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A REPORT TO BALLYMORE HOMES

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

PROPOSED RESIDENTIAL AND COMMERCIAL DEVELOPMENT

376 DERRY ROAD WEST

CITY OF MISSISSAUGA

Reference No. 2203-E020

February 1, 2023

DISTRIBUTION

3 Copies - Ballymore Homes

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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 Ballymore Homes 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 376 Derry Road West, in the City of Mississauga (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 Phase Two ESA 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. Consequently, there were no contaminants identified at the test locations at a concentration 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 development. No further environmental investigation is recommended at this time

2.0 INTRODUCTION

Soil Engineers Ltd. (SEL) was retained by Ballymore Homes 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 376 Derry Road West, in the City of Mississauga (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 the SEL Phase One Environmental Site Assessment (Phase One ESA).

2.1 Site Description

The subject site, rectangular in shape and approximately 1.99 hectares (ha) (4.92 acres (ac)) in area, is located at 376 Derry Road West, in the City of Mississauga. The Property Identification Number (PIN) of the subject site is 13214-0058 (LT). The PIN along with its legal description, the UTM coordinates and municipal address 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
13214-0058 (LT)	Part of Lot 10 Concession 1 WHS Toronto as in R0656531 except parts 2 and 3, 43R18327; Mississauga	17 T 603749 m E 4832385 m N	376 Derry Road West, Mississauga

At the time of the assessment, the subject site is comprised of a vacant residential structure and a shed in the northern and north-eastern portions of the subject site, respectively. The neighbouring properties consist of commercial properties to the north beyond roadway, residential and commercial properties to the east and west, and residential properties to the south. The overall grade of the subject site generally decends to the southeast. Watercourses (i.e, Fletchers Creek and a Tributary of Fletchers Creek) are located approximately 210 metres

(m) and 230 m to the east and west of the subject site, respectively.

2.2 Property Ownership

This Phase Two ESA was commissioned to address the environmental concerns in accordance with the SEL proposal dated June 22, 2022, as approved by Mr. Chris McGinnes, Senior Project Manager of Ballymore Homes on November 3, 2022.

Our client can be contacted at:

Ballymore Homes
12840 Yonge Street, Suite 200
Richmond Hill, ON
L4E 4H1

Attention: Mr. Chris McGinnes

2.3 Current and Proposed Future Uses

The subject site is currently comprised of a vacant residential structure and a shed in the northern and north-eastern portions of the subject site, respectively. A residential and commercial 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 and groundwater samples. The following information was used to select the appropriate standard:

- 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 for surface samples, and 5 and 11 for subsurface samples.

- 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.
- Based on the information obtained from the SEL Phase One ESA, 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 and, therefore, the coarse textured soil standards 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 conditions at the subject site.

3.0 BACKGROUND

3.1 Physical Setting

Based on the information obtained from the SEL 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 Mississauga. At the time of the assessment, the neighbouring properties consist of commercial properties to the north beyond roadway, residential and commercial properties to the east and west, and residential properties to the south of the subject site.

The subject site is situated within the Iroquois Plain physiographic region of Southern Ontario. According to the Surface Geology Map of the area, the subject site is underlain by Halton till material with predominantly silt to silt clay matrix, high in matrix carbonate content and clast poor. The subject site is underlain by bedrock of Queenston Formation with rock description as shale, limestone, dolostone and siltstone; and Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview 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 6 m of drift.

The subject site is located in the larger hydrogeological region known as Southern Ontario Lowlands. A watershed map provided by Land Information Ontario (LIO) shows the subject site is situated within the Sixteen Mile Creek- Credit River Watershed.

Based on the review of the Ontario Ministry of the Natural Resources and Forestry (OMNRF) and the LIO for listings of various classes of natural areas within the vicinity of the subject site, watercourses (Fletchers Creek and a Tributary of Fletchers Creek) are located approximately 210 m and 230 m to the east and west of the subject site, respectively. The overall grade of the subject site generally descends towards the southeast. The subject site is

not located in a Well-head Protection Area.The subject site is adjacent to a roadway (Derry Road West) to the northwest.

3.2 Past Investigations

The following previous Environmental Site Assessments Reports completed by Fisher Environmental Ltd. covering the subject site and adjacent property to the west of the subject site were reviewed:

- Phase One Environmental Site Assessment, 376 & 390 Derry Road West, Mississauga, Ontario Fisher Project No. 16-7880-A, dated August 22, 2017.
- Phase Two Environmental Site Assessment, 376 & 390 Derry Road West, Mississauga, Ontario Fisher Project No. 16-7880-B, dated August 22, 2017.

The following previous Investigation Report completed by SEL for the subject site was also reviewed as part of this Phase Two ESA:

- Phase One Environmental Site Assessment, Proposed Residential and Commercial Development, 376 Derry Road West, City of Mississauga, Reference No. 2203-E020, dated May 27, 2022.

Phase One Environmental Site Assessment (2017)

Fisher Environmental Ltd. (FEL) conducted a Phase One Environmental Site Assessment for the subject site and adjacent property to the west of the subject site in August 2017. The findings of the 2017 FEL Phase One ESA report indicated the following item of environmental concern attendant to the subject site:

- Potential fill material of unknown quality is listed at the subject site.

Based on the findings of the Phase One ESA, a Phase Two ESA was recommended to address the above-noted environmental concern at the subject site.

Phase Two Environmental Site Assessment (2017)

In August 2017, FEL conducted a Phase Two Environmental Site Assessment to address the environmental concern identified in the Phase One ESA report.

The field investigation for the Phase Two ESA consisted of drilling five (5) boreholes (designated as BH6, MW7 to MW9 and BH10) to a maximum depth of 9.75 metre below ground surface (mbgs). Three (3) of the boreholes (MW7 to MW9) were completed as monitoring wells for groundwater observation, sampling and testing at the subject site.

The collected soil samples during the field investigation were analyzed for Petroleum Hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), Metals, pH, electrical conductivity (EC) and/or sodium adsorption ratio (SAR) parameters. Groundwater samples were analyzed for PHCs, BTEX, PAHs and Metals parameters. A review of the analytical test results of the soil and groundwater samples indicated the tested samples for the tested parameters met the O. Reg. 153/04 Table 3 Standards at that time.

Phase One Environmental Site Assessment (2022)

In May 2022, SEL conducted a Phase One ESA for the subject site. The Phase One ESA identified a number of 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 impact due to one (1) fuel oil above-ground storage tank (AST) located in the basement of the residential structure at the subject site.

APEC 2: Potential soil and groundwater impact due to a truck fire and diesel fuel spill in the southern portion of the subject site.

APEC 3: Potential soil impact due to earth fill material of unknown quality located in the northern portion of the subject site.

APEC 4: Potential soil impact due to earth fill material and/or stockpiled soils of unknown quality located in the southern and south-eastern portions 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 the SEL Phase One ESA. This Phase Two ESA was conducted in general conformance with the CSA Standard Z769-00 (reaffirmed in 2018) and O. Reg. 153/04 as amended.

The scope of work for this investigation includes:

- Locate the underground and overhead utilities.
- Advance five (5) boreholes (designated as BH/MW1, BH2, BH/MW3, BH/MW4 and BH5) to depths ranging from 2.4 mbgs of 7.6 mbgs and conduct two (2) hand-dug test pits (designated as TP1 and TP2) to depth of 0.4 mbgs.
- Collect representative soil samples from the boreholes and test pits.
- 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 three (3) of the boreholes (e.g., BH/MW1, BH/MW3 and BH/MW4) for groundwater sampling and/or groundwater flow direction.
- 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), Dioxins and Furans, Metals, Mercury (Hg), Chromium (Cr) (VI), Cyanide (CN^-), Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR) 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 medium 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 the SEL Phase One ESA. Consequently, no sediment sampling was conducted as part of the Phase Two ESA.

Boreholes were advanced using a track-mounted Geoprobe drill rig, equipped with direct push thin-walled shelby tube soil sampler. Soil samples collected at regular intervals 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 three (3) selected 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 water 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 advancing five (5) boreholes and conducting two (2) hand-dug test pits, installation of three (3) monitoring wells at the selected boreholes for 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 in the SEL 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 as per Ontario One Call program and a private locator (All Clear Locates)

Field work for the investigation was conductd on November 25, 2022. Five (5) boreholes (designated as BH/MW1, BH2, BH/MW3, BH/MW4 and BH5) were advanced to depths

ranging from 2.4 to 7.6 mbgs. In addition, two (2) hand-dug test pits (designated as TP1 an TP2) were conducted to depth of 0.4 mbgs. Monitoring wells were installed at three (3) selected borehole locations to depths ranging from 6.0 to 7.6 mbgs. The locations of the boreholes are shown on Drawing No. 2.

The boreholes were advanced using a track-mounted Geoprobe drill rig, equipped with direct push shelby tube soil sampler, supplied by a drilling contractor, Kodiak Drilling. Soil samples from the boreholes were recovered at regular intervals, using steel rod casing into the ground at the outer casing. 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 person who recorded the findings and observations.

5.3 **Soil: Sampling**

Soil samples from the boreholes were retrieved at regular intervals, using direct push shelby tube 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. A small amount of the soil smple

was retrived by a disposable 'T' shaped terracore sampler and the soil samples from the Terracore sampler were stored in methanol vials for F1 and VOCs analysis.

