,1-Dichloroethane	2021/12/20	90	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7741584	1,1-Dichloroethylene	2021/12/20	95	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
7741584	1,2-Dichlorobenzene	2021/12/20	87	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
7741584	1,2-Dichloroethane	2021/12/20	92	60 - 140	108	60 - 130	<0.049	ug/g	NC	50
7741584	1,2-Dichloropropane	2021/12/20	90	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
7741584	1,3-Dichlorobenzene	2021/12/20	90	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
7741584	1,4-Dichlorobenzene	2021/12/20	103	60 - 140	113	60 - 130	<0.040	ug/g	NC	50
7741584	Acetone (2-Propanone)	2021/12/20	91	60 - 140	116	60 - 140	<0.49	ug/g	NC	50
7741584	Benzene	2021/12/20	83	60 - 140	92	60 - 130	<0.0060	ug/g	NC	50

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7741584	Bromodichloromethane	2021/12/20	95	60 - 140	110	60 - 130	<0.040	ug/g	NC	50
7741584	Bromoform	2021/12/20	89	60 - 140	108	60 - 130	<0.040	ug/g	NC	50
7741584	Bromomethane	2021/12/20	90	60 - 140	102	60 - 140	<0.040	ug/g	NC	50
7741584	Carbon Tetrachloride	2021/12/20	100	60 - 140	109	60 - 130	<0.040	ug/g	NC	50
7741584	Chlorobenzene	2021/12/20	89	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
7741584	Chloroform	2021/12/20	93	60 - 140	106	60 - 130	<0.040	ug/g	NC	50
7741584	cis-1,2-Dichloroethylene	2021/12/20	93	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7741584	cis-1,3-Dichloropropene	2021/12/20	87	60 - 140	101	60 - 130	<0.030	ug/g	NC	50
7741584	Dibromochloromethane	2021/12/20	89	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7741584	Dichlorodifluoromethane (FREON 12)	2021/12/20	79	60 - 140	96	60 - 140	<0.040	ug/g	NC	50
7741584	Ethylbenzene	2021/12/20	83	60 - 140	91	60 - 130	<0.010	ug/g	NC	50
7741584	Ethylene Dibromide	2021/12/20	86	60 - 140	102	60 - 130	<0.040	ug/g	NC	50
7741584	Hexane	2021/12/20	93	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
7741584	Methyl Ethyl Ketone (2-Butanone)	2021/12/20	93	60 - 140	123	60 - 140	<0.40	ug/g	NC	50
7741584	Methyl Isobutyl Ketone	2021/12/20	90	60 - 140	118	60 - 130	<0.40	ug/g	NC	50
7741584	Methyl t-butyl ether (MTBE)	2021/12/20	84	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7741584	Methylene Chloride(Dichloromethane)	2021/12/20	100	60 - 140	114	60 - 130	<0.049	ug/g	NC	50
7741584	o-Xylene	2021/12/20	84	60 - 140	92	60 - 130	<0.020	ug/g	NC	50
7741584	p+m-Xylene	2021/12/20	89	60 - 140	97	60 - 130	<0.020	ug/g	NC	50
7741584	Styrene	2021/12/20	93	60 - 140	105	60 - 130	<0.040	ug/g	NC	50
7741584	Tetrachloroethylene	2021/12/20	88	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7741584	Toluene	2021/12/20	85	60 - 140	93	60 - 130	<0.020	ug/g	NC	50
7741584	Total Xylenes	2021/12/20					<0.020	ug/g	NC	50
7741584	trans-1,2-Dichloroethylene	2021/12/20	94	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
7741584	trans-1,3-Dichloropropene	2021/12/20	95	60 - 140	110	60 - 130	<0.040	ug/g	NC	50
7741584	Trichloroethylene	2021/12/20	98	60 - 140	107	60 - 130	<0.010	ug/g	NC	50
7741584	Trichlorofluoromethane (FREON 11)	2021/12/20	96	60 - 140	105	60 - 130	<0.040	ug/g	NC	50
7741584	Vinyl Chloride	2021/12/20	89	60 - 140	98	60 - 130	<0.019	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
7741646	Available (CaCl2) pH	2021/12/20			100	97 - 103			0.11	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 (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).

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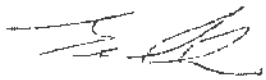
Bureau Veritas Job #: C1Z3446
Report Date: 2021/12/22

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: ASH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



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.

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Maxxam

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/2

CHAIN OF CUSTODY RECORD

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: Soil Engineers Ltd.	Company Name:	Quotation #:	☑ Regular TAT (5-7 days) Most analyses
Contact Name: Ram Sah	Contact Name: SAME	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 100-90 West Beaver Creek Road, Richmond Hill, Ontario L4B 1E7	Address:	Project #: 2111-E043	Rush TAT (Surcharges will be applied) ☐ 1 Day ☐ 2 Days ☐ 3-4 Days
Phone: 905 764 8535 Fax: 905 881 8335	Phone: Fax:	Site Location:	
Email: ram.sah@soilengineers ltd.com	Email:	Site #:	Date Required:
		Sampled By: Ashish	Rush Confirmation #:

FOR REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153	Other Regulations	Analysis Requested
☑ Table 1 ☐ Res/Park ☐ Med/Fine ☐ Table 2 ☐ Ind/Comm ☑ Coarse ☐ Table 3 ☑ Agri/Other ☐ Table ____ FOR RSC (PLEASE CIRCLE): (Y) / N	☐ CCME ☐ Sanitary Sewer Bylaw ☐ MISA ☐ Storm Sewer Bylaw ☐ PWQO ____ Region ☐ Other (Specify) ☐ REG 558 (MIN. 3 DAY TAT REQUIRED)	
Include Criteria on Certificate of Analysis: Y / N		

SAMPLES MUST BE KEPT COOL (≤ 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE)	BTEX/PHC F1-F4	VOCs	PAHs	Metal Scan: Hg, CrVI	pH	HOLD: DO NOT ANALYZE
1	BH/MW1/1A	2021-12-15	8:50	Soil	1						✓	
2	BH/MW1/3	2021-12-15	10:10	Soil	1				✓			
3	BH/MW1/4	2021-12-15	9:00	Soil	1					✓		
4	BH/MW1/5	2021-12-15	9:30	Soil	3		✓	✓				
5	BH/MW2/4	2021-12-15	10:45	Soil	2				✓	✓	✓	
6	BH/MW2/5	2021-12-15	11:15	Soil	3		✓					
7	BH/MW2/6	2021-12-15	11:45	Soil	3			✓				
8	DUP51	2021-12-15		Soil	3			✓				
9												
10												

LABORATORY USE ONLY		
CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	
Y	Y	1/4/1
COOLING MEDIA PRESENT: (Y) / N		
COMMENTS		

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
[signature]	2021/12/16	9:45	[signature]	2021/12/16	15:13

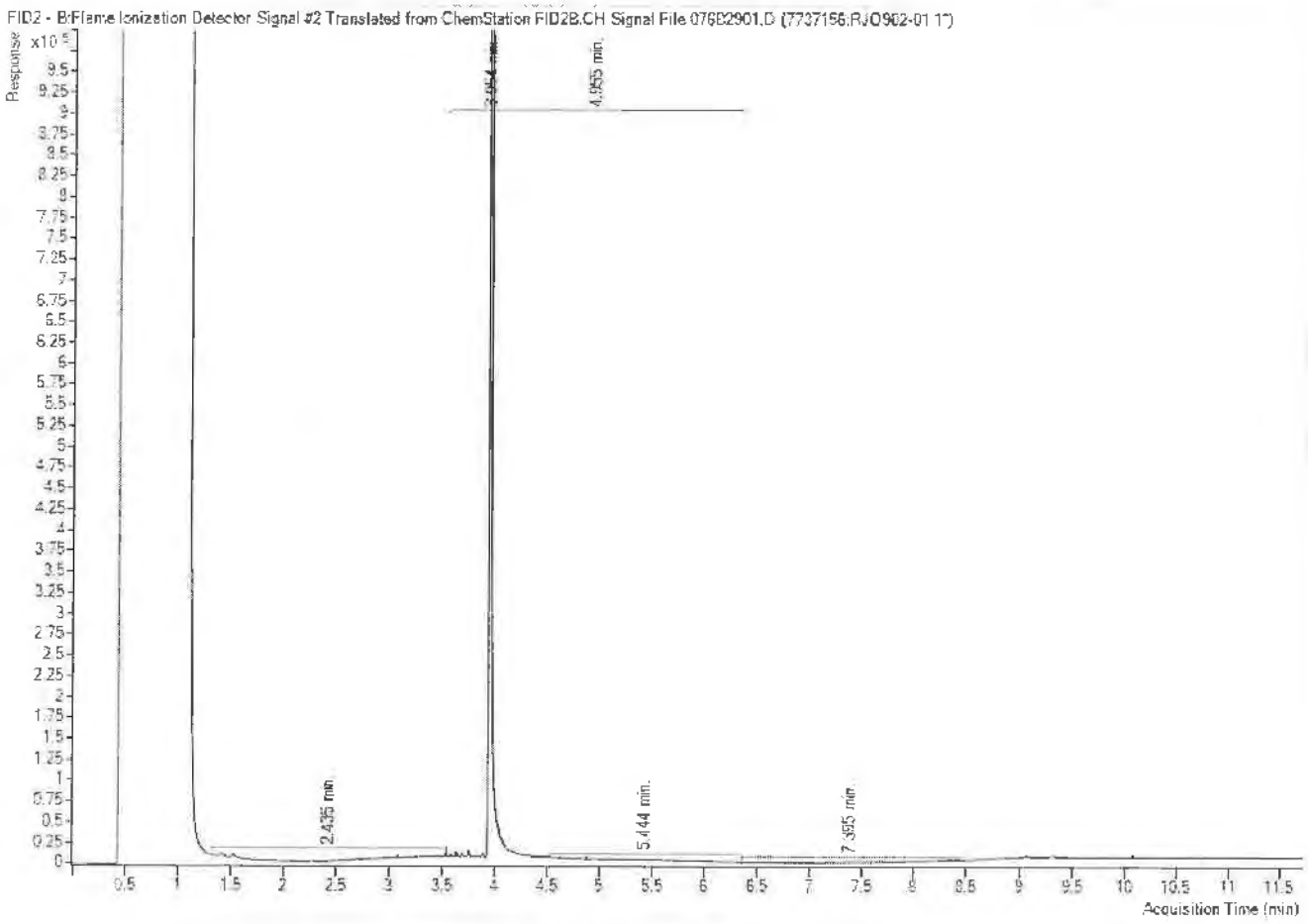
16-Dec-21 15:13
Antonella Brasil
C1Z3446

KSE ENV-1551

Bureau Veritas Job #: C1Z3446
Report Date: 2021/12/22
Bureau Veritas Sample: RJO902

Soil Engineers Ltd
Client Project #: 2111-E043
Client ID: BH/MW1/5

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

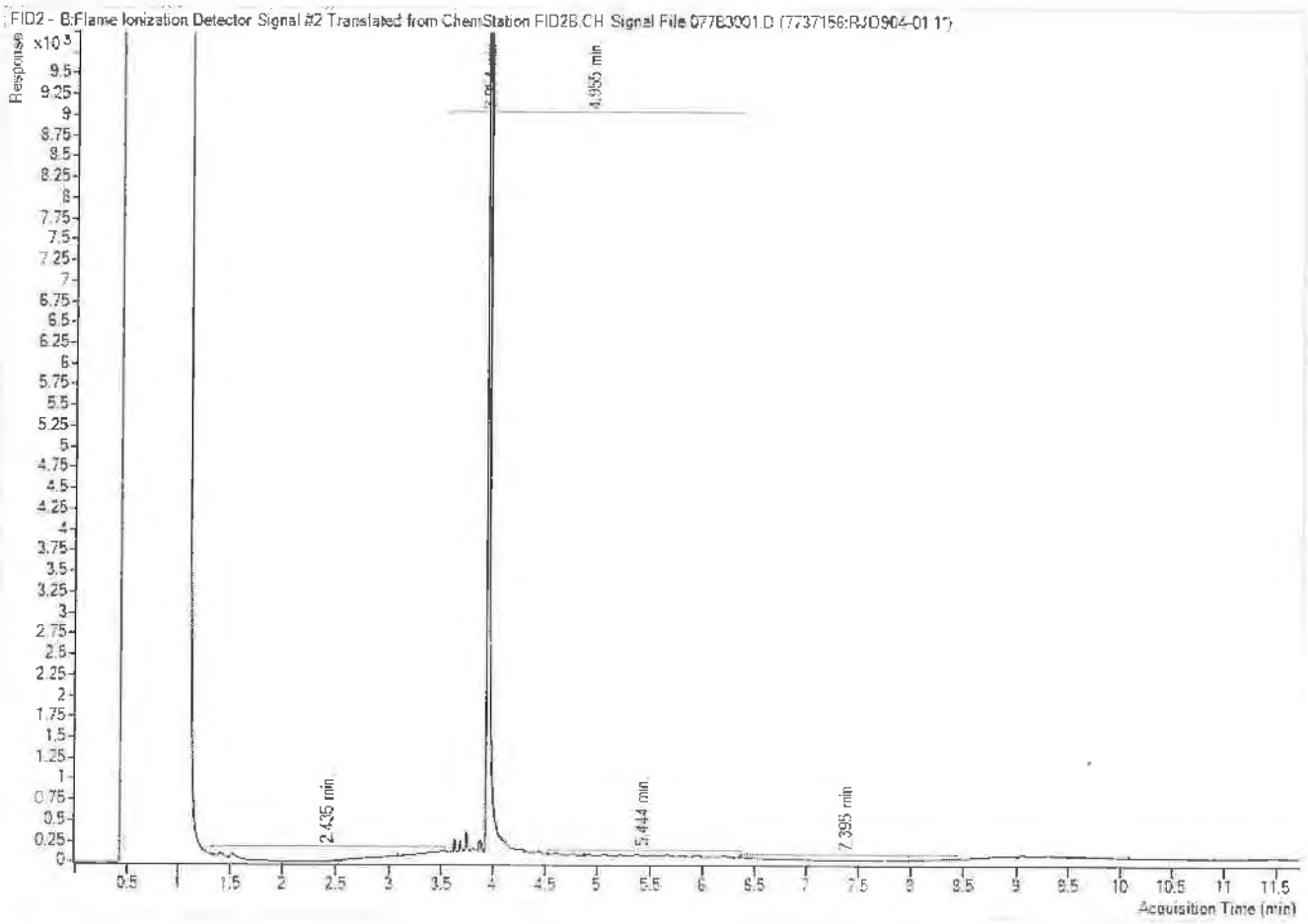


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C1Z3446
Report Date: 2021/12/22
Bureau Veritas Sample: RJO904

Soil Engineers Ltd
Client Project #: 2111-E043
Client ID: BH/MW2/5

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 2111-E043
Your C.O.C. #: n/a

Attention: Ram Sah

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

Report Date: 2021/12/31
Report #: R6946529
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1AB076
Received: 2021/12/21, 14:30

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	1	N/A	2021/12/24	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	1	N/A	2021/12/24		EPA 8260C m
Hexavalent Chromium in Soil by IC (1)	1	2021/12/24	2021/12/24	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	1	2021/12/24	2021/12/24	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS	1	2021/12/29	2021/12/30	CAM SOP-00447	EPA 6020B m
Moisture	2	N/A	2021/12/22	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	1	2021/12/23	2021/12/24	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs	1	N/A	2021/12/23	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas 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 Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, 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.
(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

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

Your Project #: 2111-E043
Your C.O.C. #: n/a

Attention: Ram Sah

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

Report Date: 2021/12/31
Report #: R6946529
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1AB076
Received: 2021/12/21, 14:30

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
31 Dec 2021 17:11:21

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

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O.REG 153 ICPMS METALS (SOIL)