The subsoil conditions at the borehole locations indicate that beneath the layer of topsoil, concrete and/or earth fill, the subject site is generally underlain by silty clay, silty clay till and/or weathered shale deposits, at various depths and locations. Detailed descriptions of the encountered subsurface conditions are presented on the Borehole Logs provided in Appendix 'B'.

Generally the representative worst case soil samples from each borehole were selected and sent to the laboratory for chemical analyses, based on the soil vapour measurements and visual and olfactory observations. However, in absence of any evidence of elevated vapor or contamination/unusual observation, the soil samples were selected according to the contaminant of concerns (COCs) behavior (i.e. near the potential source or at the zone of water bearing.

5.4 Field Screening Measurements

Soil samples were logged in the field and headspace vapour screening was conducted 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. 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 field personnel are 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 three (3) monitoring wells were installed at the subject site by Kodiak Drilling on

November 25, 2022. 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 either by flushmount casing or steel monument casing 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 to 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 purging of 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 was conducted at the monitoring wells BH/MW1, BH/MW3 and BH/MW4 on December 6, 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 of 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 only at BH/MW3 location on December 9, 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, as amended – "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 well was stored in a separate container. The metal barrels and container 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 6, 2022 using a hand-held (Trimble Geoexplorer 7000 series) Global Navigation Satellite System

measurement equipment. The equipment is capable of having vertical and horizontal accuracy of ± 0.1 m.

The elevations at the borehole and monitoring well locations are presented in 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 the SEL 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 collected) for VOCs 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, concrete and/or earth fill, the subject site is generally underlain by silty clay, silty clay till and/or weathered shale deposits, at various depths and locations. 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 m in thickness, was contacted at the ground surface of the boreholes BH/MW1, BH/MW3, BH/MW4 and BH5.

Concrete

Concrete, approximately 0.20 m in thickness, was contacted at the ground surface of the borehole BH2.

Earth Fill

Earth fill material including sandy silt, clay and gravel was encountered beneath the topsoil at the borehole BH/MW1, BH/MW4 and BH5, extending to the depths of 1.2 mbgs to 1.5 mbgs.

Silty Clay

Silty clay was encountered beneath the concrete at the borehole BH2, extending to the depth of 0.6 mbgs.

Silty Clay Till

Silty clay till was encountered beneath the topsoil, earth fill and/or silty clay at the boreholes BH/MW1, BH2, BH/MW3, BH/MW4 and BH5, extending to the depths of 2.4 mbgs to 7.6 mbgs.

Shale

Shale was encountered beneath the silty clay till at the boreholes BH/MW3 and BH/MW4, extending to the termination 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 silty clay till deposit. This hydrogeologic unit at the subject site was investigated for this Phase Two ESA.

6.2 Groundwater: Elevations and Flow Direction

Three (3) monitoring wells were installed at the boreholes (BH/MW1, BH/MW3 and BH/MW4) during the field investigations for this Phase Two ESA. The monitoring wells were installed at depths ranging from 6.0 to 7.6 mbgs. Groundwater observation 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 December 6, 2022 at

depths of 2.1, 4.8 and 4.5 mbgs in the monitoring wells BH/MW1, 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 December 6, 2022, were used to determine the shallow aquifer groundwater flow direction. Based on the groundwater monitoring records on December 6, 2022, the groundwater flow direction appears to be to the southeast. 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 December 6, 2022, the horizontal hydraulic gradient for the investigated aquifer within the silty clay till layer at the subject site is between 0.021 m/m and 0.0198 m/m (average 0.020 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 standards 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 20 ppm were recorded for the soil samples collected at the subject site.

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, Dioxins and Furans, Metals, Hg, Cr(VI), EC, SAR, CN^- and/or 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 are 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)

Six (6) 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)

Six (6) 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)

Five (5) original soil samples were submitted for analysis of PAHs. The test results indicate the tested soil samples meet the Table 2 Standards with exception of benzo(a)pyrene at one isolated location BH/MW4/1A. The Benzo(a)pyrene at BH/MW4/1A was found to be as 0.31 µg/g, marginally exceeded the Table 2 Standard of 0.3 µg/g. In order to confirm exceedance benzo(a)pyrene at BH/MW4/1A, additional two (2) soil samples (identified as DUPS3 and DUPS4) collected from same depth were submitted for analysis of PAHs. The concentrations for benzo(a)pyrene for the additional soil samples, DUPS3 and DUPS4 were reported 0.15 µg/g and 0.1 µg/g, respectively, and met the Table 2 Standards. Based on the results of additional two (2) soil samples, the concentration of benzo(a)pyrene at BH/MW4/1A location is considered to meet the Table 2 Standards.

Dioxins and Furans

One (1) original soil sample was submitted for analysis of Dioxins and Furans. The test results indicate the tested soil sample meet the Table 2 Standards.

Metals, Hg, Cr(VI), EC, SAR, CN^- and pH

Six (6) original soil samples and one (1) field duplicate sample were submitted for analysis of Metals, Hg, Cr (VI), EC, SAR, CN^-, and/or pH parameters. The test results indicate the tested soil samples meet the Table 2 Standards with exception of SAR value at BH/MW1/1B. The SAR value at BH/MW1/1B was found to be as 5.9, exceeding the Standard value of 5. The SAR value at other sampling locations (BH/MW3/2, BH/MW4/1B, BH5/1 and TP1) including the field duplicate DUPS2 meet the Table 2 Standards. The BH/MW1 is located adjacent to the roadway. The elevated SAR value at BH/MW1/1B appears to be related application of de-icing material to road surfaces for the safey of vehicular or pedestrian traffic. Based on this, applicable site condition standard is deemed not to be exceeded as per Section 49.1 (1) of the O. Reg. 153/04.

6.7 Groundwater Quality

Groundwater samples were collected from one (1) monitoring well BH/MW3 at the subject site. The groundwater samples were submitted to the laboratory for chemical analyses of PHCs, VOCs, PAHs, Dioxins and Furans, Metals 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 are 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

One (1) set of original groundwater samples were submitted for analysis of PHCs. The test results indicate that the tested groundwater samples meet the Table 2 Standards.

Volatile Organic Compounds

One (1) original set of groundwater samples, one (1) field duplicate samples and one (1) trip blank samples were submitted for analysis of VOCs. The test results indicate the tested groundwater samples meet the Table 2 Standards.

Polycyclic Aromatic Hydrocarbons

One (1) original set of groundwater samples were submitted for analysis of PAHs. The test results indicate the tested groundwater samples meet the Table 2 Standards.

Dioxins and Furans

One (1) original set of groundwater sample was submitted for analysis of Dioxins and Furans. The test results indicate the tested groundwater samples meet the Table 2 Standards.

Metals

One (1) original set of groundwater samples were submitted for analysis of Metals 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), EC, SAR, CN^- and pH in soil and VOCs in groundwater. One (1) trip blank for VOCs 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 one (1) field duplicate groundwater sample 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/MW1/2	Soil	VOCs
DUPS2	BH/MW4/1B	Soil	Metals, Hg, Cr (VI), EC, SAR, CN^- and pH
DUPW1	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 VOCs. The trip blank sample was found to be below the reported laboratory detection limits.

There was no issue with the trip blank that was shipped with the batch of the groundwater samples submitted for 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 as per O. Regulation 153/04, as ammended 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 was 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, rectangular in shape and approximately 1.99 ha (4.92 ac) in area, is located at 376 Derry Road West, in the City of Mississauga. The Property Identification Number (PIN) of the subject site is 13214-0058 (LT). The legal description of the subject site is Part of Lot 10 Concession 1 WHS Toronto as in R0656531 except parts 2 and 3, 43R18327; Mississauga.

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:

On-site PCAs:

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

- One (1) fuel oil AST is located in the basement of the residential structure at the subject site: #28 – Gasoline and Associated Products Storage in Fixed Tanks.
- Potential earth fill material of unknown quality is located in the northern portion of the subject site: #30 – Importation of Fill Material of Unknown Quality.
- Potential earth fill material and/or stockpiled soils of unknown quality is located in the southern and south-eastern portions of the subject site: #30 – Importation of Fill Material of Unknown Quality.

The following on-site PCA that is not listed in the Table 2 of Schedule D of the O. Reg. 153/04 and the PCA is considered to have contributed to the APEC at the subject site.

- Truck fire and diesel fuel spill incident occurred in the southern portion of the subject site: #Other – Truck Fire and Spill.

Off-site PCAs:

In addition, 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 APECs due to relative distance and/or situated down/trans-gradient from the subject site.

- Gasoline station associated with liquid fuel tanks is located approximately 113 m to the west of the subject site: #28 – Gasoline and Associated Products Storage in Fixed Tanks.
- Gasoline station associated with liquid fuel tanks is located approximately 243 m to the west of the subject site: #28 – Gasoline and Associated Products Storage in Fixed Tanks.

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.

- Carwash station is located approximately 113 m to the west of the subject site: #Other - Carwash.
- Carwash station is located approximately 243 m to the west of the subject site: #Other - Carwash.
- Landscaping Company associated with waste oil generator is located approximately 46 m to the northeast of the subject site: #Other - Waste Oil Generator.
- Fuel oil sales facility associated with petroleum distillates waste is listed approximately 177 m to the west of the subject site: #Other – Fuel Oil Waste.
- Gasoline fuel spill occurred at a property located approximately 243 m to the west of the subject site: #Other –Spill.