Bureau Veritas ID		RLJ239		
Sampling Date		2021/12/20 10:15		
COC Number		n/a		
	UNITS	BH/MW4/4	RDL	QC Batch
Metals				
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	7757814
Acid Extractable Arsenic (As)	ug/g	1.5	1.0	7757814
Acid Extractable Barium (Ba)	ug/g	50	0.50	7757814
Acid Extractable Beryllium (Be)	ug/g	0.30	0.20	7757814
Acid Extractable Boron (B)	ug/g	5.3	5.0	7757814
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	7757814
Acid Extractable Chromium (Cr)	ug/g	25	1.0	7757814
Acid Extractable Cobalt (Co)	ug/g	5.1	0.10	7757814
Acid Extractable Copper (Cu)	ug/g	9.8	0.50	7757814
Acid Extractable Lead (Pb)	ug/g	4.9	1.0	7757814
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	7757814
Acid Extractable Nickel (Ni)	ug/g	12	0.50	7757814
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	7757814
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	7757814
Acid Extractable Thallium (Tl)	ug/g	0.11	0.050	7757814
Acid Extractable Uranium (U)	ug/g	0.49	0.050	7757814
Acid Extractable Vanadium (V)	ug/g	23	5.0	7757814
Acid Extractable Zinc (Zn)	ug/g	26	5.0	7757814
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	7757814

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 PAHS (SOIL)

Bureau Veritas ID		RLJ239		
Sampling Date		2021/12/20 10:15		
COC Number		n/a		
	UNITS	BH/MW4/4	RDL	QC Batch
Inorganics				
Moisture	%	15	1.0	7750337
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	7747610
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	<0.0050	0.0050	7753387
Acenaphthylene	ug/g	<0.0050	0.0050	7753387
Anthracene	ug/g	<0.0050	0.0050	7753387
Benzo(a)anthracene	ug/g	<0.0050	0.0050	7753387
Benzo(a)pyrene	ug/g	<0.0050	0.0050	7753387
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0050	7753387
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	7753387
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	7753387
Chrysene	ug/g	<0.0050	0.0050	7753387
Dibenzo(a,h)anthracene	ug/g	<0.0050	0.0050	7753387
Fluoranthene	ug/g	<0.0050	0.0050	7753387
Fluorene	ug/g	<0.0050	0.0050	7753387
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	7753387
1-Methylnaphthalene	ug/g	<0.0050	0.0050	7753387
2-Methylnaphthalene	ug/g	<0.0050	0.0050	7753387
Naphthalene	ug/g	<0.0050	0.0050	7753387
Phenanthrene	ug/g	<0.0050	0.0050	7753387
Pyrene	ug/g	<0.0050	0.0050	7753387
Surrogate Recovery (%)				
D10-Anthracene	%	107		7753387
D14-Terphenyl (FS)	%	105		7753387
D8-Acenaphthylene	%	88		7753387

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Bureau Veritas ID		RLJ240		
Sampling Date		2021/12/20 10:40		
COC Number		n/a		
	UNITS	BH/MW4/5	RDL	QC Batch
Inorganics				
Moisture	%	6.4	1.0	7750337
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	7747611
Volatile Organics				
Acetone (2-Propanone)	ug/g	<0.49	0.49	7751105
Benzene	ug/g	<0.0060	0.0060	7751105
Bromodichloromethane	ug/g	<0.040	0.040	7751105
Bromoform	ug/g	<0.040	0.040	7751105
Bromomethane	ug/g	<0.040	0.040	7751105
Carbon Tetrachloride	ug/g	<0.040	0.040	7751105
Chlorobenzene	ug/g	<0.040	0.040	7751105
Chloroform	ug/g	<0.040	0.040	7751105
Dibromochloromethane	ug/g	<0.040	0.040	7751105
1,2-Dichlorobenzene	ug/g	<0.040	0.040	7751105
1,3-Dichlorobenzene	ug/g	<0.040	0.040	7751105
1,4-Dichlorobenzene	ug/g	<0.040	0.040	7751105
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	0.040	7751105
1,1-Dichloroethane	ug/g	<0.040	0.040	7751105
1,2-Dichloroethane	ug/g	<0.049	0.049	7751105
1,1-Dichloroethylene	ug/g	<0.040	0.040	7751105
cis-1,2-Dichloroethylene	ug/g	<0.040	0.040	7751105
trans-1,2-Dichloroethylene	ug/g	<0.040	0.040	7751105
1,2-Dichloropropane	ug/g	<0.040	0.040	7751105
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	7751105
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	7751105
Ethylbenzene	ug/g	<0.010	0.010	7751105
Ethylene Dibromide	ug/g	<0.040	0.040	7751105
Hexane	ug/g	<0.040	0.040	7751105
Methylene Chloride(Dichloromethane)	ug/g	<0.049	0.049	7751105
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	0.40	7751105
Methyl Isobutyl Ketone	ug/g	<0.40	0.40	7751105
Methyl t-butyl ether (MTBE)	ug/g	<0.040	0.040	7751105
Styrene	ug/g	<0.040	0.040	7751105
1,1,1,2-Tetrachloroethane	ug/g	<0.040	0.040	7751105
1,1,2,2-Tetrachloroethane	ug/g	<0.040	0.040	7751105

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Bureau Veritas ID		RLJ240		
Sampling Date		2021/12/20 10:40		
COC Number		n/a		
	UNITS	BH/MW4/5	RDL	QC Batch
Tetrachloroethylene	ug/g	<0.040	0.040	7751105
Toluene	ug/g	<0.020	0.020	7751105
1,1,1-Trichloroethane	ug/g	<0.040	0.040	7751105
1,1,2-Trichloroethane	ug/g	<0.040	0.040	7751105
Trichloroethylene	ug/g	<0.010	0.010	7751105
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	0.040	7751105
Vinyl Chloride	ug/g	<0.019	0.019	7751105
p+m-Xylene	ug/g	<0.020	0.020	7751105
o-Xylene	ug/g	<0.020	0.020	7751105
Total Xylenes	ug/g	<0.020	0.020	7751105
F1 (C6-C10)	ug/g	<10	10	7751105
F1 (C6-C10) - BTEX	ug/g	<10	10	7751105
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	7753688
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7753688
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7753688
Reached Baseline at C50	ug/g	Yes		7753688
Surrogate Recovery (%)				
o-Terphenyl	%	99		7753688
4-Bromofluorobenzene	%	98		7751105
D10-o-Xylene	%	103		7751105
D4-1,2-Dichloroethane	%	99		7751105
D8-Toluene	%	99		7751105

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Bureau Veritas ID		RLJ239		
Sampling Date		2021/12/20 10:15		
COC Number		n/a		
	UNITS	BH/MW4/4	RDL	QC Batch
Inorganics				
Chromium (VI)	ug/g	<0.18	0.18	7753813

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C1A8076
Report Date: 2021/12/31

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: NIK

TEST SUMMARY

Bureau Veritas ID: RLJ239
Sample ID: BH/MW4/4
Matrix: Soil

Collected: 2021/12/20
Shipped:
Received: 2021/12/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7747610	N/A	2021/12/24	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	7753813	2021/12/24	2021/12/24	Lusine Khachatryan
Acid Extractable Metals by ICPMS	ICP/MS	7757814	2021/12/29	2021/12/30	Viviana Canzonieri
Moisture	BAL	7750337	N/A	2021/12/22	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7753387	2021/12/23	2021/12/24	Jonghan Yoon

Bureau Veritas ID: RLJ240
Sample ID: BH/MW4/5
Matrix: Soil

Collected: 2021/12/20
Shipped:
Received: 2021/12/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7747611	N/A	2021/12/24	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7753688	2021/12/24	2021/12/24	Jeevaraj Jeevaratnam
Moisture	BAL	7750337	N/A	2021/12/22	Simrat Bhathal
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7751105	N/A	2021/12/23	Juan Pangilinan

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GENERAL COMMENTS

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

Package 1	4.0°C

Cooler custody seal was present and intact.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7751105	4-Bromofluorobenzene	2021/12/23	102	60 - 140	101	60 - 140	97	%		
7751105	D10-o-Xylene	2021/12/23	102	60 - 130	98	60 - 130	93	%		
7751105	D4-1,2-Dichloroethane	2021/12/23	100	60 - 140	99	60 - 140	98	%		
7751105	D8-Toluene	2021/12/23	101	60 - 140	102	60 - 140	100	%		
7753387	D10-Anthracene	2021/12/23	116	50 - 130	96	50 - 130	111	%		
7753387	D14-Terphenyl (FS)	2021/12/23	101	50 - 130	100	50 - 130	106	%		
7753387	D8-Acenaphthylene	2021/12/23	91	50 - 130	95	50 - 130	90	%		
7753688	o-Terphenyl	2021/12/24	100	60 - 130	97	60 - 130	98	%		
7750337	Moisture	2021/12/22							3.3	20
7751105	1,1,1,2-Tetrachloroethane	2021/12/23	95	60 - 140	93	60 - 130	<0.040	ug/g	NC	50
7751105	1,1,1-Trichloroethane	2021/12/23	97	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
7751105	1,1,2,2-Tetrachloroethane	2021/12/23	87	60 - 140	85	60 - 130	<0.040	ug/g	NC	50
7751105	1,1,2-Trichloroethane	2021/12/23	94	60 - 140	92	60 - 130	<0.040	ug/g	NC	50
7751105	1,1-Dichloroethane	2021/12/23	94	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7751105	1,1-Dichloroethylene	2021/12/23	93	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7751105	1,2-Dichlorobenzene	2021/12/23	87	60 - 140	86	60 - 130	<0.040	ug/g	NC	50
7751105	1,2-Dichloroethane	2021/12/23	91	60 - 140	89	60 - 130	<0.049	ug/g	NC	50
7751105	1,2-Dichloropropane	2021/12/23	93	60 - 140	91	60 - 130	<0.040	ug/g	NC	50
7751105	1,3-Dichlorobenzene	2021/12/23	91	60 - 140	90	60 - 130	<0.040	ug/g	NC	50
7751105	1,4-Dichlorobenzene	2021/12/23	105	60 - 140	105	60 - 130	<0.040	ug/g	NC	50
7751105	Acetone (2-Propanone)	2021/12/23	91	60 - 140	96	60 - 140	<0.49	ug/g	8.0	50
7751105	Benzene	2021/12/23	85	60 - 140	84	60 - 130	<0.0060	ug/g	0.23	50
7751105	Bromodichloromethane	2021/12/23	95	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7751105	Bromoform	2021/12/23	91	60 - 140	88	60 - 130	<0.040	ug/g	NC	50
7751105	Bromomethane	2021/12/23	92	60 - 140	86	60 - 140	<0.040	ug/g	NC	50
7751105	Carbon Tetrachloride	2021/12/23	94	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
7751105	Chlorobenzene	2021/12/23	94	60 - 140	92	60 - 130	<0.040	ug/g	NC	50
7751105	Chloroform	2021/12/23	91	60 - 140	91	60 - 130	<0.040	ug/g	NC	50
7751105	cis-1,2-Dichloroethylene	2021/12/23	96	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7751105	cis-1,3-Dichloropropene	2021/12/23	97	60 - 140	90	60 - 130	<0.030	ug/g	NC	50
7751105	Dibromochloromethane	2021/12/23	93	60 - 140	91	60 - 130	<0.040	ug/g	NC	50

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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
7751105	Dichlorodifluoromethane (FREON 12)	2021/12/23	71	60 - 140	72	60 - 140	<0.040	ug/g	NC	50
7751105	Ethylbenzene	2021/12/23	86	60 - 140	85	60 - 130	<0.010	ug/g	3.3	50
7751105	Ethylene Dibromide	2021/12/23	92	60 - 140	89	60 - 130	<0.040	ug/g	NC	50
7751105	F1 (C6-C10) - BTEX	2021/12/23					<10	ug/g	17	30
7751105	F1 (C6-C10)	2021/12/23	83	60 - 140	90	80 - 120	<10	ug/g	16	30
7751105	Hexane	2021/12/23	91	60 - 140	94	60 - 130	<0.040	ug/g	1.5	50
7751105	Methyl Ethyl Ketone (2-Butanone)	2021/12/23	99	60 - 140	102	60 - 140	<0.40	ug/g	NC	50
7751105	Methyl Isobutyl Ketone	2021/12/23	98	60 - 140	100	60 - 130	<0.40	ug/g	NC	50
7751105	Methyl t-butyl ether (MTBE)	2021/12/23	88	60 - 140	88	60 - 130	<0.040	ug/g	NC	50
7751105	Methylene Chloride(Dichloromethane)	2021/12/23	92	60 - 140	90	60 - 130	<0.049	ug/g	NC	50
7751105	o-Xylene	2021/12/23	87	60 - 140	85	60 - 130	<0.020	ug/g	5.1	50
7751105	p+m-Xylene	2021/12/23	94	60 - 140	90	60 - 130	<0.020	ug/g	3.6	50
7751105	Styrene	2021/12/23	98	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7751105	Tetrachloroethylene	2021/12/23	90	60 - 140	89	60 - 130	<0.040	ug/g	NC	50
7751105	Toluene	2021/12/23	99	60 - 140	96	60 - 130	<0.020	ug/g	3.1	50
7751105	Total Xylenes	2021/12/23					<0.020	ug/g	4.2	50
7751105	trans-1,2-Dichloroethylene	2021/12/23	93	60 - 140	93	60 - 130	<0.040	ug/g	NC	50
7751105	trans-1,3-Dichloropropene	2021/12/23	105	60 - 140	93	60 - 130	<0.040	ug/g	NC	50
7751105	Trichloroethylene	2021/12/23	97	60 - 140	97	60 - 130	<0.010	ug/g	NC	50
7751105	Trichlorofluoromethane (FREON 11)	2021/12/23	91	60 - 140	91	60 - 130	<0.040	ug/g	NC	50
7751105	Vinyl Chloride	2021/12/23	87	60 - 140	86	60 - 130	<0.019	ug/g	NC	50
7753387	1-Methylnaphthalene	2021/12/23	108	50 - 130	113	50 - 130	<0.0050	ug/g	8.1	40
7753387	2-Methylnaphthalene	2021/12/23	96	50 - 130	101	50 - 130	<0.0050	ug/g	NC	40
7753387	Acenaphthene	2021/12/23	97	50 - 130	100	50 - 130	<0.0050	ug/g	11	40
7753387	Acenaphthylene	2021/12/23	91	50 - 130	92	50 - 130	<0.0050	ug/g	NC	40
7753387	Anthracene	2021/12/23	104	50 - 130	105	50 - 130	<0.0050	ug/g	35	40
7753387	Benzo(a)anthracene	2021/12/23	102	50 - 130	101	50 - 130	<0.0050	ug/g	40	40
7753387	Benzo(a)pyrene	2021/12/23	98	50 - 130	102	50 - 130	<0.0050	ug/g	32	40
7753387	Benzo(b/j)fluoranthene	2021/12/23	96	50 - 130	101	50 - 130	<0.0050	ug/g	26	40
7753387	Benzo(g,h,i)perylene	2021/12/23	104	50 - 130	110	50 - 130	<0.0050	ug/g	11	40
7753387	Benzo(k)fluoranthene	2021/12/23	102	50 - 130	108	50 - 130	<0.0050	ug/g	NC	40