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 impact due to one (1) fuel oil above-ground storage tank (AST) located in the basement of the residential structure at the subject site.

APEC 2: Potential soil and groundwater impact due to a truck fire and diesel fuel spill in the southern portion of the subject site.

APEC 3: Potential soil impact due to earth fill material of unknown quality located in the northern portion of the subject site.

APEC 4: Potential soil impact due to earth fill material and/or stockpiled soils of unknown quality located in the southern and south-eastern portions 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 residential structure and a shed in the northern and north-eastern portions of the subject site, respectively.

Since no contaminants are found at the test locations at a concentration above the applicable site condition standards, 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.

According to the Surface Geology Map of the area, the subject site is underlain by Halton till material with predominantly silt to silt clay matrix, high in matrix carbonate content and clast poor. The subject site is underlain by bedrock of Queenston Formation with rock description as shale, limestone, dolostone and siltstone; and 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 five (5) boreholes to depths ranging from 2.4 to 7.6 mbgs and conducting two (2) hand-dug test pits to depths of 0.4 mbgs, and installing three (3) monitoring wells at the selected borehole locations. The subsoil conditions at the borehole locations indicate a layer of topsoil and/or concrete approximately 0.20 m in thickness at the ground surface level. The topsoil and/or concrete is underlain by earth fill material, silty clay and/or silty clay till to depth ranging from 0.2 to 7.6 mbgs. The silty clay till is underlain by weathered shale to depths ranging from 6.0 to 6.7 mbgs at the

termination of the boreholes.

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 Sixteen Mile Creek- Credit River Watershed. Based on the inferred topography of the area from topographic maps, precipitation runoff is expected to flow in south-eastern direction.

A total of three (3) 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 silty clay 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 south-easterly. 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 0.021 m/m and 0.0198 m/m (average 0.020 m/m).

6.10.2.3 Approximate Depth to Bedrock

Bedrock was encountered at the subject site during the field investigation at the depths ranging from 6.0 mbgs to 6.5 mbgs. According to the OGS Bedrock Drift Thickness Database, the depth of bedrock in the general vicinity of the subject site is approximately 6 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 ranged from 2.1 mbgs to 4.8 mbgs on December 6, 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 of the tested soil samples is between 5 and 9 for surface samples, and 5 and 11 for subsurface samples. Therefore, Section 41 of the regulation (Site Condition Standards, Environmental Sensitive Areas) does not apply to the subject site.

The subject site 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 during the Phase Two ESA presence of earth fill material of unknown quality was recorded in the northern, southern and south-eastern portions of the subject site. This fill material was investigated during the Phase Two ESA. No soil was brought at the subject site during the Phase Two ESA.

6.10.2.7 Proposed Building and Other Structures

A residential and commercial 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, was 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 samples were submitted for chemical analyses of PHCs, VOCs and Metals parameters.

APEC 2: Soil and groundwater samples were submitted for chemical analyses of PHCs, VOCs, PAHs, Dioxins and Furans, Metals parameters.

APEC 3: Soil samples were submitted for chemical analyses of PHCs, VOCs, PAHs,

Metals, Cr(VI), Hg, CN^-, EC, SAR and pH parameters.

APEC 4: Soil samples were submitted for chemical analyses of PHCs, VOCs, PAHs, Metals, Cr(VI), Hg, CN^-, EC, SAR and pH parameters.

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 were identified at the test locations at a concentration above the applicable site condition standards.

6.10.3.3 Contaminant Medium

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

6.10.3.4 Reasons for Discharge

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

6.10.3.5 Migration of Contaminants

No contaminants were 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 were 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 the SEL Phase One Environmental Site Assessment (Phase One ESA) at the subject site:

APEC 1: Potential soil impact due to one (1) fuel oil above-ground storage tank (AST) located in the basement of the residential structure at the subject site.

APEC 2: Potential soil and groundwater impact due to a truck fire and diesel fuel spill in the southern portion of the subject site.

APEC 3: Potential soil impact due to earth fill material of unknown quality located in the northern portion of the subject site.

APEC 4: Potential soil impact due to earth fill material and/or stockpiled soils of unknown quality located in the southern and south-eastern portions 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 five (5) boreholes (designated as BH/MW1, BH2, BH/MW3, BH/MW4 and BH5) to depths ranging from 2.4 to 7.6 mbgs and conducting two (2) test pits (designated as TP1 and TP2) to depths of 0.4 mbgs. Monitoring wells were installed in three (3) selected boreholes locations (i.e., BH/MW1, BH/MW3 and BH/MW4) to depths ranging from 6.0 to 7.6 mbgs.
- The subsoil conditions at the borehole locations indicate that beneath a layer of topsoil, concrete and/or earth fill material, the subject site is generally underlain by silty clay, silty clay till and/or shale deposits to the termination of the 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 20 ppmv were recorded in the

soil samples retrieved from the sampling locations.

- Based on the soil field screening and visual and olfactory 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), Dioxins and Furans, Metals, Mercury (Hg), Chromium (Cr) (VI), Cyanide (CN^-), Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR) and/or pH parameters.
- No visible sheen or odours were recorded in groundwater in any of the monitoroing wells installed at the subject site.
- Groundwater samples from one (1) monitoring well were collected and submitted for analyses of PHCs, VOCs, PAHs, Dioxins and Furans, Metals 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), EC, SAR, CN^- and pH in soil and VOCs in groundwater. One (1) trip blank sample for VOCs, 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.
- The overall QA/QC results are considered reliable.
- A review of the analytical test results of soil and groundwater samples indicates the tested parameters at the test locations meet the Table 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 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. 2203-E020

Project No. 2203-E020

Table I – Monitoring Well Installation

Monitoring Well I.D.	Bottom of Monitoring Well (mbgs)	Screen Length (m)	Screen Interval (m)	Filter Pack (m)	Bentonite Plug (m)
BH/MW 1	7.6	3.0	4.6 – 7.6	4.0 – 7.6	0.3 – 4.0
BH/MW 3	6.5	3.0	3.5 – 6.5	2.9 – 6.5	0.3 – 2.9
BH/MW 4	6.0	3.0	3.0 – 6.0	2.4 – 6.0	0.3 – 2.4

Note: mbgs – meters below ground surface

Monitoring Well No.	Ground Elevation (masl)	Measured Groundwater Level		Field Observations		
		December 06, 2022				
		Depth (mbgs)	Elevation (m)	Odour	Colour	Sheen or Free Product
BH/MW 1	199.4	2.1	197.3	None	Clear	None
BH/MW 3	197.7	4.8	192.9	None	Clear	None
BH/MW 4	196.8	4.5	192.3	None	Clear	None

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

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Table III

SOIL CHEMICAL ANALYSIS - Inorganics Parameters

Project No. 2203-E020

Sample ID	RDL*	BH/MW1/1B	BH2/1	BH/MW3/2	BH/MW3/4	BH/MW4/1B	DUPS2	BH5/1	TP1	Ontario Regulation 153/04 Table 2 RPI Standard**
Sample Date		25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	
Laboratory ID		UKU752	UKU754	UKU757	UKU759	UKU761	UKU768	UKU763	UKU765	
Bore Hole/TP No.		BH1	BH2	BH3	BH3	BH4	BH4	BH5	TP1	
Depth (mbgs)		0.4 - 0.8	0.0 - 0.6	0.8 - 1.5	2.3 - 3.1	0.4 - 0.8	0.4 - 0.8	0.0 - 0.8	0.0-0.4	
Antimony	0.2	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20	7.5
Arsenic	1	6	4.5	4.5	-	4.9	4.7	4.2	3.6	18
Barium	0.5	88	54	53	-	54	51	50	66	390
Beryllium	0.2	0.95	0.63	0.57	-	0.74	0.66	0.48	0.6	4
Cadmium	0.1	0.15	<0.10	0.12	-	<0.10	<0.10	0.13	0.18	1.2
Chromium	1	27	19	17	-	20	20	16	18	160
Cobalt	0.1	12	11	11	-	11	11	9.2	8.6	22
Copper	0.5	30	29	29	-	29	27	24	21	140
Lead	1	14	8.5	8.2	-	11	8.8	12	14	120
Mercury	0.05	<0.050	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	0.27
Molybdenum	0.5	<0.50	0.58	<0.50	-	<0.50	<0.50	0.54	<0.50	6.9
Nickel	0.5	27	24	21	-	25	24	19	19	100
Selenium	0.5	<0.50	<0.50	<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	<0.20	<0.20	20
Thallium	0.05	0.15	0.11	0.11	-	0.12	0.12	0.13	0.12	1
Vanadium	5	36	27	24	-	28	27	24	27	86
Zinc	5	68	55	50	-	57	55	54	67	340
pH (pH Units)		7.56	-	7.71	7.76	7.8	7.84	7.78	7.55	NV
Conductivity (ms/cm)	0.002	0.39	-	0.24	-	0.25	0.23	0.15	0.27	0.7
Sodium Adsorption Ratio		5.9	-	0.29	-	1.5	1.4	0.27	0.2	5
Cyanide, Free	0.01	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	0.051
Boron (Total)	5	6.9	10	7.5	-	10	9.7	7.8	8.3	120
Uranium	0.05	0.49	0.68	0.47	-	0.71	0.69	0.51	0.57	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 Residential/Parkland/Institutional property use for coarse textured soil

Soil Engineers Ltd.