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7753387	Chrysene	2021/12/23	101	50 - 130	104	50 - 130	<0.0050	ug/g	22	40
7753387	Dibenzo(a,h)anthracene	2021/12/23	121	50 - 130	112	50 - 130	<0.0050	ug/g	NC	40
7753387	Fluoranthene	2021/12/23	106	50 - 130	108	50 - 130	<0.0050	ug/g	28	40
7753387	Fluorene	2021/12/23	98	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
7753387	Indeno(1,2,3-cd)pyrene	2021/12/23	104	50 - 130	110	50 - 130	<0.0050	ug/g	NC	40
7753387	Naphthalene	2021/12/23	81	50 - 130	92	50 - 130	<0.0050	ug/g	NC	40
7753387	Phenanthrene	2021/12/23	96	50 - 130	103	50 - 130	<0.0050	ug/g	31	40
7753387	Pyrene	2021/12/23	104	50 - 130	109	50 - 130	<0.0050	ug/g	38	40
7753688	F2 (C10-C16 Hydrocarbons)	2021/12/24	101	50 - 130	98	80 - 120	<10	ug/g	NC	30
7753688	F3 (C16-C34 Hydrocarbons)	2021/12/24	100	50 - 130	97	80 - 120	<50	ug/g	NC	30
7753688	F4 (C34-C50 Hydrocarbons)	2021/12/24	101	50 - 130	99	80 - 120	<50	ug/g	NC	30
7753813	Chromium (VI)	2021/12/24	35 (1)	70 - 130	93	80 - 120	<0.18	ug/g	NC (2)	35
7757814	Acid Extractable Antimony (Sb)	2021/12/30	92	75 - 125	100	80 - 120	<0.20	ug/g	NC	30
7757814	Acid Extractable Arsenic (As)	2021/12/30	96	75 - 125	101	80 - 120	<1.0	ug/g	4.2	30
7757814	Acid Extractable Barium (Ba)	2021/12/30	NC	75 - 125	96	80 - 120	<0.50	ug/g	0.15	30
7757814	Acid Extractable Beryllium (Be)	2021/12/30	94	75 - 125	97	80 - 120	<0.20	ug/g	NC	30
7757814	Acid Extractable Boron (B)	2021/12/30	88	75 - 125	94	80 - 120	<5.0	ug/g	NC	30
7757814	Acid Extractable Cadmium (Cd)	2021/12/30	93	75 - 125	98	80 - 120	<0.10	ug/g	2.6	30
7757814	Acid Extractable Chromium (Cr)	2021/12/30	95	75 - 125	102	80 - 120	<1.0	ug/g	3.4	30
7757814	Acid Extractable Cobalt (Co)	2021/12/30	96	75 - 125	101	80 - 120	<0.10	ug/g	3.5	30
7757814	Acid Extractable Copper (Cu)	2021/12/30	89	75 - 125	98	80 - 120	<0.50	ug/g	2.1	30
7757814	Acid Extractable Lead (Pb)	2021/12/30	327 (3)	75 - 125	101	80 - 120	<1.0	ug/g	1.8	30
7757814	Acid Extractable Mercury (Hg)	2021/12/30	78	75 - 125	87	80 - 120	<0.050	ug/g	20	30
7757814	Acid Extractable Molybdenum (Mo)	2021/12/30	95	75 - 125	98	80 - 120	<0.50	ug/g	NC	30
7757814	Acid Extractable Nickel (Ni)	2021/12/30	96	75 - 125	102	80 - 120	<0.50	ug/g	2.3	30
7757814	Acid Extractable Selenium (Se)	2021/12/30	97	75 - 125	103	80 - 120	<0.50	ug/g	NC	30
7757814	Acid Extractable Silver (Ag)	2021/12/30	93	75 - 125	98	80 - 120	<0.20	ug/g	NC	30
7757814	Acid Extractable Thallium (Tl)	2021/12/30	98	75 - 125	103	80 - 120	<0.050	ug/g	14	30
7757814	Acid Extractable Uranium (U)	2021/12/30	97	75 - 125	101	80 - 120	<0.050	ug/g	21	30
7757814	Acid Extractable Vanadium (V)	2021/12/30	95	75 - 125	97	80 - 120	<5.0	ug/g	4.6	30

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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
7757814	Acid Extractable Zinc (Zn)	2021/12/30	NC	75 - 125	96	80 - 120	<5.0	ug/g	13	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 (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.

(2) Detection limits were adjusted for high moisture content

(3) Sample inhomogeneity suspected.

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Bureau Veritas Job #: C1AB076
Report Date: 2021/12/31

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: NIK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

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.

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Maxxam

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/2

CHAIN OF CUSTODY RECORD

Invoice Information		Report Information (if differs from invoice)		Project Information (where applicable)	
Company Name:	Soil Engineers Ltd.	Company Name:	SAME	Quotation #:	
Contact Name:	Ram Sah	Contact Name:		P.O. #/ AFE#:	
Address:	100-90 West Beaver Creek Road	Address:		Project #:	2111-E043
	Richmond Hill, Ontario L4B 1E7			Site Location:	
Phone: 416 754 8515	Fax: 905 881 8335	Phone:	Fax:	Site #:	
Email:	ram.sah@soilengineers ltd.com	Email:		Sampled By:	Nikita

Turnaround Time (TAT) Required

- [x] Regular TAT (5-7 days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Rush TAT (Surcharges will be applied)

- [ ] 1 Day
- [ ] 2 Days
- [ ] 3-4 Days

Date Required:

Rush Confirmation #:

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153			Other Regulations	
[x] Table 1	[ ] Res/Park	[ ] Med/ Fine	[ ] CCME	[ ] Sanitary Sewer Bylaw
[ ] Table 2	[ ] Ind/Comm	[x] Coarse	[ ] MISA	[ ] Storm Sewer Bylaw
[ ] Table 3	[x] Agri/Other		[ ] PWQO	Region
[ ] Table ____			[ ] Other (Specify)	
FOR RSC (PLEASE CIRCLE) (Y) / N			[ ] REG 558 (MIN. 3 DAY TAT REQUIRED)	

Include Criteria on Certificate of Analysis: Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/PHCs F1-F4	VOCs	PAHs	Metal Scan, Hg, Cr(VI)	HOLD - DO NOT ANALYZE
1	BH/MW4/4	2021-12-20	10:15	Soil	2				✓	✓	
2	BH/MW4/5	2021-12-20	10:40	Soil	3		✓	✓			
3											
4											
5											
6											
7											
8											
9											
10											

LABORATORY USE ONLY

CUSTODY SEAL Y / N Present	Intact	COOLER TEMPERATURES
Y	Y	4/4/4

COOLING MEDIA PRESENT: (Y) / N

COMMENTS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Nikita / [illegible]	2021/12/21	10:00	[illegible signature]	2021/12/21	14:30

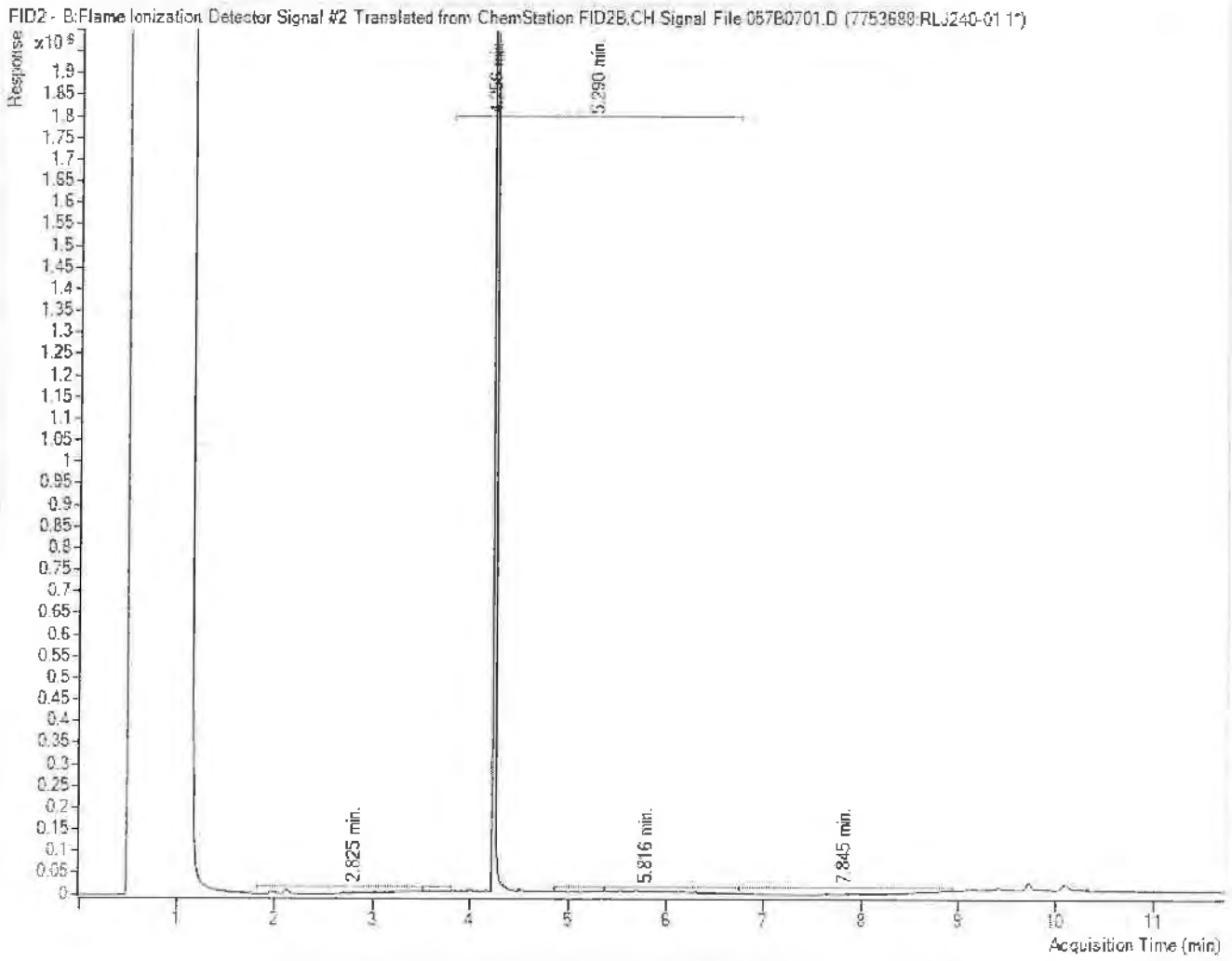
21-Dec-21 14:30
Antonella Brasil
C1AB076
KSE ENV-1669

BVH503199

Bureau Veritas Job #: C1AB076
Report Date: 2021/12/31
Bureau Veritas Sample: RLJ240

Soil Engineers Ltd
Client Project #: 2111-E043
Client ID: BH/MW4/5

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 2111-E043
Your C.O.C. #: n/a

Attention: Ram Sah

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

Report Date: 2022/01/05
Report #: R6949588
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C1AE432
Received: 2021/12/24, 11:16

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	1	N/A	2022/01/04	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	1	N/A	2022/01/04		EPA 8260C m
Hexavalent Chromium in Soil by IC (1)	2	2021/12/31	2021/12/31	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydro. CCME F1 & BTEX in Soil (2)	1	N/A	2021/12/29	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (3)	1	2021/12/30	2021/12/30	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS	2	2021/12/31	2022/01/04	CAM SOP-00447	EPA 6020B m
Moisture	4	N/A	2021/12/29	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	1	2021/12/30	2021/12/31	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	2	2021/12/31	2021/12/31	CAM SOP-00413	EPA 9045 D m
Volatile Organic Compounds in Soil	1	N/A	2022/01/04	CAM SOP-00228	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas 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 Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Your Project #: 2111-E043
Your C.O.C. #: n/a

Attention: Ram Sah

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

Report Date: 2022/01/05
Report #: R6949588
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C1AE432
Received: 2021/12/24, 11:16

* 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) 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

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: Antonella.Brasil@bureauveritas.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.

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID		RME125			RME128		
Sampling Date		2021/12/23 09:30			2021/12/23		
COC Number		n/a			n/a		
	UNITS	BH/MW3/4	RDL	QC Batch	DUPS2	RDL	QC Batch
Inorganics							
Moisture	%				8.2	1.0	7757496
Available (CaCl2) pH	pH	7.97		7761218	7.98		7761218
Chromium (VI)	ug/g	<0.18	0.18	7761155	<0.18	0.18	7761155
Metals							
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	7761224	<0.20	0.20	7761224
Acid Extractable Arsenic (As)	ug/g	1.3	1.0	7761224	1.4	1.0	7761224
Acid Extractable Barium (Ba)	ug/g	39	0.50	7761224	40	0.50	7761224
Acid Extractable Beryllium (Be)	ug/g	0.21	0.20	7761224	0.23	0.20	7761224
Acid Extractable Boron (B)	ug/g	<5.0	5.0	7761224	<5.0	5.0	7761224
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	7761224	<0.10	0.10	7761224
Acid Extractable Chromium (Cr)	ug/g	11	1.0	7761224	11	1.0	7761224
Acid Extractable Cobalt (Co)	ug/g	3.9	0.10	7761224	4.2	0.10	7761224
Acid Extractable Copper (Cu)	ug/g	8.1	0.50	7761224	8.4	0.50	7761224
Acid Extractable Lead (Pb)	ug/g	3.9	1.0	7761224	3.9	1.0	7761224
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	7761224	<0.50	0.50	7761224
Acid Extractable Nickel (Ni)	ug/g	8.3	0.50	7761224	8.5	0.50	7761224
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	7761224	<0.50	0.50	7761224
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	7761224	<0.20	0.20	7761224
Acid Extractable Thallium (Tl)	ug/g	0.077	0.050	7761224	0.082	0.050	7761224
Acid Extractable Uranium (U)	ug/g	0.50	0.050	7761224	0.47	0.050	7761224
Acid Extractable Vanadium (V)	ug/g	18	5.0	7761224	20	5.0	7761224
Acid Extractable Zinc (Zn)	ug/g	20	5.0	7761224	21	5.0	7761224
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	7761224	<0.050	0.050	7761224

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 PAHS (SOIL)

Bureau Veritas ID		RME125		
Sampling Date		2021/12/23 09:30		
COC Number		n/a		
	UNITS	BH/MW3/4	RDL	QC Batch
Inorganics				
Moisture	%	6.5	1.0	7757919
Calculated Parameters				
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	7753902
Polyaromatic Hydrocarbons				
Acenaphthene	ug/g	<0.0050	0.0050	7759216
Acenaphthylene	ug/g	<0.0050	0.0050	7759216
Anthracene	ug/g	<0.0050	0.0050	7759216
Benzo(a)anthracene	ug/g	<0.0050	0.0050	7759216
Benzo(a)pyrene	ug/g	<0.0050	0.0050	7759216
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0050	7759216
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	7759216
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	7759216
Chrysene	ug/g	<0.0050	0.0050	7759216
Dibenzo(a,h)anthracene	ug/g	<0.0050	0.0050	7759216
Fluoranthene	ug/g	<0.0050	0.0050	7759216
Fluorene	ug/g	<0.0050	0.0050	7759216
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	7759216
1-Methylnaphthalene	ug/g	<0.0050	0.0050	7759216
2-Methylnaphthalene	ug/g	<0.0050	0.0050	7759216
Naphthalene	ug/g	<0.0050	0.0050	7759216
Phenanthrene	ug/g	<0.0050	0.0050	7759216
Pyrene	ug/g	<0.0050	0.0050	7759216
Surrogate Recovery (%)				
D10-Anthracene	%	91		7759216
D14-Terphenyl (FS)	%	94		7759216
D8-Acenaphthylene	%	82		7759216

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C1AE432
Report Date: 2022/01/05

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: VIR

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

Bureau Veritas ID		RME126			RME126		
Sampling Date		2021/12/23 09:50			2021/12/23 09:50		
COC Number		n/a			n/a		
	UNITS	BH/MW3/5	RDL	QC Batch	BH/MW3/5 Lab-Dup	RDL	QC Batch
Inorganics							
Moisture	%	6.9	1.0	7757919			
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.020	0.020	7757351	<0.020	0.020	7757351
Toluene	ug/g	<0.020	0.020	7757351	<0.020	0.020	7757351
Ethylbenzene	ug/g	<0.020	0.020	7757351	<0.020	0.020	7757351
o-Xylene	ug/g	<0.020	0.020	7757351	<0.020	0.020	7757351
p+m-Xylene	ug/g	<0.040	0.040	7757351	<0.040	0.040	7757351
Total Xylenes	ug/g	<0.040	0.040	7757351	<0.040	0.040	7757351
F1 (C6-C10)	ug/g	<10	10	7757351	<10	10	7757351
F1 (C6-C10) - BTEX	ug/g	<10	10	7757351	<10	10	7757351
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	7759113			
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7759113			
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7759113			
Reached Baseline at C50	ug/g	Yes		7759113			
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	104		7757351	104		7757351
4-Bromofluorobenzene	%	79		7757351	85		7757351
D10-o-Xylene	%	108		7757351	101		7757351
D4-1,2-Dichloroethane	%	97		7757351	101		7757351
o-Terphenyl	%	99		7759113			

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

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O.REG 153 VOCS BY HS (SOIL)