Table III

SOIL CHEMICAL ANALYSIS - Volatile Organic Compound (VOCs) Parameters

Project No. 2203-E020

Sample ID	RDL*	BH/MW1/2	DUPS1	BH2/2	BH/MW3/4	BH/MW4/2	BH5/2	TP2	Ontario Regulation 153/04 Table 2 RPI Standard**
Sample Date		25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	
Laboratory ID		UKU753	UKU767	UKU755	UKU759	UKU762	UKU764	UKU766	
Bore Hole No.		BH1	BH1	BH2	BH3	BH4	BH5	TP2	
Depth (mbgs)		0.8 - 1.5	0.8 - 1.5	0.6 - 1.2	2.3 - 3.1	0.8 - 1.5	0.8 - 1.5	0.0-0.4	
Acetone	0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	16
Benzene	0.006	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.21
Bromodichloromethane	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.5
Bromoform	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.27
Bromomethane	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Carbon Tetrachloride	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Chlorobenzene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	2.4
Chloroform	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Dibromochloromethane	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	2.3
1,2-Dichlorobenzene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.2
1,3-Dichlorobenzene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	4.8
1,4-Dichlorobenzene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.083
1,1-Dichloroethane	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.47
1,2-Dichloroethane	0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	0.05
1,1-Dichloroethylene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Cis-1,2-Dichloroethylene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.9
Trans-1,2-Dichloroethylene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.084
1,2-Dichloropropane	0.04	<0.040	<0.040	<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	<0.030	<0.030	NV
Trans-1,3-Dichloropropylene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	NV
Ethylbenzene	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	1.1
Ethylene Dibromide	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Methyl Ethyl Ketone	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	16
Methylene Chloride	0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	0.1
Methyl Isobutyl Ketone	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	1.7
Methyl-t-Butyl Ether	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.75
Styrene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.7
1,1,1,2-Tetrachloroethane	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.058
1,1,2,2-Tetrachloroethane	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Toluene	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	2.3
Tetrachloroethylene	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.28
1,1,1-Trichloroethane	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.38
1,1,2-Trichloroethane	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.05
Trichloroethylene	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.061
Vinyl Chloride	0.019	<0.019	<0.019	<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	<0.020	<0.020	NV
o-Xylene	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	0.025	<0.020	NV
Total Xylenes	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	0.025	<0.020	3.1
Dichlorodifluoromethane	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	16
Hexane(n)	0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	2.8
Trichlorofluoromethane	0.04	<0.040	<0.040	<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	<0.050	<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 Residential/Parkland/Institutional property use for coarse textured soil

Soil Engineers Ltd.

Table III

SOIL CHEMICAL ANALYSIS - Polycyclic Aromatic Hydrocarbons (PAHs) Parameters

Project No. 2203-E020

Sample ID	RDL*	BH/MW1/1A	BH/MW3/1A	BH/MW4/1A	DUPS3	DUPS4	BH5/1	TP1	Ontario Regulation 153/04 Table 2 RPI Standard**
Sample Date		25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	
Laboratory ID		UKU751	UKU756	UKU760	URA481	URA482	UKU763	UKU765	
Bore Hole No.		BH1	BH3	BH4	BH4	BH4	BH5	TP1	
Depth (mbgs)		0.0 - 0.4	0.0 - 0.2	0.0 - 0.4	0.0 - 0.4	0.0 - 0.4	0.0 - 0.8	0.0-0.4	
Acenaphthene	0.05	<0.0050	<0.0050	<0.050	<0.050	<0.050	<0.050	<0.050	7.9
Acenaphthylene	0.05	<0.0050	<0.0050	<0.050	<0.050	<0.050	<0.050	<0.050	0.15
Anthracene	0.05	<0.0050	<0.0050	<0.050	<0.050	<0.050	<0.050	<0.050	0.67
Benzo(a)anthracene	0.05	<0.0050	<0.0050	<0.050	0.055	<0.050	<0.050	<0.050	0.5
Benzo(a)pyrene	0.05	<0.0050	<0.0050	0.31	0.15	0.1	<0.050	<0.050	0.3
Benzo(b/j)fluoranthene	0.05	<0.0050	<0.0050	0.28	0.14	0.084	<0.050	<0.050	0.78
Benzo(ghi)perylene	0.05	<0.0050	<0.0050	0.73	0.33	0.24	0.058	<0.050	6.6
Benzo(k)fluoranthene	0.05	<0.0050	<0.0050	0.058	<0.050	<0.050	<0.050	<0.050	0.78
Chrysene	0.05	<0.0050	<0.0050	<0.050	0.051	<0.050	<0.050	<0.050	7
Dibenzo(a,h)anthracene	0.05	<0.0050	<0.0050	0.058	<0.050	<0.050	<0.050	<0.050	0.1
Fluoranthene	0.05	<0.0050	<0.0050	<0.050	0.14	<0.050	<0.050	<0.050	0.69
Fluorene	0.05	<0.0050	<0.0050	<0.050	<0.050	<0.050	<0.050	<0.050	62
Indeno(1,2,3-cd)pyrene	0.05	<0.0050	<0.0050	0.29	0.13	0.087	<0.050	<0.050	0.38
1-Methylnaphthalene	0.05	<0.0050	<0.0050	<0.050	<0.050	<0.050	<0.050	<0.050	0.99
2-Methylnaphthalene	0.05	<0.0050	<0.0050	<0.050	<0.050	<0.050	<0.050	<0.050	0.99
Naphthalene	0.05	<0.0050	<0.0050	<0.050	<0.050	<0.050	<0.050	<0.050	0.6
Phenanthrene	0.05	<0.0050	<0.0050	<0.050	0.11	<0.050	<0.050	<0.050	6.2
Pyrene	0.05	<0.0050	<0.0050	0.24	0.16	0.072	<0.050	<0.050	78
Methylnaphthalene, 2-(1-)	0.071	<0.0071	<0.0071	<0.071	<0.071	<0.071	<0.071	<0.071	0.99
Total Toxic Equivalency for Dioxins & Furans	-	-	0.000000435	-	-	-	-	-	0.000013

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 Residential/Parkland/Institutional property use for coarse textured soil

SOIL CHEMICAL ANALYSIS - Petroleum Hydrocarbons (PHCs) Parameters

Project No. 2203-E020

Sample ID	RDL*	BH/MW1/2	BH2/2	BH/MW3/3	BH/MW4/2	BH5/2	TP2	Ontario Regulation 153/04 Table 2 RPI Standard**
Sample Date		25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	25-November-2022	
Laboratory ID		UKU753	UKU755	UKU758	UKU762	UKU764	UKU766	
Bore Hole No.		BH1	BH2	BH3	BH4	BH5	TP2	
Depth (mbgs)		0.8 - 1.5	0.6 - 1.2	1.5 - 2.4	0.8 - 1.5	0.8 - 1.5	0.0-0.4	
Benzene	0.02	-	-	<0.020	-	-	-	0.21
Toluene	0.02	-	-	<0.020	-	-	-	2.3
Ethylbenzene	0.02	-	-	<0.020	-	-	-	1.1
m/p xylenes	0.04	-	-	<0.040	-	-	-	NV
o xylene	0.02	-	-	<0.020	-	-	-	NV
Total Xylenes	0.04	-	-	<0.040	-	-	-	3.1
F1 (C6-C10)	10	<10	<10	<10	<10	<10	<10	55
F1 (C6-C10) - BTEX	10	<10	<10	<10	<10	<10	<10	55
F2 (C10-C16)	10	<10	<10	<10	<10	<10	<10	98
F3 (C16-C34)	50	<50	<50	<50	<50	210	81	300
F4 (C34-C50)	50	<50	<50	<50	<50	490	100	2800
F4 Gravimetric	100	-	-	-	-	1400	-	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 Residential/Parkland/Institutional property use for coarse textured soil

Soil Engineers Ltd

Table IV

GROUND WATER CHEMICAL ANALYSIS - Metals and Inorganic Parameters

Project No. 2203-E020

Sample ID	RDL*	BH/MW3	BH/MW3	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		09-December-2022	09-December-2022	
Laboratory ID		UOH528	UOQ781	
Bore Hole No.		BH3	BH3	
Screen Depth (mbgs)		3.5 - 6.5	3.5 - 6.5	
Antimony	0.5	0.61	-	6
Arsenic	1	4.3	-	25
Barium	2	81	-	1000
Beryllium	0.4	<0.40	-	4
Boron	10	360	-	5000
Cadmium	0.09	<0.090	-	2.7
Chromium	5	<5.0	-	50
Chromium VI	0.5	<0.50	-	25
Cobalt	0.5	<0.50	-	3.8
Copper	0.9	<0.90	-	87
Lead	0.5	<0.50	-	10
Mercury	0.1	-	<0.10	0.29
Molybdenum	0.5	41	-	70
Nickel	1	1.1	-	100
Selenium	2	<2.0	-	10
Silver	0.09	<0.090	-	1.5
Thallium	0.05	<0.050	-	2
Vanadium	0.5	1.5	-	6.2
Zinc	5	<5.0	-	1100
pH (pH Units)	-	7.95		NV
Cynaide, Free	1	<1	-	66
Uranium	0.1	4.5	-	20