Bureau Veritas ID		RME127			RME127		
Sampling Date		2021/12/23 10:20			2021/12/23 10:20		
COC Number		n/a			n/a		
	UNITS	BH/MW3/6	RDL	QC Batch	BH/MW3/6 Lab-Dup	RDL	QC Batch
Inorganics							
Moisture	%	5.9	1.0	7757496			
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	7754534			
Volatile Organics							
Acetone (2-Propanone)	ug/g	<0.49	0.49	7761536	<0.49	0.49	7761536
Benzene	ug/g	<0.0060	0.0060	7761536	<0.0060	0.0060	7761536
Bromodichloromethane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Bromoform	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Bromomethane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Carbon Tetrachloride	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Chlorobenzene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Chloroform	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Dibromochloromethane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
1,2-Dichlorobenzene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
1,3-Dichlorobenzene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
1,4-Dichlorobenzene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
1,1-Dichloroethane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
1,2-Dichloroethane	ug/g	<0.049	0.049	7761536	<0.049	0.049	7761536
1,1-Dichloroethylene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
cis-1,2-Dichloroethylene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
trans-1,2-Dichloroethylene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
1,2-Dichloropropane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	7761536	<0.030	0.030	7761536
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Ethylbenzene	ug/g	<0.010	0.010	7761536	<0.010	0.010	7761536
Ethylene Dibromide	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Hexane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Methylene Chloride(Dichloromethane)	ug/g	<0.049	0.049	7761536	<0.049	0.049	7761536
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	0.40	7761536	<0.40	0.40	7761536
Methyl Isobutyl Ketone	ug/g	<0.40	0.40	7761536	<0.40	0.40	7761536
Methyl t-butyl ether (MTBE)	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Styrene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
1,1,1,2-Tetrachloroethane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536

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

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O.REG 153 VOCS BY HS (SOIL)

Bureau Veritas ID		RME127			RME127		
Sampling Date		2021/12/23 10:20			2021/12/23 10:20		
COC Number		n/a			n/a		
	UNITS	BH/MW3/6	RDL	QC Batch	BH/MW3/6 Lab-Dup	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Tetrachloroethylene	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Toluene	ug/g	<0.020	0.020	7761536	<0.020	0.020	7761536
1,1,1-Trichloroethane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
1,1,2-Trichloroethane	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Trichloroethylene	ug/g	<0.010	0.010	7761536	<0.010	0.010	7761536
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	0.040	7761536	<0.040	0.040	7761536
Vinyl Chloride	ug/g	<0.019	0.019	7761536	<0.019	0.019	7761536
p+m-Xylene	ug/g	<0.020	0.020	7761536	<0.020	0.020	7761536
o-Xylene	ug/g	<0.020	0.020	7761536	<0.020	0.020	7761536
Total Xylenes	ug/g	<0.020	0.020	7761536	<0.020	0.020	7761536
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	101		7761536	102		7761536
D10-o-Xylene	%	127		7761536	131 (1)		7761536
D4-1,2-Dichloroethane	%	107		7761536	108		7761536
D8-Toluene	%	99		7761536	98		7761536

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
(1) The recovery for the extraction surrogate compound was above the upper control limit for duplicate analyses of the soil sample. Visible loss of methanol was observed in this sample. As a result, there is an increased level of uncertainty associated with the values reported for this sample.

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Bureau Veritas Job #: C1AE432
Report Date: 2022/01/05

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: VIR

TEST SUMMARY

Bureau Veritas ID: RME125
Sample ID: BH/MW3/4
Matrix: Soil

Collected: 2021/12/23
Shipped:
Received: 2021/12/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7753902	N/A	2022/01/04	Automated Statchk
Hexavalent Chromium in Soil by IC	IC/SPEC	7761155	2021/12/31	2021/12/31	Violeta Porcila
Acid Extractable Metals by ICPMS	ICP/MS	7761224	2021/12/31	2022/01/04	Viviana Canzonieri
Moisture	BAL	7757919	N/A	2021/12/29	Gurpreet Kaur (ONT)
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7759216	2021/12/30	2021/12/31	Mitesh Raj
pH CaCl2 EXTRACT	AT	7761218	2021/12/31	2021/12/31	Taslima Aktar

Bureau Veritas ID: RME126
Sample ID: BH/MW3/5
Matrix: Soil

Collected: 2021/12/23
Shipped:
Received: 2021/12/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7757351	N/A	2021/12/29	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7759113	2021/12/30	2021/12/30	Agnieszka Brzuzy-Snopko
Moisture	BAL	7757919	N/A	2021/12/29	Gurpreet Kaur (ONT)

Bureau Veritas ID: RME126 Dup
Sample ID: BH/MW3/5
Matrix: Soil

Collected: 2021/12/23
Shipped:
Received: 2021/12/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7757351	N/A	2021/12/29	Haibin Wu

Bureau Veritas ID: RME127
Sample ID: BH/MW3/6
Matrix: Soil

Collected: 2021/12/23
Shipped:
Received: 2021/12/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7754534	N/A	2022/01/04	Automated Statchk
Moisture	BAL	7757496	N/A	2021/12/29	Gurpreet Kaur (ONT)
Volatile Organic Compounds in Soil	GC/MS	7761536	N/A	2022/01/04	Ancheol Jeong

Bureau Veritas ID: RME127 Dup
Sample ID: BH/MW3/6
Matrix: Soil

Collected: 2021/12/23
Shipped:
Received: 2021/12/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds in Soil	GC/MS	7761536	N/A	2022/01/04	Ancheol Jeong

Bureau Veritas ID: RME128
Sample ID: DUPS2
Matrix: Soil

Collected: 2021/12/23
Shipped:
Received: 2021/12/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hexavalent Chromium in Soil by IC	IC/SPEC	7761155	2021/12/31	2021/12/31	Violeta Porcila
Acid Extractable Metals by ICPMS	ICP/MS	7761224	2021/12/31	2022/01/04	Viviana Canzonieri

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Bureau Veritas Job #: C1AE432
Report Date: 2022/01/05

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: VIR

TEST SUMMARY

Bureau Veritas ID: RME128
Sample ID: DUPS2
Matrix: Soil

Collected: 2021/12/23
Shipped:
Received: 2021/12/24

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7757496	N/A	2021/12/29	Gurpreet Kaur (ONT)
pH CaCl2 EXTRACT	AT	7761218	2021/12/31	2021/12/31	Taslima Aktar

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GENERAL COMMENTS

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

Package 1	2.7°C

Cooler custody seal was present and intact.

Revised Report (2022/01/05): Metals Parameters included .

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7757351	1,4-Difluorobenzene	2021/12/29	96	60 - 140	100	60 - 140	103	%		
7757351	4-Bromofluorobenzene	2021/12/29	101	60 - 140	97	60 - 140	77	%		
7757351	D10-o-Xylene	2021/12/29	101	60 - 140	96	60 - 140	100	%		
7757351	D4-1,2-Dichloroethane	2021/12/29	91	60 - 140	92	60 - 140	99	%		
7759113	o-Terphenyl	2021/12/30	98	60 - 130	96	60 - 130	100	%		
7759216	D10-Anthracene	2021/12/30	96	50 - 130	92	50 - 130	88	%		
7759216	D14-Terphenyl (FS)	2021/12/30	101	50 - 130	101	50 - 130	98	%		
7759216	D8-Acenaphthylene	2021/12/30	84	50 - 130	91	50 - 130	82	%		
7761536	4-Bromofluorobenzene	2021/12/31	101	60 - 140	103	60 - 140	101	%		
7761536	D10-o-Xylene	2021/12/31	136 (1)	60 - 130	103	60 - 130	97	%		
7761536	D4-1,2-Dichloroethane	2021/12/31	107	60 - 140	102	60 - 140	110	%		
7761536	D8-Toluene	2021/12/31	102	60 - 140	102	60 - 140	98	%		
7757351	Benzene	2021/12/29	89	50 - 140	95	50 - 140	<0.020	ug/g	NC	50
7757351	Ethylbenzene	2021/12/29	102	50 - 140	102	50 - 140	<0.020	ug/g	NC	50
7757351	F1 (C6-C10) - BTEX	2021/12/29					<10	ug/g	NC	30
7757351	F1 (C6-C10)	2021/12/29	86	60 - 140	86	80 - 120	<10	ug/g	NC	30
7757351	o-Xylene	2021/12/29	101	50 - 140	95	50 - 140	<0.020	ug/g	NC	50
7757351	p+m-Xylene	2021/12/29	99	50 - 140	95	50 - 140	<0.040	ug/g	NC	50
7757351	Toluene	2021/12/29	90	50 - 140	94	50 - 140	<0.020	ug/g	NC	50
7757351	Total Xylenes	2021/12/29					<0.040	ug/g	NC	50
7757496	Moisture	2021/12/29							3.3	20
7757919	Moisture	2021/12/29							1.5	20
7759113	F2 (C10-C16 Hydrocarbons)	2021/12/30	99	50 - 130	97	80 - 120	<10	ug/g	NC	30
7759113	F3 (C16-C34 Hydrocarbons)	2021/12/30	98	50 - 130	95	80 - 120	<50	ug/g	NC	30
7759113	F4 (C34-C50 Hydrocarbons)	2021/12/30	100	50 - 130	96	80 - 120	<50	ug/g	NC	30
7759216	1-Methylnaphthalene	2021/12/30	100	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
7759216	2-Methylnaphthalene	2021/12/30	96	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
7759216	Acenaphthene	2021/12/30	92	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
7759216	Acenaphthylene	2021/12/30	87	50 - 130	89	50 - 130	<0.0050	ug/g	NC	40
7759216	Anthracene	2021/12/30	98	50 - 130	91	50 - 130	<0.0050	ug/g	NC	40
7759216	Benzo(a)anthracene	2021/12/30	102	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40

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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
7759216	Benzo(a)pyrene	2021/12/30	98	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
7759216	Benzo(b/j)fluoranthene	2021/12/30	96	50 - 130	101	50 - 130	<0.0050	ug/g	NC	40
7759216	Benzo(g,h,i)perylene	2021/12/30	86	50 - 130	91	50 - 130	<0.0050	ug/g	NC	40
7759216	Benzo(k)fluoranthene	2021/12/30	92	50 - 130	104	50 - 130	<0.0050	ug/g	NC	40
7759216	Chrysene	2021/12/30	102	50 - 130	103	50 - 130	<0.0050	ug/g	NC	40
7759216	Dibenzo(a,h)anthracene	2021/12/30	89	50 - 130	91	50 - 130	<0.0050	ug/g	NC	40
7759216	Fluoranthene	2021/12/30	116	50 - 130	114	50 - 130	<0.0050	ug/g	NC	40
7759216	Fluorene	2021/12/30	95	50 - 130	95	50 - 130	<0.0050	ug/g	NC	40
7759216	Indeno(1,2,3-cd)pyrene	2021/12/30	91	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40
7759216	Naphthalene	2021/12/30	78	50 - 130	83	50 - 130	<0.0050	ug/g	NC	40
7759216	Phenanthrene	2021/12/30	104	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
7759216	Pyrene	2021/12/30	110	50 - 130	107	50 - 130	<0.0050	ug/g	NC	40
7761155	Chromium (VI)	2021/12/31	76	70 - 130	90	80 - 120	<0.18	ug/g	NC	35
7761218	Available (CaCl2) pH	2021/12/31			100	97 - 103			0.51	N/A
7761224	Acid Extractable Antimony (Sb)	2022/01/04	94	75 - 125	100	80 - 120	<0.20	ug/g	NC	30
7761224	Acid Extractable Arsenic (As)	2022/01/04	94	75 - 125	101	80 - 120	<1.0	ug/g	4.4	30
7761224	Acid Extractable Barium (Ba)	2022/01/04	93	75 - 125	97	80 - 120	<0.50	ug/g	3.7	30
7761224	Acid Extractable Beryllium (Be)	2022/01/04	89	75 - 125	91	80 - 120	<0.20	ug/g	NC	30
7761224	Acid Extractable Boron (B)	2022/01/04	86	75 - 125	90	80 - 120	<5.0	ug/g	NC	30
7761224	Acid Extractable Cadmium (Cd)	2022/01/04	95	75 - 125	99	80 - 120	<0.10	ug/g	NC	30
7761224	Acid Extractable Chromium (Cr)	2022/01/04	97	75 - 125	99	80 - 120	<1.0	ug/g	1.9	30
7761224	Acid Extractable Cobalt (Co)	2022/01/04	93	75 - 125	99	80 - 120	<0.10	ug/g	3.1	30
7761224	Acid Extractable Copper (Cu)	2022/01/04	93	75 - 125	99	80 - 120	<0.50	ug/g	12	30
7761224	Acid Extractable Lead (Pb)	2022/01/04	92	75 - 125	100	80 - 120	<1.0	ug/g	6.4	30
7761224	Acid Extractable Mercury (Hg)	2022/01/04	82	75 - 125	89	80 - 120	<0.050	ug/g	NC	30
7761224	Acid Extractable Molybdenum (Mo)	2022/01/04	97	75 - 125	99	80 - 120	<0.50	ug/g	NC	30
7761224	Acid Extractable Nickel (Ni)	2022/01/04	91	75 - 125	101	80 - 120	<0.50	ug/g	1.3	30
7761224	Acid Extractable Selenium (Se)	2022/01/04	95	75 - 125	98	80 - 120	<0.50	ug/g	NC	30
7761224	Acid Extractable Silver (Ag)	2022/01/04	94	75 - 125	99	80 - 120	<0.20	ug/g	NC	30
7761224	Acid Extractable Thallium (Tl)	2022/01/04	95	75 - 125	101	80 - 120	<0.050	ug/g	NC	30
7761224	Acid Extractable Uranium (U)	2022/01/04	94	75 - 125	99	80 - 120	<0.050	ug/g	8.0	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
7761224	Acid Extractable Vanadium (V)	2022/01/04	92	75 - 125	100	80 - 120	<5.0	ug/g	4.1	30
7761224	Acid Extractable Zinc (Zn)	2022/01/04	92	75 - 125	97	80 - 120	<5.0	ug/g	1.4	30
7761536	1,1,1,2-Tetrachloroethane	2022/01/04	100	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
7761536	1,1,1-Trichloroethane	2022/01/04	110	60 - 140	109	60 - 130	<0.040	ug/g	NC	50
7761536	1,1,2,2-Tetrachloroethane	2022/01/04	90	60 - 140	87	60 - 130	<0.040	ug/g	NC	50
7761536	1,1,2-Trichloroethane	2022/01/04	104	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
7761536	1,1-Dichloroethane	2022/01/04	99	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7761536	1,1-Dichloroethylene	2022/01/04	104	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
7761536	1,2-Dichlorobenzene	2022/01/04	95	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7761536	1,2-Dichloroethane	2022/01/04	103	60 - 140	96	60 - 130	<0.049	ug/g	NC	50
7761536	1,2-Dichloropropane	2022/01/04	98	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
7761536	1,3-Dichlorobenzene	2022/01/04	98	60 - 140	97	60 - 130	<0.040	ug/g	NC	50
7761536	1,4-Dichlorobenzene	2022/01/04	111	60 - 140	110	60 - 130	<0.040	ug/g	NC	50
7761536	Acetone (2-Propanone)	2022/01/04	102	60 - 140	94	60 - 140	<0.49	ug/g	NC	50
7761536	Benzene	2022/01/04	90	60 - 140	88	60 - 130	<0.0060	ug/g	NC	50
7761536	Bromodichloromethane	2022/01/04	105	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7761536	Bromoform	2022/01/04	98	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7761536	Bromomethane	2022/01/04	77	60 - 140	97	60 - 140	<0.040	ug/g	NC	50
7761536	Carbon Tetrachloride	2022/01/04	111	60 - 140	111	60 - 130	<0.040	ug/g	NC	50
7761536	Chlorobenzene	2022/01/04	96	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
7761536	Chloroform	2022/01/04	103	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
7761536	cis-1,2-Dichloroethylene	2022/01/04	101	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
7761536	cis-1,3-Dichloropropene	2022/01/04	73	60 - 140	91	60 - 130	<0.030	ug/g	NC	50
7761536	Dibromochloromethane	2022/01/04	96	60 - 140	93	60 - 130	<0.040	ug/g	NC	50
7761536	Dichlorodifluoromethane (FREON 12)	2022/01/04	93	60 - 140	91	60 - 140	<0.040	ug/g	NC	50
7761536	Ethylbenzene	2022/01/04	90	60 - 140	90	60 - 130	<0.010	ug/g	NC	50
7761536	Ethylene Dibromide	2022/01/04	89	60 - 140	87	60 - 130	<0.040	ug/g	NC	50
7761536	Hexane	2022/01/04	101	60 - 140	102	60 - 130	<0.040	ug/g	NC	50
7761536	Methyl Ethyl Ketone (2-Butanone)	2022/01/04	105	60 - 140	96	60 - 140	<0.40	ug/g	NC	50
7761536	Methyl Isobutyl Ketone	2022/01/04	101	60 - 140	93	60 - 130	<0.40	ug/g	NC	50
7761536	Methyl t-butyl ether (MTBE)	2022/01/04	94	60 - 140	89	60 - 130	<0.040	ug/g	NC	50