Analysis by Bureau Veritas Laboratories, 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

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

Project No. 2203-E020

Sample ID	RDL*	BH/MW3	DUPW1	TRIP BLANK	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		09-December-2022	09-December-2022	09-December-2022	
Laboratory ID		UOH528	UOH529	UOH530	
Bore Hole No.		BH3	BH3	-	
Screen Depth (mbgs)		3.5 - 6.5	3.5 - 6.5	-	
Acetone	10	<10	<10	<10	2700
Benzene	0.2	<0.17	<0.20	<0.20	5
Bromodichloromethane	0.5	<0.50	<0.50	<0.50	16
Bromoform	1	<1.0	<1.0	<1.0	25
Bromomethane	0.5	<0.50	<0.50	<0.50	0.89
Carbon Tetrachloride	0.19	<0.20	<0.19	<0.19	0.79
Chlorobenzene	0.2	<0.20	<0.20	<0.20	30
Chloroform	0.2	<0.20	<0.20	<0.20	2.4
Dibromochloromethane	0.5	<0.50	<0.50	<0.50	25
1,2-Dichlorobenzene	0.4	<0.50	<0.40	<0.40	3
1,3-Dichlorobenzene	0.4	<0.50	<0.40	<0.40	59
1,4-Dichlorobenzene	0.4	<0.50	<0.40	<0.40	1
1,1-Dichloroethane	0.2	<0.20	<0.20	<0.20	5
1,2-Dichloroethane	0.49	<0.50	<0.49	<0.49	1.6
1,1-Dichloroethylene	0.2	<0.20	<0.20	<0.20	1.6
Cis-1,2-Dichloroethylene	0.5	<0.50	<0.50	<0.50	1.6
Trans-1,2-Dichloroethylene	0.5	<0.50	<0.50	<0.50	1.6
1,2-Dichloropropane	0.2	<0.20	<0.20	<0.20	5
Cis-1,3-Dichloropropylene	0.3	<0.30	<0.30	<0.30	NV
Trans-1,3-Dichloropropylene	0.4	<0.40	<0.40	<0.40	NV
Ethylbenzene	0.2	<0.20	<0.20	<0.20	2.4
Ethylene Dibromide	0.19	<0.20	<0.19	<0.19	0.2
Methyl Ethyl Ketone	10	<10	<10	<10	1800
Methylene Chloride	2	<2.0	<2.0	<2.0	50
Methyl Isobutyl Ketone	5	<5.0	<5.0	<5.0	640
Methyl-t-Butyl Ether	0.5	<0.50	<0.50	<0.50	15
Styrene	0.4	<0.50	<0.40	<0.40	5.4
1,1,1,2-Tetrachloroethane	0.5	<0.50	<0.50	<0.50	1.1
1,1,2,2-Tetrachloroethane	0.4	<0.50	<0.40	<0.40	1
Toluene	0.2	0.39	0.32	<0.20	24
Tetrachloroethylene	0.2	<0.20	<0.20	<0.20	1.6
1,1,1-Trichloroethane	0.2	<0.20	<0.20	<0.20	200
1,1,2-Trichloroethane	0.4	<0.50	<0.40	<0.40	4.7
Trichloroethylene	0.2	<0.20	<0.20	<0.20	1.6
Vinyl Chloride	0.2	<0.20	<0.20	<0.20	0.5
m-Xylene & p-Xylene	0.2	<0.20	<0.20	<0.20	NV
o-Xylene	0.2	<0.20	<0.20	<0.20	NV
Total Xylenes	0.2	<0.20	<0.20	<0.20	300
Dichlorodifluoromethane	1	<1.0	<1.0	<1.0	590
Hexane(n)	1	<1.0	<1.0	<1.0	51
Trichlorofluoromethane	0.5	<0.50	<0.50	<0.50	150
1,3-Dichloropropene (cis + trans)	0.5	<0.50	<0.50	<0.50	0.5

Analysis by Bureau Veritas Laboratories, 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

GROUND WATER CHEMICAL ANALYSIS - BTEX and Petroleum Hydrocarbon (PHCs) Parameters

Project No. 2203-E020

Sample ID	RDL*	BH/MW3	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		09-December-2022	
Laboratory ID		UOH528	
Bore Hole No.		BH3	
Screen Depth (mbgs)		3.5 - 6.5	
Benzene	-	-	5
Toluene	-	-	24
Ethylbenzene	-	-	2.4
m/p xylenes	-	-	NV
o xylene	-	-	NV
Total Xylenes	-	-	300
F1 (C6-C10)	25	<25	750
F1 (C6-C10) - BTEX	25	<25	750
F2 (C10-C16)	100	<100	150
F3 (C16-C34)	200	<200	500
F4 (C34-C50)	200	<200	500

Analysis by Bureau Veritas Laboratories, 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

GROUND WATER CHEMICAL ANALYSIS - Polycyclic Aromatic Hydrocarbons (PAHs) Parameters

Project No. 2203-E020

Sample ID	RDL*	BH/MW3	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		09-December-2022	
Laboratory ID		UOH528	
Bore Hole No.		BH3	
Screen Depth (mbgs)		3.5 - 6.5	
Acenaphthene	0.05	<0.050	4.1
Acenaphthylene	0.05	<0.050	1
Anthracene	0.05	<0.050	2.4
Benzo(a)anthracene	0.05	<0.050	1
Benzo(a)pyrene	0.009	<0.0090	0.01
Benzo(b/j)fluoranthene	0.05	<0.050	0.1
Benzo(ghi)perylene	0.05	<0.050	0.2
Benzo(k)fluoranthene	0.05	<0.050	0.1
Chrysene	0.05	<0.050	0.1
Dibenzo(a,h)anthracene	0.05	<0.050	0.2
Fluoranthene	0.05	<0.050	0.41
Fluorene	0.05	<0.050	120
Indeno(1,2,3-cd)pyrene	0.05	<0.050	0.2
1-Methylnaphthalene	0.05	<0.050	3.2
2-Methylnaphthalene	0.05	<0.050	3.2
Naphthalene	0.05	<0.050	11
Phenanthrene	0.03	<0.030	1
Pyrene	0.05	<0.050	4.1
Methylnaphthalene, 2-(1-)	0.071	<0.071	3.2
Total Toxic Equivalency for Dioxins & Furans	-	0.00000408	0.000015

Analysis by Bureau Veritas Laboratories, 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

Project No. 2203-E020

Table V – Maximum Concentration (Soil)

Summary of Metals and Inorganics

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Antimony	µg/g	<0.2	-	-
Arsenic	µg/g	6	BH/MW1/1B	0.4 - 0.8
Barium	µg/g	88	BH/MW1/1B	0.4 - 0.8
Beryllium	µg/g	0.95	BH/MW1/1B	0.4 - 0.8
Cadmium	µg/g	0.18	TP1	0.0-0.4
Chromium	µg/g	27	BH/MW1/1B	0.4 - 0.8
Cobalt	µg/g	12	BH/MW1/1B	0.4 - 0.8
Copper	µg/g	30	BH/MW1/1B	0.4 - 0.8
Lead	µg/g	14	BH/MW1/1B	0.4 - 0.8
Mercury	µg/g	<0.05	-	-
Molybdenum	µg/g	0.58	BH2/1	0.0 - 0.6
Nickel	µg/g	27	BH/MW1/1B	0.4 - 0.8
Selenium	µg/g	<0.5	-	-
Silver	µg/g	<0.2	-	-
Thallium	µg/g	0.15	BH/MW1/1B	0.4 - 0.8
Vanadium	µg/g	36	BH/MW1/1B	0.4 - 0.8
Zinc	µg/g	68	BH/MW1/1B	0.4 - 0.8
pH (pH Units)	-	7.84	DUPS2	0.4 - 0.8
Conductivity (ms/cm)	mS/cm	0.39	BH/MW1/1B	0.4 - 0.8
Sodium Adsorption Ratio	µg/g	1.5	BH/MW4/1B	0.4 - 0.8
Cyanide, Free	µg/g	<0.01	-	-
Boron (Total)	µg/g	10	BH2/1	0.0 - 0.6
Uranium	µg/g	0.71	BH/MW4/1B	0.4 - 0.8

Project No. 2203-E020

Table V – Maximum Concentration (Soil)

Summary of VOCs

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Acetone	µg/g	<0.49	-	-
Benzene	µg/g	<0.006	-	-
Bromodichloromethane	µg/g	<0.04	-	-
Bromoform	µg/g	<0.04	-	-
Bromomethane	µg/g	<0.04	-	-
Carbon Tetrachloride	µg/g	<0.04	-	-
Chlorobenzene	µg/g	<0.04	-	-
Chloroform	µg/g	<0.04	-	-
Dibromochloromethane	µg/g	<0.04	-	-
1,2-Dichlorobenzene	µg/g	<0.04	-	-
1,3-Dichlorobenzene	µg/g	<0.04	-	-
1,4-Dichlorobenzene	µg/g	<0.04	-	-
1,1-Dichloroethane	µg/g	<0.04	-	-
1,2-Dichloroethane	µg/g	<0.049	-	-
1,1-Dichloroethylene	µg/g	<0.04	-	-
Cis-1,2-Dichloroethylene	µg/g	<0.04	-	-
Trans-1,2-Dichloroethylene	µg/g	<0.04	-	-
1,2-Dichloropropane	µg/g	<0.04	-	-
Cis-1,3-Dichloropropylene	µg/g	<0.03	-	-
Trans-1,3-Dichloropropylene	µg/g	<0.04	-	-
Ethylbenzene	µg/g	<0.01	-	-
Ethylene Dibromide	µg/g	<0.04	-	-
Methyl Ethyl Ketone	µg/g	<0.4	-	-
Methylene Chloride	µg/g	<0.049	-	-
Methyl Isobutyl Ketone	µg/g	<0.4	-	-
Methyl-t-Butyl Ether	µg/g	<0.04	-	-
Styrene	µg/g	<0.04	-	-
1,1,1,2-Tetrachloroethane	µg/g	<0.04	-	-

Project No. 2203-E020

Table V – Maximum Concentration (Soil)

Summary of VOCs (continued)

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
1,1,2,2-Tetrachloroethane	µg/g	<0.04	-	-
Toluene	µg/g	<0.02	-	-
Tetrachloroethylene	µg/g	<0.04	-	-
1,1,1-Trichloroethane	µg/g	<0.04	-	-
1,1,2-Trichloroethane	µg/g	<0.04	-	-
Trichloroethylene	µg/g	<0.01	-	-
Vinyl Chloride	µg/g	<0.019	-	-
m-Xylene & p-Xylene	µg/g	<0.02	-	-
o-Xylene	µg/g	0.025	BH5/2	0.8 - 1.5
Total Xylenes	µg/g	0.025	BH5/2	0.8 - 1.5
Dichlorodifluoromethane	µg/g	<0.04	-	-
Hexane(n)	µg/g	<0.04	-	-
Trichlorofluoromethane	µg/g	<0.04	-	-
1,3-Dichloropropene (cis + trans)	µg/g	<0.05	-	-

Project No. 2203-E020

Table V – Maximum Concentration (Soil)

Summary of PAHs

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Acenaphthene	µg/g	<0.05	-	-
Acenaphthylene	µg/g	<0.05	-	-
Anthracene	µg/g	<0.05	-	-
Benzo(a)anthracene	µg/g	0.055	DUPS3	0.0 - 0.4
Benzo(a)pyrene	µg/g	0.15	DUPS3	0.0 - 0.4
Benzo(b/j)fluoranthene	µg/g	0.28	BH/MW4/1A	0.0 - 0.4
Benzo(ghi)perylene	µg/g	0.73	BH/MW4/1A	0.0 - 0.4
Benzo(k)fluoranthene	µg/g	0.058	BH/MW4/1A	0.0 - 0.4
Chrysene	µg/g	0.051	DUPS3	0.0 - 0.4
Dibenzo(a,h)anthracene	µg/g	0.058	BH/MW4/1A	0.0 - 0.4
Fluoranthene	µg/g	0.14	DUPS3	0.0 - 0.4
Fluorene	µg/g	<0.05	-	-
Indeno(1,2,3-cd)pyrene	µg/g	0.29	BH/MW4/1A	0.0 - 0.4
1-Methylnaphthalene	µg/g	<0.05	-	-
2-Methylnaphthalene	µg/g	<0.05	-	-
Naphthalene	µg/g	<0.05	-	-
Phenanthrene	µg/g	0.11	DUPS3	0.0 - 0.4
Pyrene	µg/g	0.24	BH/MW4/1A	0.0 - 0.4
Methylnaphthalene, 2-(1-)	µg/g	<0.071	-	-
Total Toxic Equivalency for Dioxins & Furans	µg/g	0.000000435	BH/MW3/1A	0.0-0.4

Project No. 2203-E020

Table V – Maximum Concentration (Soil)

Summary of CCME F1-F4

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Benzene	µg/g	<0.02	-	-
Toluene	µg/g	<0.02	-	-
Ethylbenzene	µg/g	<0.02	-	-
m/p xylenes	µg/g	<0.04	-	-
o xylene	µg/g	<0.02	-	-
Total Xylenes	µg/g	<0.04	-	-
F1 (C6-C10)	µg/g	<10	-	-
F1 (C6-C10) - BTEX	µg/g	<10	-	-
F2 (C10-C16)	µg/g	<10	-	-
F3 (C16-C34)	µg/g	210	BH5/2	0.8 - 1.5
F4 (C34-C50)	µg/g	490	BH5/2	0.8 - 1.5
F4 Gravimetric	µg/g	1400	BH5/2	0.8 - 1.5

Project No. 2203-E020
Table VI – Maximum Concentration (Groundwater)

Summary of Metals and Inorganics

Parameter	Unit	Maximum Concentration	Sample ID	Screen Depth (m)
Antimony	µg/L	0.61	BH/MW3	3.5 - 6.5
Arsenic	µg/L	4.3	BH/MW3	3.5 - 6.5
Barium	µg/L	81	BH/MW3	3.5 - 6.5
Beryllium	µg/L	<0.4	-	-
Boron	µg/L	360	BH/MW3	3.5 - 6.5
Cadmium	µg/L	<0.09	-	-
Chromium	µg/L	<5	-	-
Chromium VI	µg/L	<0.5	-	-
Cobalt	µg/L	<0.5	-	-
Copper	µg/L	<0.9	-	-
Lead	µg/L	<0.5	-	-
Mercury	µg/L	<0.1	-	-
Molybdenum	µg/L	41	BH/MW3	3.5 - 6.5
Nickel	µg/L	1.1	BH/MW3	3.5 - 6.5
Selenium	µg/L	<2	-	-
Silver	µg/L	<0.09	-	-
Thallium	µg/L	<0.05	-	-
Vanadium	µg/L	1.5	BH/MW3	3.5 - 6.5
Zinc	µg/L	<5	-	-
pH (pH Units)	-	7.95	BH/MW3	3.5-6.5
Cynaide, Free	µg/L	<1	-	-
Uranium	µg/L	4.5	BH/MW3	3.5 - 6.5

Project No. 2203-E020
Table VI – Maximum Concentration (Groundwater)

Summary of VOCs

Parameter	Unit	Maximum Concentration	Sample ID	Screen Depth (m)
Acetone	µg/L	<10	-	-
Benzene	µg/L	<0.2	-	-
Bromodichloromethane	µg/L	<0.5	-	-
Bromoform	µg/L	<1	-	-
Bromomethane	µg/L	<0.5	-	-
Carbon Tetrachloride	µg/L	<0.19	-	-
Chlorobenzene	µg/L	<0.2	-	-
Chloroform	µg/L	<0.2	-	-
Dibromochloromethane	µg/L	<0.5	-	-
1,2-Dichlorobenzene	µg/L	<0.4	-	-
1,3-Dichlorobenzene	µg/L	<0.4	-	-
1,4-Dichlorobenzene	µg/L	<0.4	-	-
1,1-Dichloroethane	µg/L	<0.2	-	-
1,2-Dichloroethane	µg/L	<0.49	-	-
1,1-Dichloroethylene	µg/L	<0.2	-	-
Cis-1,2-Dichloroethylene	µg/L	<0.5	-	-
Trans-1,2-Dichloroethylene	µg/L	<0.5	-	-
1,2-Dichloropropane	µg/L	<0.2	-	-
Cis-1,3-Dichloropropylene	µg/L	<0.3	-	-
Trans-1,3-Dichloropropylene	µg/L	<0.4	-	-
Ethylbenzene	µg/L	<0.2	-	-
Ethylene Dibromide	µg/L	<0.19	-	-
Methyl Ethyl Ketone	µg/L	<10	-	-
Methylene Chloride	µg/L	<2	-	-
Methyl Isobutyl Ketone	µg/L	<5	-	-
Methyl-t-Butyl Ether	µg/L	<0.5	-	-
Styrene	µg/L	<0.4	-	-

Project No. 2203-E020
Table VI – Maximum Concentration (Groundwater)

Summary of VOCs

Parameter	Unit	Maximum Concentration	Sample ID	Screen Depth (m)
1,1,1,2-Tetrachloroethane	µg/L	<0.5	-	-
1,1,2,2-Tetrachloroethane	µg/L	<0.4	-	-
Toluene	µg/L	0.39	BH/MW3	3.5 - 6.5
Tetrachloroethylene	µg/L	<0.2	-	-
1,1,1-Trichloroethane	µg/L	<0.2	-	-
1,1,2-Trichloroethane	µg/L	<0.4	-	-
Trichloroethylene	µg/L	<0.2	-	-
Vinyl Chloride	µg/L	<0.2	-	-
m-Xylene & p-Xylene	µg/L	<0.2	-	-
o-Xylene	µg/L	<0.2	-	-
Total Xylenes	µg/L	<0.2	-	-
Dichlorodifluoromethane	µg/L	<1	-	-
Hexane(n)	µg/L	<1	-	-
Trichlorofluoromethane	µg/L	<0.5	-	-
1,3-Dichloropropene (cis + trans)	µg/L	<0.5	-	-

Project No. 2203-E020
Table VI – Maximum Concentration (Groundwater)