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
7761536	Methylene Chloride(Dichloromethane)	2022/01/04	109	60 - 140	105	60 - 130	<0.049	ug/g	NC	50
7761536	o-Xylene	2022/01/04	91	60 - 140	90	60 - 130	<0.020	ug/g	NC	50
7761536	p+m-Xylene	2022/01/04	97	60 - 140	96	60 - 130	<0.020	ug/g	NC	50
7761536	Styrene	2022/01/04	101	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
7761536	Tetrachloroethylene	2022/01/04	94	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
7761536	Toluene	2022/01/04	91	60 - 140	90	60 - 130	<0.020	ug/g	NC	50
7761536	Total Xylenes	2022/01/04					<0.020	ug/g	NC	50
7761536	trans-1,2-Dichloroethylene	2022/01/04	102	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
7761536	trans-1,3-Dichloropropene	2022/01/04	68	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
7761536	Trichloroethylene	2022/01/04	108	60 - 140	106	60 - 130	<0.010	ug/g	NC	50
7761536	Trichlorofluoromethane (FREON 11)	2022/01/04	106	60 - 140	107	60 - 130	<0.040	ug/g	NC	50
7761536	Vinyl Chloride	2022/01/04	95	60 - 140	96	60 - 130	<0.019	ug/g	NC	50

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 (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 recovery for the extraction surrogate compound was above the upper control limit for duplicate analyses of the soil sample. Visible loss of methanol was observed in this sample. As a result, there is an increased level of uncertainty associated with the values reported for this sample.

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Bureau Veritas Job #: C1AE432
Report Date: 2022/01/05

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: VIR

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

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.

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Maxxam

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Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

Invoice Information		Report Information (if differs from invoice)		Project Information (where applicable)		Turnaround Time (TAT) Required
Company Name:	Soil Engineers Ltd.	Company Name:	SAME	Quotation #:		☑ Regular TAT (5-7 days) Most analyses
Contact Name:	Ram Sah	Contact Name:		P.O. #/ AFE#:		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	90 West Beaver Creek Road,	Address:		Project #:	2111-E043	Rush TAT (Surcharges will be applied)
	Richmond Hill, Ontario L4B 1E7			Site Location:		☐ 1 Day ☐ 2 Days ☐ 3-4 Days
Phone: 416 754 8515	Fax: 905-8818335	Phone:	Fax:	Site #:		Date Required:
Email:	ram.sah@soilengineers ltd.com	Email:		Sampled By:	Vraj	Rush Confirmation #:

REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153: ☑ Table 1 ☐ Res/Park ☐ Med/Fine ☐ Table 2 ☐ Ind/Comm ☑ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table ___

FOR RSC (PLEASE CIRCLE) (Y) / N

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ MISA ☐ Storm Sewer Bylaw ☐ PWQO Region ___ ☐ Other (Specify) ☐ REG 558 (MIN. 5 DAY TAT REQUIRED)

Include Criteria on Certificate of Analysis: Y / N

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

#	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / Cr(VI)	BTEX/PHCs F1-F4	VOCs	PAHs	Metal Scan, Hg, Cr(VI), pH	HOLD - DO NOT ANALYZE
1	BH, MW3/4	2021-12-23	9:30	Soil	2				✓	✓	
2	BH, MW3/5	2021-12-23	9:50	Soil	3		✓				
3	BH, MW3/6	2021-12-23	10:30	Soil	3			✓			
4	DUP52	2021-12-23		Soil	3					✓	
5											
6											
7											
8											
9											
10											

LABORATORY USE ONLY

CUSTODY SEAL Y / N — Present / Intact

COOLER TEMPERATURES: 3/2/3

COOLING MEDIA PRESENT: (Y) / N

COMMENTS

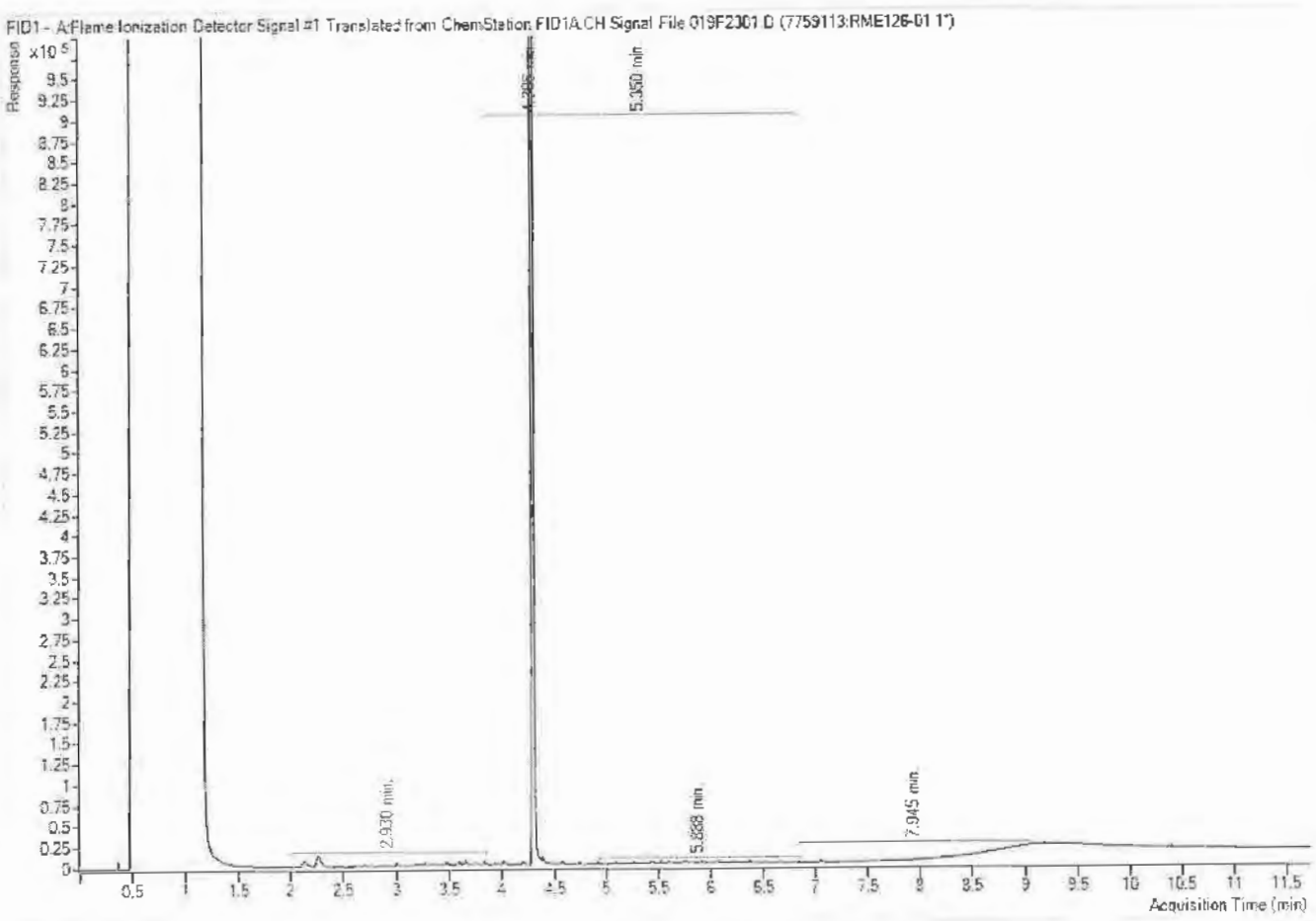
RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Vraj	2021/12/23	4:30pm	V. Trinh	2021/12/24	11:16

24-Dec-21 11:16
Antonella Brasil
C1AE432
NP4 ENV-1487

Bureau Veritas Job #: C1AE432
Report Date: 2022/01/05
Bureau Veritas Sample: RME126

Soil Engineers Ltd
Client Project #: 2111-E043
Client ID: BH/MW3/5

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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	HAMILTON
TEL: (705) 721-7863	TEL: (905) 542-7605	TEL: (905) 440-2040	TEL: (905) 853-0647	TEL: (705) 684-4242	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) 542-2769

APPENDIX 'D'

CERTIFICATES OF ANALYSIS (GROUNDWATER SAMPLES)

REFERENCE NO. 2111-E043

Your Project #: 2111-E043
Your C.O.C. #: n/a

Attention: Ram Sah

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

Report Date: 2022/01/19
Report #: R6968535
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C210071
Received: 2022/01/13, 15:14

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	4	N/A	2022/01/19	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	5	N/A	2022/01/18		EPA 8260C m
Chromium (VI) in Water	5	N/A	2022/01/18	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide	2	N/A	2022/01/14	CAM SOP-00457	OMOE E3015 m
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2022/01/17	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1)	4	2022/01/18	2022/01/18	CAM SOP-00316	CCME PHC-CWS m
Mercury	5	2022/01/14	2022/01/18	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	5	N/A	2022/01/14	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM)	4	2022/01/18	2022/01/18	CAM SOP-00318	EPA 8270D m
pH	3	2022/01/14	2022/01/14	CAM SOP-00413	SM 4500H+ B m
Volatile Organic Compounds and F1 PHCs	4	N/A	2022/01/17	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Water	1	N/A	2022/01/16	CAM SOP-00228	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas 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 Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, results relate to the supplied samples tested.

Your Project #: 2111-E043
Your C.O.C. #: n/a

Attention: Ram Sah

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

Report Date: 2022/01/19
Report #: R6968535
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C210071
Received: 2022/01/13, 15:14

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) 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

Marijane Cruz
Senior Project Manager
19 Jan 2022 17:23:56

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: Antonella.Brasil@bureauveritas.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

Bureau Veritas Job #: C210071
Report Date: 2022/01/19

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: ASH

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		RPQ581	RPQ582	RPQ582	RPQ585	
Sampling Date		2022/01/12 09:30	2022/01/12 10:15	2022/01/12 10:15	2022/01/12	
COC Number		n/a	n/a	n/a	n/a	
	UNITS	BH/MW1	BH/MW2	BH/MW2 Lab-Dup	DUPW1	QC Batch
Inorganics						
pH	pH	7.57	7.52	7.55	7.60	7782780

QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		RPQ587		
Sampling Date		2022/01/12		
COC Number		n/a		
	UNITS	TRIP BLANK	RDL	QC Batch
BTEX & F1 Hydrocarbons				
Benzene	ug/L	<0.20	0.20	7784245
Toluene	ug/L	<0.20	0.20	7784245
Ethylbenzene	ug/L	<0.20	0.20	7784245
o-Xylene	ug/L	<0.20	0.20	7784245
p+m-Xylene	ug/L	<0.40	0.40	7784245
Total Xylenes	ug/L	<0.40	0.40	7784245
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	102		7784245
4-Bromofluorobenzene	%	96		7784245
D10-o-Xylene	%	105		7784245
D4-1,2-Dichloroethane	%	102		7784245

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C210071
Report Date: 2022/01/19

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: ASH

O.REG 153 METALS & INORGANICS PKG (WTR)

Bureau Veritas ID		RPQ581			RPQ582			RPQ585		
Sampling Date		2022/01/12 09:30			2022/01/12 10:15			2022/01/12		
COC Number		n/a			n/a			n/a		
	UNITS	BH/MW1	RDL	QC Batch	BH/MW2	RDL	QC Batch	DUPW1	RDL	QC Batch
Inorganics										
WAD Cyanide (Free)	ug/L	<1	1	7782232				<1	1	7782232
Metals										
Chromium (VI)	ug/L	<0.50	0.50	7782198	<0.50	0.50	7782198	0.50	0.50	7782198
Mercury (Hg)	ug/L	<0.10	0.10	7781807	<0.10	0.10	7781807	<0.10	0.10	7781807
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	7781704	<0.50	0.50	7781704	<0.50	0.50	7781704
Dissolved Arsenic (As)	ug/L	<1.0	1.0	7781704	1.3	1.0	7781704	<1.0	1.0	7781704
Dissolved Barium (Ba)	ug/L	160	2.0	7781704	240	2.0	7781704	160	2.0	7781704
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	7781704	<0.40	0.40	7781704	<0.40	0.40	7781704
Dissolved Boron (B)	ug/L	130	10	7781704	130	10	7781704	130	10	7781704
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	7781704	<0.090	0.090	7781704	<0.090	0.090	7781704
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	7781704	<5.0	5.0	7781704	<5.0	5.0	7781704
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	7781704	<0.50	0.50	7781704	<0.50	0.50	7781704
Dissolved Copper (Cu)	ug/L	1.4	0.90	7781704	<0.90	0.90	7781704	1.4	0.90	7781704
Dissolved Lead (Pb)	ug/L	<0.50	0.50	7781704	<0.50	0.50	7781704	<0.50	0.50	7781704
Dissolved Molybdenum (Mo)	ug/L	12	0.50	7781704	11	0.50	7781704	12	0.50	7781704
Dissolved Nickel (Ni)	ug/L	1.7	1.0	7781704	1.3	1.0	7781704	1.8	1.0	7781704
Dissolved Selenium (Se)	ug/L	<2.0	2.0	7781704	<2.0	2.0	7781704	<2.0	2.0	7781704
Dissolved Silver (Ag)	ug/L	<0.090	0.090	7781704	<0.090	0.090	7781704	<0.090	0.090	7781704
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	7781704	<0.050	0.050	7781704	<0.050	0.050	7781704
Dissolved Uranium (U)	ug/L	1.3	0.10	7781704	1.2	0.10	7781704	1.3	0.10	7781704
Dissolved Vanadium (V)	ug/L	1.2	0.50	7781704	0.52	0.50	7781704	1.4	0.50	7781704
Dissolved Zinc (Zn)	ug/L	36	5.0	7781704	<5.0	5.0	7781704	37	5.0	7781704

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 METALS PACKAGE (WATER)

Bureau Veritas ID		RPQ583	RPQ584		
Sampling Date		2022/01/12 10:45	2022/01/12 11:20		
COC Number		n/a	n/a		
	UNITS	BH/MW3	BH/MW4	RDL	QC Batch
Metals					
Chromium (VI)	ug/L	<0.50	<0.50	0.50	7782198
Mercury (Hg)	ug/L	<0.10	<0.10	0.10	7781807
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	7781704
Dissolved Arsenic (As)	ug/L	<1.0	2.2	1.0	7781704
Dissolved Barium (Ba)	ug/L	51	110	2.0	7781704
Dissolved Beryllium (Be)	ug/L	<0.40	<0.40	0.40	7781704
Dissolved Boron (B)	ug/L	250	120	10	7781704
Dissolved Cadmium (Cd)	ug/L	<0.090	<0.090	0.090	7781704
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	5.0	7781704
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	0.50	7781704
Dissolved Copper (Cu)	ug/L	<0.90	<0.90	0.90	7781704
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	7781704
Dissolved Molybdenum (Mo)	ug/L	37	19	0.50	7781704
Dissolved Nickel (Ni)	ug/L	<1.0	1.3	1.0	7781704
Dissolved Selenium (Se)	ug/L	<2.0	<2.0	2.0	7781704
Dissolved Silver (Ag)	ug/L	<0.090	<0.090	0.090	7781704
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	0.050	7781704
Dissolved Uranium (U)	ug/L	0.11	0.79	0.10	7781704
Dissolved Vanadium (V)	ug/L	<0.50	0.90	0.50	7781704
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	7781704