Summary of CCME F1-F4

Parameter	Unit	Maximum Concentration	Sample ID	Screen Depth (m)
Benzene	µg/L	-	-	0
Toluene	µg/L	-	-	0
Ethylbenzene	µg/L	-	-	0
m/p xylenes	µg/L	-	-	-
o xylene	µg/L	-	-	-
Total Xylenes	µg/L	-	-	0
F1 (C6-C10)	µg/L	<25	-	0
F1 (C6-C10) - BTEX	µg/L	<25	-	0
F2 (C10-C16)	µg/L	<100	-	0
F3 (C16-C34)	µg/L	<200	-	0
F4 (C34-C50)	µg/L	<200	-	0

Project No. 2203-E020
Table VI – Maximum Concentration (Groundwater)

Summary of PAHs

Parameter	Unit	Maximum Concentration	Sample ID	Screen Depth (m)
Acenaphthene	µg/L	<0.05	-	-
Acenaphthylene	µg/L	<0.05	-	-
Anthracene	µg/L	<0.05	-	-
Benzo(a)anthracene	µg/L	<0.05	-	-
Benzo(a)pyrene	µg/L	<0.009	-	-
Benzo(b/j)fluoranthene	µg/L	<0.05	-	-
Benzo(ghi)perylene	µg/L	<0.05	-	-
Benzo(k)fluoranthene	µg/L	<0.05	-	-
Chrysene	µg/L	<0.05	-	-
Dibenzo(a,h)anthracene	µg/L	<0.05	-	-
Fluoranthene	µg/L	<0.05	-	-
Fluorene	µg/L	<0.05	-	-
Indeno(1,2,3-cd)pyrene	µg/L	<0.05	-	-
1-Methylnaphthalene	µg/L	<0.05	-	-
2-Methylnaphthalene	µg/L	<0.05	-	-
Naphthalene	µg/L	<0.05	-	-
Phenanthrene	µg/L	<0.03	-	-
Pyrene	µg/L	<0.05	-	-
Methylnaphthalene, 2-(1-)	µg/L	<0.071	-	-
Total Toxic Equivalency for Dioxins & Furans	µg/L	0.00000408	BH/MW3	3.5-6.5

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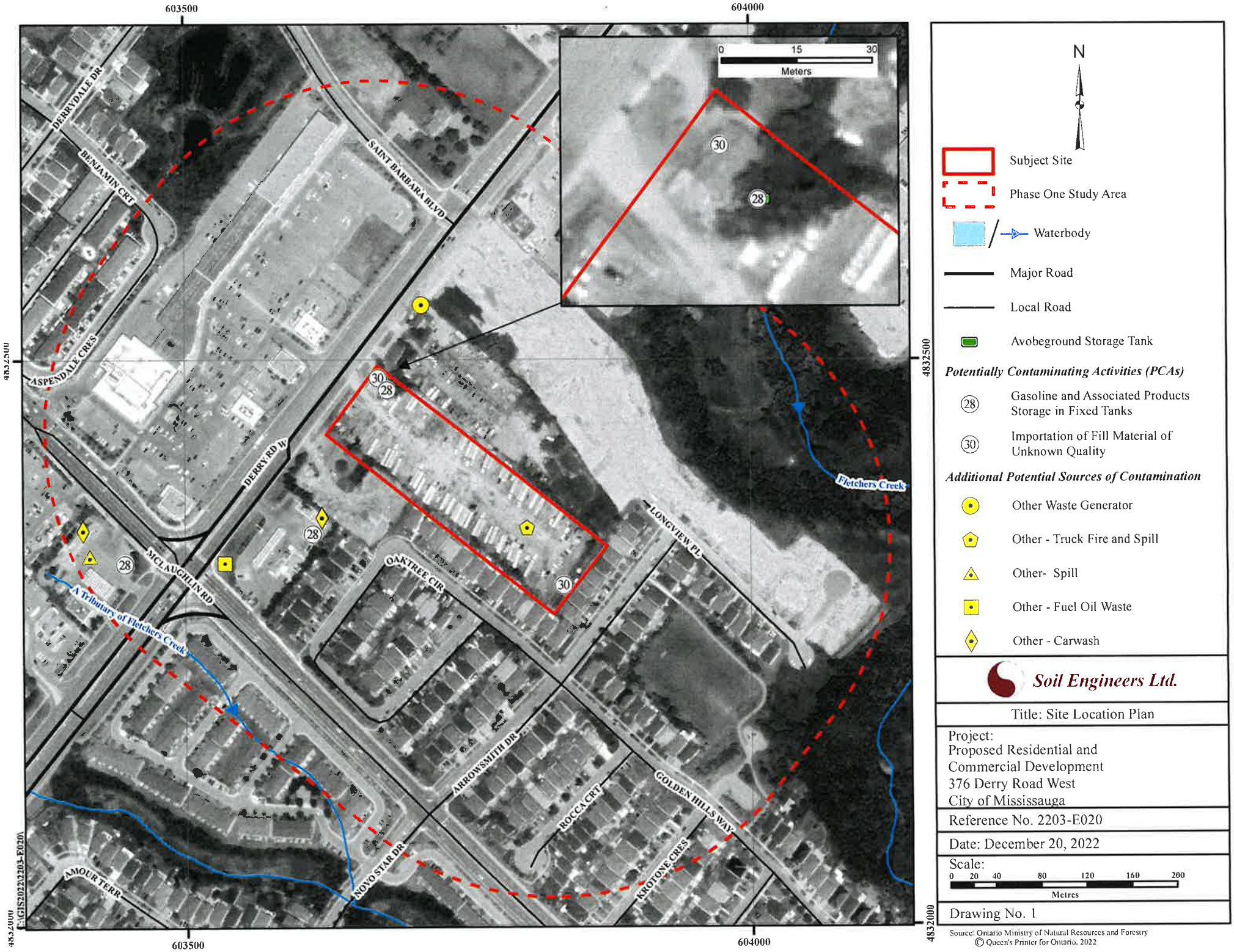
FIGURES

REFERENCE NO. 2203-E020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MCLAUGHLIN RD
A Tributary of Fletchers Creek
OAKTREE CIR
LONGVIEW PL
Fletchers Creek
ARROWSMITH DR
ROCCA CRT
GOLDEN HILLS WAY
NOVO STAR DR
AMOUR TERR
KROTONE CRES
0 15 30
Meters
N
Subject Site
Phase One Study Area
Waterbody
Major Road
Local Road
Avobeground Storage Tank
Potentially Contaminating Activities (PCAs)
28 Gasoline and Associated Products Storage in Fixed Tanks
30 Importation of Fill Material of Unknown Quality
Additional Potential Sources of Contamination
Other Waste Generator
Other - Truck Fire and Spill
Other- Spill
Other - Fuel Oil Waste
Other - Carwash
Soil Engineers Ltd.
Title: Site Location Plan
Project:
Proposed Residential and
Commercial Development
376 Derry Road West
City of Mississauga
Reference No. 2203-E020
Date: December 20, 2022
Scale:
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Metres
Drawing No. 1
Source: Ontario Ministry of Natural Resources and Forestry
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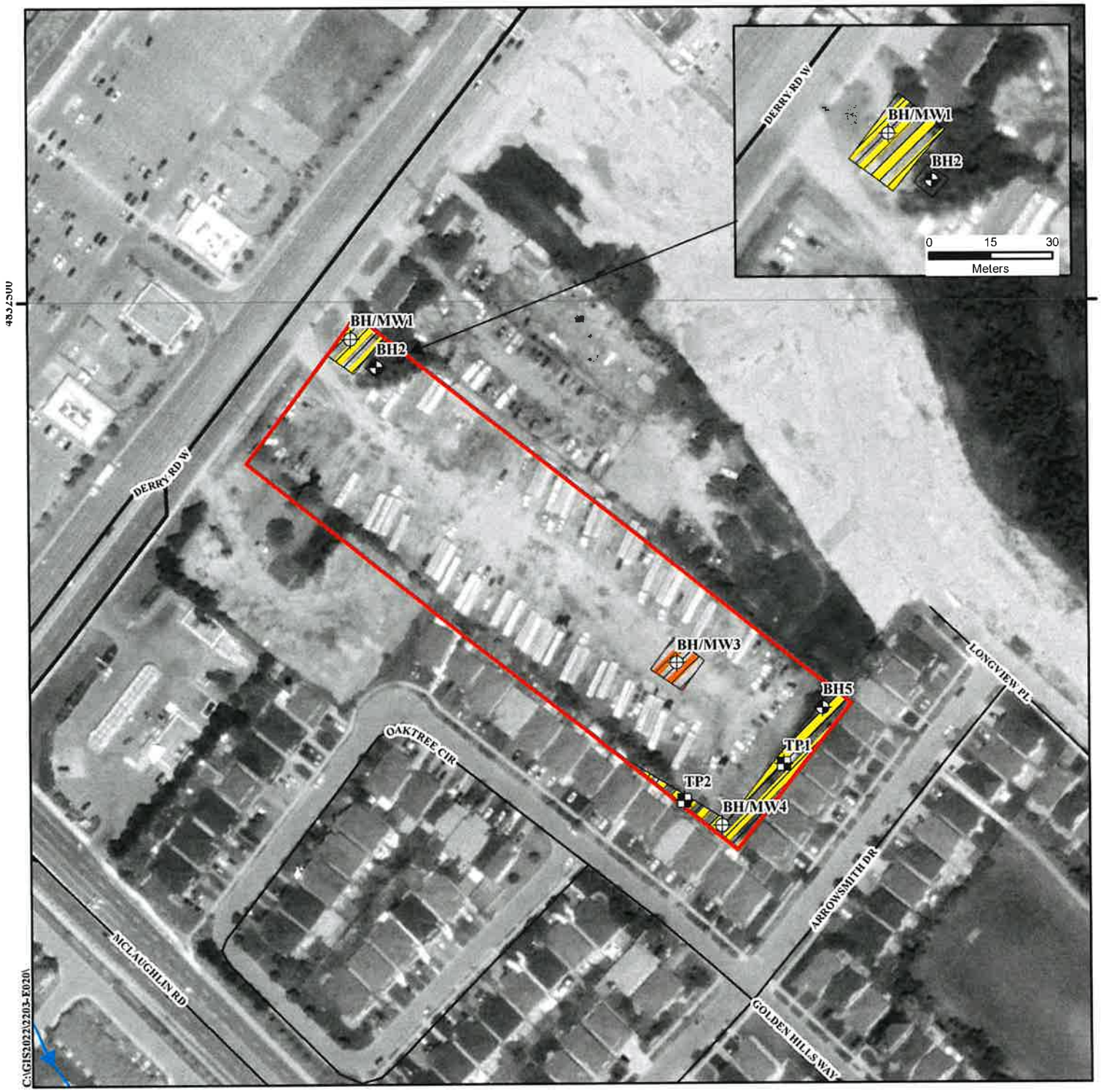