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 PAHS (WATER)

Bureau Veritas ID		RPQ581			RPQ582			RPQ583	RPQ584		
Sampling Date		2022/01/12 09:30			2022/01/12 10:15			2022/01/12 10:45	2022/01/12 11:20		
COC Number		n/a			n/a			n/a	n/a		
	UNITS	BH/MW1	RDL	QC Batch	BH/MW2	RDL	QC Batch	BH/MW3	BH/MW4	RDL	QC Batch
Calculated Parameters											
Methylnaphthalene, 2-(1-)	ug/L	<0.071	0.071	7781094	<0.071	0.071	7781094	<0.071	<0.071	0.071	7781094
Polyaromatic Hydrocarbons											
Biphenyl	ug/L				<0.050	0.050	7785506				
Acenaphthene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Acenaphthylene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Anthracene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Benzo(a)anthracene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Benzo(a)pyrene	ug/L	<0.0090	0.0090	7785506	<0.0090	0.0090	7785506	<0.0090	<0.0090	0.0090	7785506
Benzo(b/j)fluoranthene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Benzo(g,h,i)perylene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Benzo(k)fluoranthene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Chrysene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Dibenzo(a,h)anthracene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Fluoranthene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Fluorene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
1-Methylnaphthalene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
2-Methylnaphthalene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Naphthalene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Phenanthrene	ug/L	<0.030	0.030	7785506	<0.030	0.030	7785506	<0.030	<0.030	0.030	7785506
Pyrene	ug/L	<0.050	0.050	7785506	<0.050	0.050	7785506	<0.050	<0.050	0.050	7785506
Surrogate Recovery (%)											
D10-Anthracene	%	101		7785506	106		7785506	103	104		7785506
D14-Terphenyl (FS)	%	99		7785506	102		7785506	95	94		7785506
D8-Acenaphthylene	%	97		7785506	98		7785506	100	101		7785506

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Bureau Veritas ID		RPQ581	RPQ582	RPQ583	RPQ584		
Sampling Date		2022/01/12 09:30	2022/01/12 10:15	2022/01/12 10:45	2022/01/12 11:20		
COC Number		n/a	n/a	n/a	n/a		
	UNITS	BH/MW1	BH/MW2	BH/MW3	BH/MW4	RDL	QC Batch
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781242
Volatile Organics							
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	10	7781953
Benzene	ug/L	0.24	0.19	0.26	<0.17	0.17	7781953
Bromodichloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
Bromoform	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7781953
Bromomethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
Carbon Tetrachloride	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
Chlorobenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
Chloroform	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
Dibromochloromethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7781953
1,1-Dichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
1,2-Dichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
1,1-Dichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
1,2-Dichloropropane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	<0.30	<0.30	0.30	7781953
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	7781953
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
Hexane	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	7781953
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	7781953
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	<10	<10	10	7781953
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	7781953
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
Styrene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
Tetrachloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
Toluene	ug/L	0.49	0.39	0.43	0.33	0.20	7781953

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

Bureau Veritas ID		RPQ581	RPQ582	RPQ583	RPQ584		
Sampling Date		2022/01/12 09:30	2022/01/12 10:15	2022/01/12 10:45	2022/01/12 11:20		
COC Number		n/a	n/a	n/a	n/a		
	UNITS	BH/MW1	BH/MW2	BH/MW3	BH/MW4	RDL	QC Batch
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
Trichloroethylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	7781953
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	7781953
F1 (C6-C10)	ug/L	<25	<25	<25	<25	25	7781953
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	25	7781953
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	100	7785513
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	200	7785513
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	200	7785513
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes		7785513
Surrogate Recovery (%)							
o-Terphenyl	%	103	104	107	107		7785513
4-Bromofluorobenzene	%	96	96	96	96		7781953
D4-1,2-Dichloroethane	%	106	105	105	105		7781953
D8-Toluene	%	98	99	100	100		7781953

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS (WATER)

Bureau Veritas ID		RPQ586		
Sampling Date		2022/01/12		
COC Number		n/a		
	UNITS	DUPW2	RDL	QC Batch
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	0.50	7781242
Volatile Organics				
Acetone (2-Propanone)	ug/L	<10	10	7782131
Benzene	ug/L	0.28	0.20	7782131
Bromodichloromethane	ug/L	<0.50	0.50	7782131
Bromoform	ug/L	<1.0	1.0	7782131
Bromomethane	ug/L	<0.50	0.50	7782131
Carbon Tetrachloride	ug/L	<0.19	0.19	7782131
Chlorobenzene	ug/L	<0.20	0.20	7782131
Chloroform	ug/L	<0.20	0.20	7782131
Dibromochloromethane	ug/L	<0.50	0.50	7782131
1,2-Dichlorobenzene	ug/L	<0.40	0.40	7782131
1,3-Dichlorobenzene	ug/L	<0.40	0.40	7782131
1,4-Dichlorobenzene	ug/L	<0.40	0.40	7782131
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	1.0	7782131
1,1-Dichloroethane	ug/L	<0.20	0.20	7782131
1,2-Dichloroethane	ug/L	<0.49	0.49	7782131
1,1-Dichloroethylene	ug/L	<0.20	0.20	7782131
cis-1,2-Dichloroethylene	ug/L	<0.50	0.50	7782131
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	7782131
1,2-Dichloropropane	ug/L	<0.20	0.20	7782131
cis-1,3-Dichloropropene	ug/L	<0.30	0.30	7782131
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	7782131
Ethylbenzene	ug/L	<0.20	0.20	7782131
Ethylene Dibromide	ug/L	<0.19	0.19	7782131
Hexane	ug/L	<1.0	1.0	7782131
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	7782131
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	10	7782131
Methyl Isobutyl Ketone	ug/L	<5.0	5.0	7782131
Methyl t-butyl ether (MTBE)	ug/L	<0.50	0.50	7782131
Styrene	ug/L	<0.40	0.40	7782131
1,1,1,2-Tetrachloroethane	ug/L	<0.50	0.50	7782131
1,1,2,2-Tetrachloroethane	ug/L	<0.40	0.40	7782131
Tetrachloroethylene	ug/L	<0.20	0.20	7782131
Toluene	ug/L	0.37	0.20	7782131
1,1,1-Trichloroethane	ug/L	<0.20	0.20	7782131

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS (WATER)

Bureau Veritas ID		RPQ586		
Sampling Date		2022/01/12		
COC Number		n/a		
	UNITS	DUPW2	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.40	0.40	7782131
Trichloroethylene	ug/L	<0.20	0.20	7782131
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	0.50	7782131
Vinyl Chloride	ug/L	<0.20	0.20	7782131
p+m-Xylene	ug/L	<0.20	0.20	7782131
o-Xylene	ug/L	<0.20	0.20	7782131
Total Xylenes	ug/L	<0.20	0.20	7782131
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	97		7782131
D4-1,2-Dichloroethane	%	107		7782131
D8-Toluene	%	95		7782131

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Job #: C210071
Report Date: 2022/01/19

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: ASH

TEST SUMMARY

Bureau Veritas ID: RPQ581
Sample ID: BH/MW1
Matrix: Water

Collected: 2022/01/12
Shipped:
Received: 2022/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7781094	N/A	2022/01/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	7781242	N/A	2022/01/18	Automated Statchk
Chromium (VI) in Water	IC	7782198	N/A	2022/01/18	Theodora Ll
Free (WAD) Cyanide	SKAL/CN	7782232	N/A	2022/01/14	Aditiben Patel
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7785513	2022/01/18	2022/01/18	Agnieszka Brzuzy-Snopko
Mercury	CV/AA	7781807	2022/01/14	2022/01/18	Prempal Bhatti
Dissolved Metals by ICPMS	ICP/MS	7781704	N/A	2022/01/14	Nan Raykha
PAH Compounds in Water by GC/MS (SIM)	GC/MS	7785506	2022/01/18	2022/01/18	Lingyun Feng
pH	AT	7782780	2022/01/14	2022/01/14	Taslima Aktar
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7781953	N/A	2022/01/17	Denis Reid

Bureau Veritas ID: RPQ582
Sample ID: BH/MW2
Matrix: Water

Collected: 2022/01/12
Shipped:
Received: 2022/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7781094	N/A	2022/01/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	7781242	N/A	2022/01/18	Automated Statchk
Chromium (VI) in Water	IC	7782198	N/A	2022/01/18	Theodora Ll
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7785513	2022/01/18	2022/01/18	Agnieszka Brzuzy-Snopko
Mercury	CV/AA	7781807	2022/01/14	2022/01/18	Prempal Bhatti
Dissolved Metals by ICPMS	ICP/MS	7781704	N/A	2022/01/14	Nan Raykha
PAH Compounds in Water by GC/MS (SIM)	GC/MS	7785506	2022/01/18	2022/01/18	Lingyun Feng
pH	AT	7782780	2022/01/14	2022/01/14	Taslima Aktar
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7781953	N/A	2022/01/17	Denis Reid

Bureau Veritas ID: RPQ582 Dup
Sample ID: BH/MW2
Matrix: Water

Collected: 2022/01/12
Shipped:
Received: 2022/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH	AT	7782780	2022/01/14	2022/01/14	Taslima Aktar

Bureau Veritas ID: RPQ583
Sample ID: BH/MW3
Matrix: Water

Collected: 2022/01/12
Shipped:
Received: 2022/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7781094	N/A	2022/01/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	7781242	N/A	2022/01/18	Automated Statchk
Chromium (VI) in Water	IC	7782198	N/A	2022/01/18	Theodora Ll
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7785513	2022/01/18	2022/01/18	Agnieszka Brzuzy-Snopko
Mercury	CV/AA	7781807	2022/01/14	2022/01/18	Prempal Bhatti
Dissolved Metals by ICPMS	ICP/MS	7781704	N/A	2022/01/14	Nan Raykha
PAH Compounds in Water by GC/MS (SIM)	GC/MS	7785506	2022/01/18	2022/01/18	Lingyun Feng

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Bureau Veritas Job #: C210071
Report Date: 2022/01/19

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: ASH

TEST SUMMARY

Bureau Veritas ID: RPQ583
Sample ID: BH/MW3
Matrix: Water

Collected: 2022/01/12
Shipped:
Received: 2022/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7781953	N/A	2022/01/17	Denis Reid

Bureau Veritas ID: RPQ584
Sample ID: BH/MW4
Matrix: Water

Collected: 2022/01/12
Shipped:
Received: 2022/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7781094	N/A	2022/01/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	7781242	N/A	2022/01/18	Automated Statchk
Chromium (VI) in Water	IC	7782198	N/A	2022/01/18	Theodora Ll
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	7785513	2022/01/18	2022/01/18	Agnieszka Brzuzy-Snopko
Mercury	CV/AA	7781807	2022/01/14	2022/01/18	Prempal Bhatti
Dissolved Metals by ICPMS	ICP/MS	7781704	N/A	2022/01/14	Nan Raykha
PAH Compounds in Water by GC/MS (SIM)	GC/MS	7785506	2022/01/18	2022/01/18	Lingyun Feng
Volatile Organic Compounds and F1 PHCs	GC/MSFD	7781953	N/A	2022/01/17	Denis Reid

Bureau Veritas ID: RPQ585
Sample ID: DUPW1
Matrix: Water

Collected: 2022/01/12
Shipped:
Received: 2022/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	7782198	N/A	2022/01/18	Theodora Ll
Free (WAD) Cyanide	SKAL/CN	7782232	N/A	2022/01/14	Aditiben Patel
Mercury	CV/AA	7781807	2022/01/14	2022/01/18	Prempal Bhatti
Dissolved Metals by ICPMS	ICP/MS	7781704	N/A	2022/01/14	Nan Raykha
pH	AT	7782780	2022/01/14	2022/01/14	Taslima Aktar

Bureau Veritas ID: RPQ586
Sample ID: DUPW2
Matrix: Water

Collected: 2022/01/12
Shipped:
Received: 2022/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	7781242	N/A	2022/01/18	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	7782131	N/A	2022/01/16	Karen Hughes

Bureau Veritas ID: RPQ587
Sample ID: TRIP BLANK
Matrix: Water

Collected: 2022/01/12
Shipped:
Received: 2022/01/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	7784245	N/A	2022/01/17	Joe Paino

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GENERAL COMMENTS

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

Package 1	3.3°C

Cooler custody seal was present and intact.

All 40 ml vials for F1BTEX and VOC analyses contained visible sediment.
All 100 ml amber glass bottles for F2-F4 and PAH analyses contained visible sediment, which was included in the extraction.
All 250mL plastic General bottles contained visible sediment.
All 125mL plastic bottles for cyanide analyses contained visible sediment.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7781953	4-Bromofluorobenzene	2022/01/17	101	70 - 130	101	70 - 130	98	%		
7781953	D4-1,2-Dichloroethane	2022/01/17	108	70 - 130	108	70 - 130	106	%		
7781953	D8-Toluene	2022/01/17	100	70 - 130	99	70 - 130	99	%		
7782131	4-Bromofluorobenzene	2022/01/16	102	70 - 130	102	70 - 130	99	%		
7782131	D4-1,2-Dichloroethane	2022/01/16	104	70 - 130	103	70 - 130	105	%		
7782131	D8-Toluene	2022/01/16	99	70 - 130	100	70 - 130	96	%		
7784245	1,4-Difluorobenzene	2022/01/17	95	70 - 130	98	70 - 130	104	%		
7784245	4-Bromofluorobenzene	2022/01/17	108	70 - 130	105	70 - 130	95	%		
7784245	D10-o-Xylene	2022/01/17	103	70 - 130	101	70 - 130	108	%		
7784245	D4-1,2-Dichloroethane	2022/01/17	97	70 - 130	95	70 - 130	104	%		
7785506	D10-Anthracene	2022/01/18	105	50 - 130	100	50 - 130	108	%		
7785506	D14-Terphenyl (FS)	2022/01/18	80	50 - 130	93	50 - 130	105	%		
7785506	D8-Acenaphthylene	2022/01/18	103	50 - 130	95	50 - 130	101	%		
7785513	o-Terphenyl	2022/01/18	107	60 - 130	107	60 - 130	109	%		
7781704	Dissolved Antimony (Sb)	2022/01/14	110	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
7781704	Dissolved Arsenic (As)	2022/01/14	104	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
7781704	Dissolved Barium (Ba)	2022/01/14	106	80 - 120	105	80 - 120	<2.0	ug/L	1.7	20
7781704	Dissolved Beryllium (Be)	2022/01/14	108	80 - 120	102	80 - 120	<0.40	ug/L	NC	20
7781704	Dissolved Boron (B)	2022/01/14	105	80 - 120	103	80 - 120	<10	ug/L	NC	20
7781704	Dissolved Cadmium (Cd)	2022/01/14	106	80 - 120	101	80 - 120	<0.090	ug/L	NC	20
7781704	Dissolved Chromium (Cr)	2022/01/14	101	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
7781704	Dissolved Cobalt (Co)	2022/01/14	102	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7781704	Dissolved Copper (Cu)	2022/01/14	105	80 - 120	103	80 - 120	<0.90	ug/L	NC	20
7781704	Dissolved Lead (Pb)	2022/01/14	95	80 - 120	95	80 - 120	<0.50	ug/L	NC	20
7781704	Dissolved Molybdenum (Mo)	2022/01/14	112	80 - 120	105	80 - 120	<0.50	ug/L	12	20
7781704	Dissolved Nickel (Ni)	2022/01/14	98	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7781704	Dissolved Selenium (Se)	2022/01/14	103	80 - 120	102	80 - 120	<2.0	ug/L	NC	20
7781704	Dissolved Silver (Ag)	2022/01/14	107	80 - 120	105	80 - 120	<0.090	ug/L	NC	20
7781704	Dissolved Thallium (Tl)	2022/01/14	98	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
7781704	Dissolved Uranium (U)	2022/01/14	94	80 - 120	93	80 - 120	<0.10	ug/L	2.9	20
7781704	Dissolved Vanadium (V)	2022/01/14	104	80 - 120	101	80 - 120	<0.50	ug/L	NC	20

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
7781704	Dissolved Zinc (Zn)	2022/01/14	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
7781807	Mercury (Hg)	2022/01/18	92	75 - 125	97	80 - 120	<0.10	ug/L	NC	20
7781953	1,1,1,2-Tetrachloroethane	2022/01/17	96	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
7781953	1,1,1-Trichloroethane	2022/01/17	95	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
7781953	1,1,2,2-Tetrachloroethane	2022/01/17	92	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
7781953	1,1,2-Trichloroethane	2022/01/17	101	70 - 130	99	70 - 130	<0.50	ug/L	NC	30
7781953	1,1-Dichloroethane	2022/01/17	88	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
7781953	1,1-Dichloroethylene	2022/01/17	91	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
7781953	1,2-Dichlorobenzene	2022/01/17	90	70 - 130	89	70 - 130	<0.50	ug/L	NC	30
7781953	1,2-Dichloroethane	2022/01/17	95	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
7781953	1,2-Dichloropropane	2022/01/17	90	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
7781953	1,3-Dichlorobenzene	2022/01/17	92	70 - 130	90	70 - 130	<0.50	ug/L	NC	30
7781953	1,4-Dichlorobenzene	2022/01/17	105	70 - 130	104	70 - 130	<0.50	ug/L	NC	30
7781953	Acetone (2-Propanone)	2022/01/17	99	60 - 140	102	60 - 140	<10	ug/L	NC	30
7781953	Benzene	2022/01/17	83	70 - 130	84	70 - 130	<0.17	ug/L	NC	30
7781953	Bromodichloromethane	2022/01/17	100	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
7781953	Bromoform	2022/01/17	110	70 - 130	111	70 - 130	<1.0	ug/L	NC	30
7781953	Bromomethane	2022/01/17	85	60 - 140	89	60 - 140	<0.50	ug/L	NC	30
7781953	Carbon Tetrachloride	2022/01/17	96	70 - 130	99	70 - 130	<0.20	ug/L	NC	30
7781953	Chlorobenzene	2022/01/17	92	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
7781953	Chloroform	2022/01/17	92	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
7781953	cis-1,2-Dichloroethylene	2022/01/17	92	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7781953	cis-1,3-Dichloropropene	2022/01/17	96	70 - 130	92	70 - 130	<0.30	ug/L	NC	30
7781953	Dibromochloromethane	2022/01/17	103	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
7781953	Dichlorodifluoromethane (FREON 12)	2022/01/17	79	60 - 140	84	60 - 140	<1.0	ug/L	NC	30
7781953	Ethylbenzene	2022/01/17	83	70 - 130	83	70 - 130	<0.20	ug/L	NC	30
7781953	Ethylene Dibromide	2022/01/17	91	70 - 130	89	70 - 130	<0.20	ug/L	NC	30
7781953	F1 (C6-C10) - BTEX	2022/01/17					<25	ug/L	NC	30
7781953	F1 (C6-C10)	2022/01/17	79	60 - 140	87	60 - 140	<25	ug/L	NC	30
7781953	Hexane	2022/01/17	86	70 - 130	89	70 - 130	<1.0	ug/L	NC	30
7781953	Methyl Ethyl Ketone (2-Butanone)	2022/01/17	94	60 - 140	97	60 - 140	<10	ug/L	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
7781953	Methyl Isobutyl Ketone	2022/01/17	95	70 - 130	99	70 - 130	<5.0	ug/L	NC	30
7781953	Methyl t-butyl ether (MTBE)	2022/01/17	87	70 - 130	88	70 - 130	<0.50	ug/L	NC	30
7781953	Methylene Chloride(Dichloromethane)	2022/01/17	99	70 - 130	100	70 - 130	<2.0	ug/L	NC	30
7781953	o-Xylene	2022/01/17	84	70 - 130	83	70 - 130	<0.20	ug/L	NC	30
7781953	p+m-Xylene	2022/01/17	85	70 - 130	85	70 - 130	<0.20	ug/L	NC	30
7781953	Styrene	2022/01/17	94	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7781953	Tetrachloroethylene	2022/01/17	86	70 - 130	85	70 - 130	<0.20	ug/L	NC	30
7781953	Toluene	2022/01/17	93	70 - 130	92	70 - 130	<0.20	ug/L	NC	30
7781953	Total Xylenes	2022/01/17					<0.20	ug/L	NC	30
7781953	trans-1,2-Dichloroethylene	2022/01/17	92	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7781953	trans-1,3-Dichloropropene	2022/01/17	101	70 - 130	90	70 - 130	<0.40	ug/L	NC	30
7781953	Trichloroethylene	2022/01/17	95	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
7781953	Trichlorofluoromethane (FREON 11)	2022/01/17	91	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7781953	Vinyl Chloride	2022/01/17	82	70 - 130	85	70 - 130	<0.20	ug/L	NC	30
7782131	1,1,1,2-Tetrachloroethane	2022/01/16	97	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
7782131	1,1,1-Trichloroethane	2022/01/16	102	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
7782131	1,1,2,2-Tetrachloroethane	2022/01/16	99	70 - 130	94	70 - 130	<0.40	ug/L	NC	30
7782131	1,1,2-Trichloroethane	2022/01/16	103	70 - 130	100	70 - 130	<0.40	ug/L	NC	30
7782131	1,1-Dichloroethane	2022/01/16	95	70 - 130	93	70 - 130	<0.20	ug/L	NC	30
7782131	1,1-Dichloroethylene	2022/01/16	97	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
7782131	1,2-Dichlorobenzene	2022/01/16	97	70 - 130	94	70 - 130	<0.40	ug/L	NC	30
7782131	1,2-Dichloroethane	2022/01/16	101	70 - 130	97	70 - 130	<0.49	ug/L	NC	30
7782131	1,2-Dichloropropane	2022/01/16	99	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
7782131	1,3-Dichlorobenzene	2022/01/16	95	70 - 130	93	70 - 130	<0.40	ug/L	NC	30
7782131	1,4-Dichlorobenzene	2022/01/16	111	70 - 130	109	70 - 130	<0.40	ug/L	NC	30
7782131	Acetone (2-Propanone)	2022/01/16	116	60 - 140	105	60 - 140	<10	ug/L	NC	30
7782131	Benzene	2022/01/16	90	70 - 130	87	70 - 130	<0.20	ug/L	NC	30
7782131	Bromodichloromethane	2022/01/16	104	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
7782131	Bromoform	2022/01/16	103	70 - 130	98	70 - 130	<1.0	ug/L	NC	30
7782131	Bromomethane	2022/01/16	100	60 - 140	96	60 - 140	<0.50	ug/L	NC	30
7782131	Carbon Tetrachloride	2022/01/16	101	70 - 130	99	70 - 130	<0.19	ug/L	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
7782131	Chlorobenzene	2022/01/16	99	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
7782131	Chloroform	2022/01/16	101	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
7782131	cis-1,2-Dichloroethylene	2022/01/16	102	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
7782131	cis-1,3-Dichloropropene	2022/01/16	105	70 - 130	100	70 - 130	<0.30	ug/L	NC	30
7782131	Dibromochloromethane	2022/01/16	99	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
7782131	Dichlorodifluoromethane (FREON 12)	2022/01/16	82	60 - 140	81	60 - 140	<1.0	ug/L	NC	30
7782131	Ethylbenzene	2022/01/16	92	70 - 130	90	70 - 130	<0.20	ug/L	NC	30
7782131	Ethylene Dibromide	2022/01/16	99	70 - 130	95	70 - 130	<0.19	ug/L	NC	30
7782131	Hexane	2022/01/16	98	70 - 130	97	70 - 130	<1.0	ug/L	NC	30
7782131	Methyl Ethyl Ketone (2-Butanone)	2022/01/16	112	60 - 140	103	60 - 140	<10	ug/L	NC	30
7782131	Methyl Isobutyl Ketone	2022/01/16	116	70 - 130	108	70 - 130	<5.0	ug/L	NC	30
7782131	Methyl t-butyl ether (MTBE)	2022/01/16	97	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
7782131	Methylene Chloride(Dichloromethane)	2022/01/16	100	70 - 130	96	70 - 130	<2.0	ug/L	NC	30
7782131	o-Xylene	2022/01/16	88	70 - 130	88	70 - 130	<0.20	ug/L	NC	30
7782131	p+m-Xylene	2022/01/16	94	70 - 130	93	70 - 130	<0.20	ug/L	NC	30
7782131	Styrene	2022/01/16	107	70 - 130	105	70 - 130	<0.40	ug/L	NC	30
7782131	Tetrachloroethylene	2022/01/16	92	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
7782131	Toluene	2022/01/16	95	70 - 130	93	70 - 130	<0.20	ug/L	NC	30
7782131	Total Xylenes	2022/01/16					<0.20	ug/L	NC	30
7782131	trans-1,2-Dichloroethylene	2022/01/16	100	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
7782131	trans-1,3-Dichloropropene	2022/01/16	115	70 - 130	109	70 - 130	<0.40	ug/L	NC	30
7782131	Trichloroethylene	2022/01/16	104	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
7782131	Trichlorofluoromethane (FREON 11)	2022/01/16	97	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
7782131	Vinyl Chloride	2022/01/16	90	70 - 130	89	70 - 130	<0.20	ug/L	NC	30
7782198	Chromium (VI)	2022/01/18	99	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7782232	WAD Cyanide (Free)	2022/01/14	99	80 - 120	100	80 - 120	<1	ug/L	NC	20
7782780	pH	2022/01/14			102	98 - 103			0.39	N/A
7784245	Benzene	2022/01/17	86	50 - 140	110	50 - 140	<0.20	ug/L	4.0	30
7784245	Ethylbenzene	2022/01/17	114	50 - 140	99	50 - 140	<0.20	ug/L	3.7	30
7784245	o-Xylene	2022/01/17	116	50 - 140	115	50 - 140	<0.20	ug/L	5.5	30
7784245	p+m-Xylene	2022/01/17	110	50 - 140	113	50 - 140	<0.40	ug/L	6.2	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
7784245	Toluene	2022/01/17	100	50 - 140	101	50 - 140	<0.20	ug/L	7.2	30
7784245	Total Xylenes	2022/01/17					<0.40	ug/L	6.2	30
7785506	1-Methylnaphthalene	2022/01/18	102	50 - 130	90	50 - 130	<0.050	ug/L	0.56	30
7785506	2-Methylnaphthalene	2022/01/18	98	50 - 130	86	50 - 130	<0.050	ug/L	0.11	30
7785506	Acenaphthene	2022/01/18	105	50 - 130	99	50 - 130	<0.050	ug/L	NC	30
7785506	Acenaphthylene	2022/01/18	103	50 - 130	96	50 - 130	<0.050	ug/L	NC	30
7785506	Anthracene	2022/01/18	101	50 - 130	99	50 - 130	<0.050	ug/L	NC	30
7785506	Benzo(a)anthracene	2022/01/18	99	50 - 130	107	50 - 130	<0.050	ug/L	NC	30
7785506	Benzo(a)pyrene	2022/01/18	102	50 - 130	108	50 - 130	<0.0090	ug/L	NC	30
7785506	Benzo(b/j)fluoranthene	2022/01/18	100	50 - 130	108	50 - 130	<0.050	ug/L	NC	30
7785506	Benzo(g,h,i)perylene	2022/01/18	100	50 - 130	104	50 - 130	<0.050	ug/L	NC	30
7785506	Benzo(k)fluoranthene	2022/01/18	102	50 - 130	103	50 - 130	<0.050	ug/L	NC	30
7785506	Biphenyl	2022/01/18	100	50 - 130	90	50 - 130	<0.050	ug/L		
7785506	Chrysene	2022/01/18	105	50 - 130	109	50 - 130	<0.050	ug/L	NC	30
7785506	Dibenzo(a,h)anthracene	2022/01/18	97	50 - 130	101	50 - 130	<0.050	ug/L	NC	30
7785506	Fluoranthene	2022/01/18	117	50 - 130	120	50 - 130	<0.050	ug/L	NC	30
7785506	Fluorene	2022/01/18	109	50 - 130	102	50 - 130	<0.050	ug/L	NC	30
7785506	Indeno(1,2,3-cd)pyrene	2022/01/18	105	50 - 130	109	50 - 130	<0.050	ug/L	NC	30
7785506	Naphthalene	2022/01/18	98	50 - 130	85	50 - 130	<0.050	ug/L	3.6	30
7785506	Phenanthrene	2022/01/18	113	50 - 130	108	50 - 130	<0.030	ug/L	0.63	30
7785506	Pyrene	2022/01/18	113	50 - 130	117	50 - 130	<0.050	ug/L	NC	30
7785513	F2 (C10-C16 Hydrocarbons)	2022/01/18	104	60 - 130	110	60 - 130	<100	ug/L	NC	30
7785513	F3 (C16-C34 Hydrocarbons)	2022/01/18	103	60 - 130	109	60 - 130	<200	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
7785513	F4 (C34-C50 Hydrocarbons)	2022/01/18	106	60 - 130	112	60 - 130	<200	ug/L	NC	30

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 (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).

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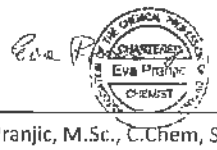
Bureau Veritas Job #: C210071
Report Date: 2022/01/19

Soil Engineers Ltd
Client Project #: 2111-E043
Sampler Initials: ASH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



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.

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Maxxam

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905 817 5700 Fax: 905 817 5779 Toll Free: 800-563-6266
CAM FCD-01191/3

CHAIN OF CUSTODY RECORD

Invoice Information		Report Information (if differs from invoice)		Project Information (where applicable)		Turnaround Time (TAT) Required
Company Name:	Soil Engineers Ltd.	Company Name:	SAME	Quotation #:		☑ Regular TAT (5-7 days) Most analyses
Contact Name:	Ram Sah	Contact Name:		P.O. #/ AFE#:		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	100-90 West Beaver Creek Road	Address:		Project #:	2111-E043	Rush TAT (Surcharges will be applied)
	Richmond Hill, Ontario L4B 1E7			Site Location:		☐ 1 Day ☐ 2 Days ☐ 3-4 Days
Phone: 416 754 8515	Fax: 905-8818335	Phone:	Fax:	Site #:		
Email:	ram.sah@soilengineers ltd.com	Email:		Sampled By:	Ashish	Date Required:

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Rush Confirmation #:

Regulation 153	Other Regulations
☑ Table 2 ☐ Res/Park ☐ Med/ Fine	☐ CCME ☐ Sanitary Sewer Bylaw
☐ Table 3 ☐ Ind/Comm ☑ Coarse	☐ MISA ☐ Storm Sewer Bylaw
☐ Table 6 ☑ Agri/ Other	☐ PWQO Region
☐ Table ___	☐ Other (Specify)
FOR RSC (PLEASE CIRCLE) (Y) / N	☐ REG 558 (MIN. 3 DAY TAT REQUIRED)

Include Criteria on Certificate of Analysis: Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

LABORATORY USE ONLY

CUSTODY SEAL Y / N Present	Intact	COOLER TEMPERATURES
Y	Y	2/2/6

COOLING MEDIA PRESENT: (Y) / N

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) (Metals) / Hg / CrVI	PHCs F1-F4	VOCs	PAHs	Metal Scan, Hg, CrVI	pH	BTEX									HOLD - DO NOT ANALYZE	COMMENTS
1	BH/MW1	2022-01-12	9:30	Ground water	11		✓	✓	✓	✓	✓											
2	BH/MW2	2022-01-12	10:15	Ground water	11		✓	✓	✓	✓	✓											
3	BH/MW3	2022-01-12	10:45	Ground water	10		✓	✓	✓	✓												
4	BH/MW4	2022-01-12	11:20	Ground water	10		✓	✓	✓	✓												
5	DUPW1	2022-01-12		Ground water	4					✓	✓											
6	DUPW2	2022-01-12		Ground water	3			✓														
7	Trip Blank	2022-01-12		Water	2							✓										
8																						
9																						
10																						

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Ashish	2022/1/13	10:00	[signature] DIPIKA SINGH	2022/01/13	15:14

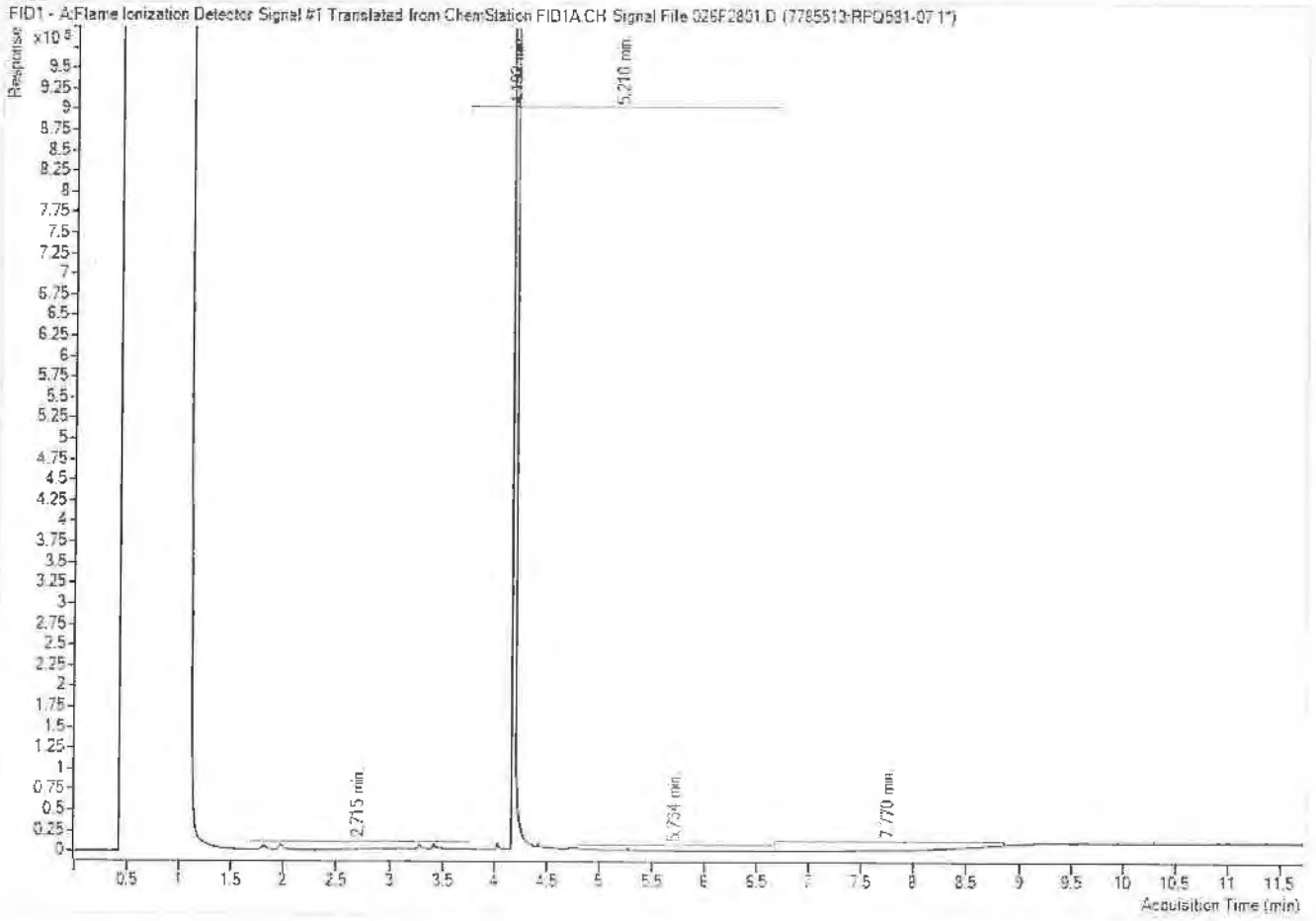
13-Jan-22 15:14
Antonella Brasil
C210071
RJM ENV-670

Rudiner

Bureau Veritas Job #: C210071
Report Date: 2022/01/19
Bureau Veritas Sample: RPQ581

Soil Engineers Ltd
Client Project #: 2111-E043
Client ID: BH/MW1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

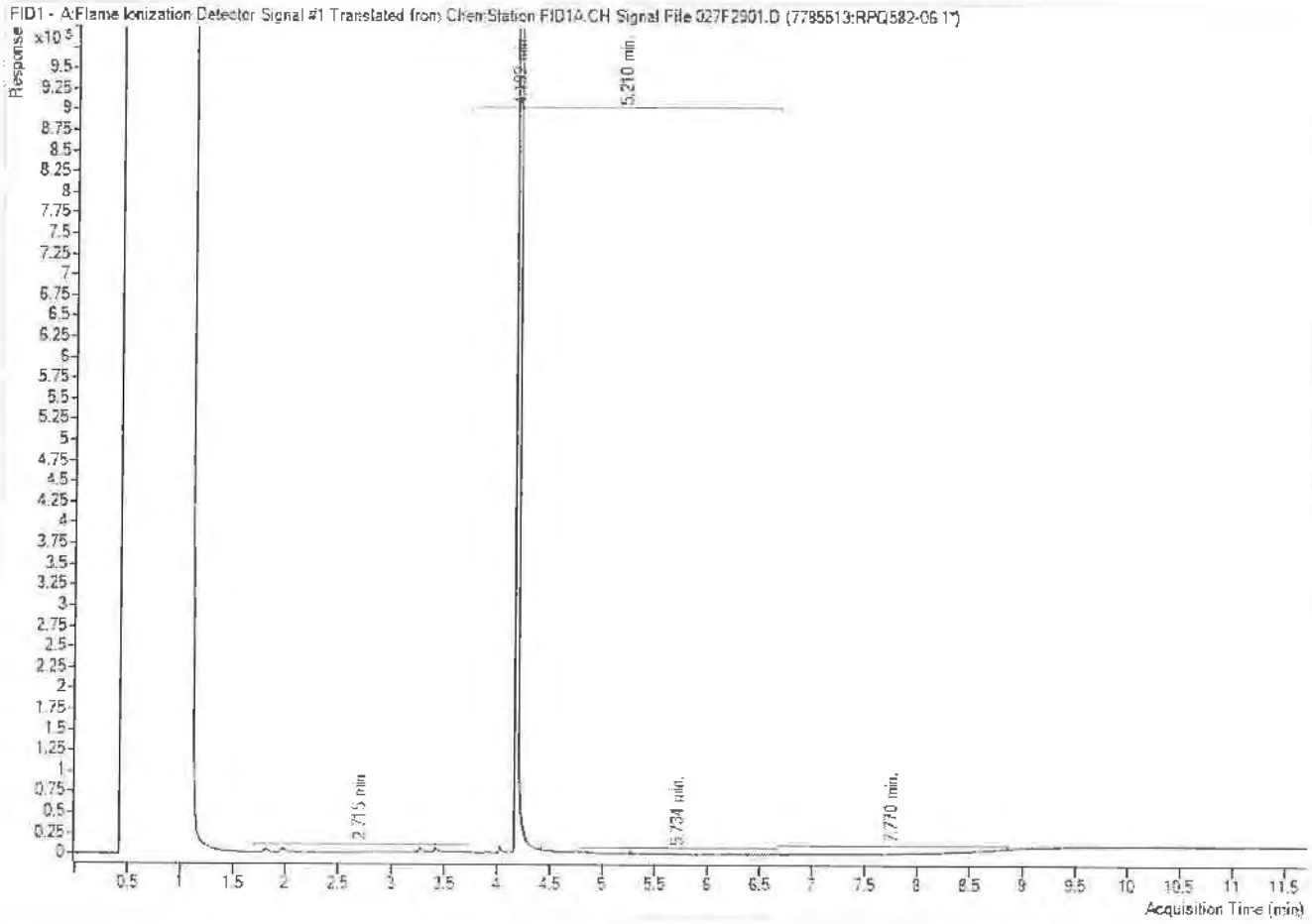


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C210071
Report Date: 2022/01/19
Bureau Veritas Sample: RPQ582

Soil Engineers Ltd
Client Project #: 2111-E043
Client ID: BH/MW2

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

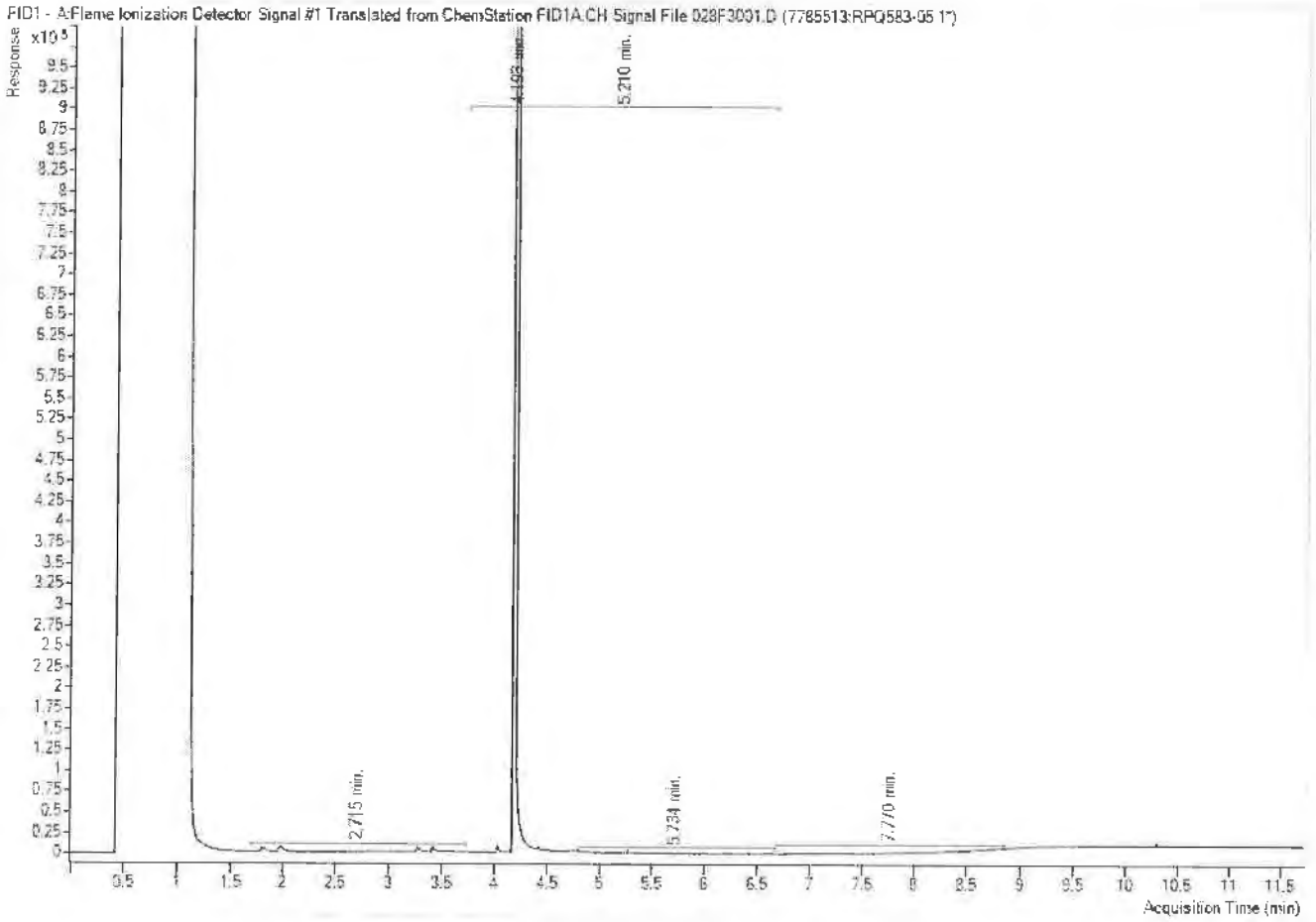


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C210071
Report Date: 2022/01/19
Bureau Veritas Sample: RPQ583

Soil Engineers Ltd
Client Project #: 2111-E043
Client ID: BH/MW3

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

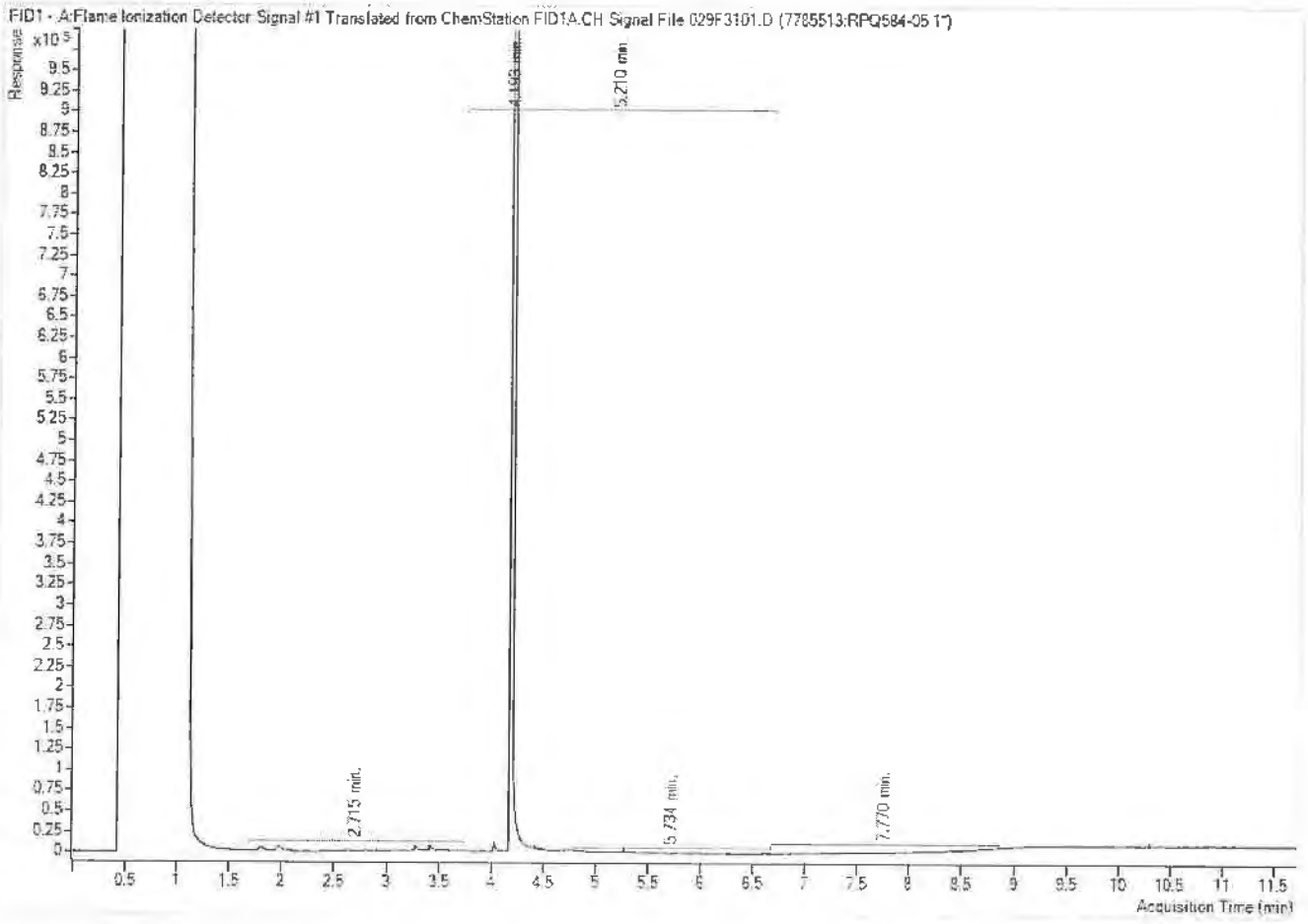


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C210071
Report Date: 2022/01/19
Bureau Veritas Sample: RPQ584

Soil Engineers Ltd
Client Project #: 2111-E043
Client ID: BH/MW4

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.