N

Subject Site

Borehole

Borehole with Monitoring Well

Test Pit

Major Road

Local Road

Areas of Potential Environmental Concern (APEC)

APEC 1

APEC 2

APEC 3 and 4

Soil Engineers Ltd.

Title: Sampling Location Plan

Project:
Proposed Residential and
Commercial Development
376 Derry Road West
City of Mississauga

Reference No. 2203-E020

Date: December 20, 2022

Scale:
0 10 20 40 60 80 100
Metres

Drawing No. 2

Source: Ontario Ministry of Natural Resources and Forestry

N

- Subject Site
- Borehole
- Borehole with Monitoring Well
- Test Pit
- Major Road
- Local Road
- Cross-Section Direction

Soil Engineers Ltd.

Title: Cross-Section Key Plan

Project:
Proposed Residential and
Commercial Development
376 Derry Road West
City of Mississauga

Reference No. 2203-E020

Date: December 20, 2022

Scale:
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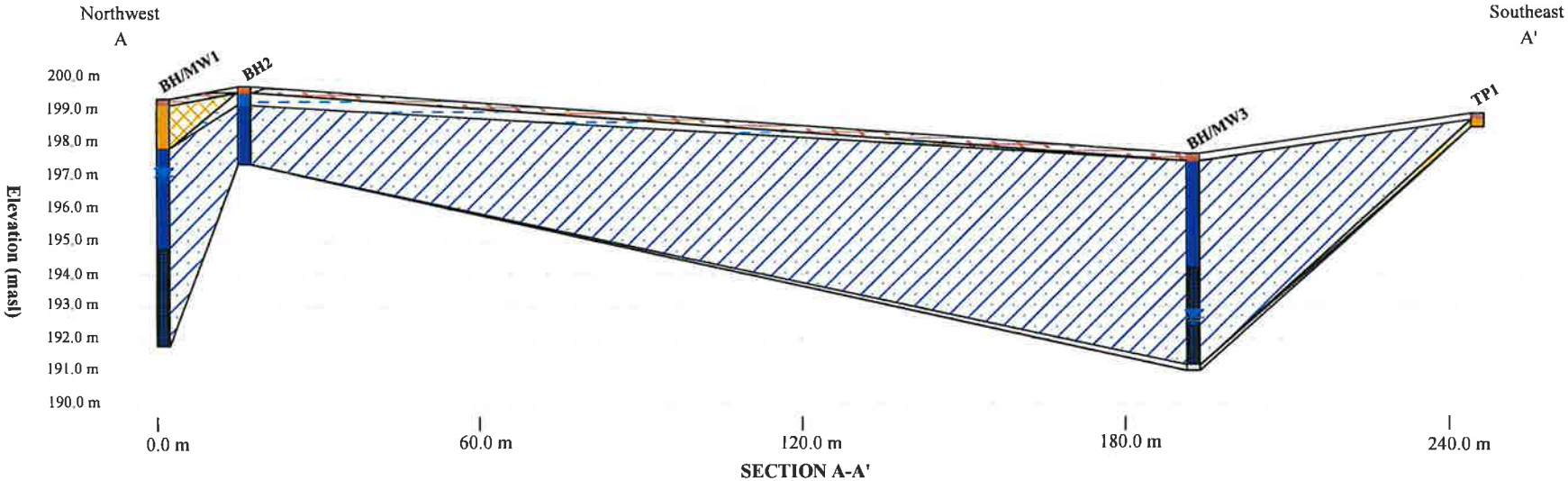
Metres

Drawing No. 3

Source: Ontario Ministry of Natural Resources and Forestry



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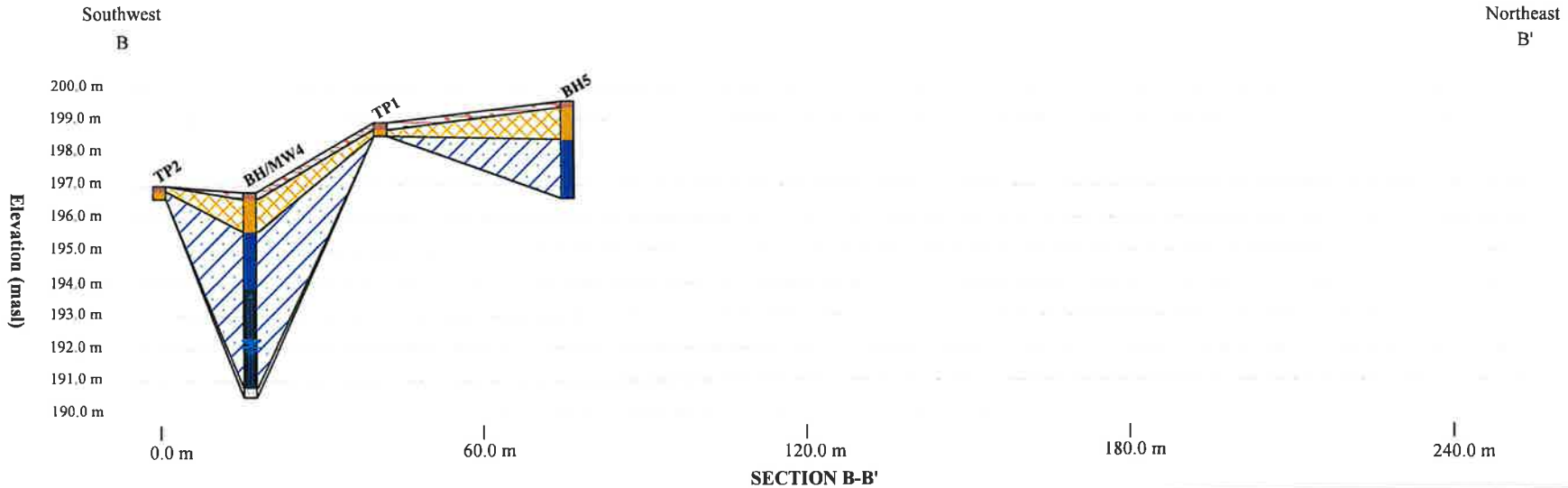

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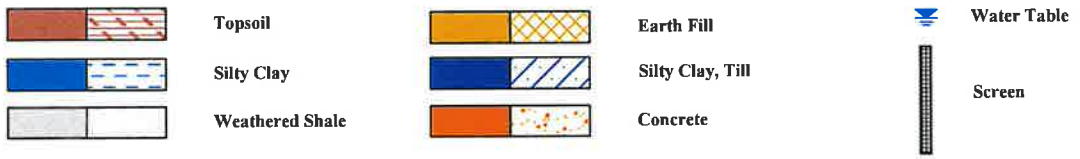

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Title:	Geological Cross-Sections A-A' and B-B'
Project:	Proposed Residential and Commercial Development 376 Derry Road West City of Mississauga

Reference No:	Date:	Scale: V	Scale: H	Drawing No.
2203-E020	December 20, 2022	1:200	1:200	4

N

Subject Site

Borehole with Monitoring Well

Interpreted Shallow Groundwater Flow Direction

Groundwater Elevation Contour

Waterbody

Major Road

Local Road

(120.00) Groundwater Elevation (masl)

Soil Engineers Ltd.

Title: Shallow Groundwater Contour Map

Project:
Proposed Residential and Commercial Development
376 Derry Road West
City of Mississauga

Reference No. 2203-E020

Date: December 20, 2022

Scale:
0 5 10 20 30 40 50
Metres

Drawing No. 5

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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 'A'

SAMPLING AND ANALYSIS PLAN

REFERENCE NO. 2203-E020

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 376 Derry Road West, in the City of Mississauga (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 impact due to one (1) fuel oil above-ground storage tank (AST) located in the basement of the residential structure at the subject site.

APEC 2: Potential soil and groundwater impact due to a truck fire and diesel fuel spill in the southern portion of the subject site.

APEC 3: Potential soil impact due to earth fill material of unknown quality located in the northern portion of the subject site.

APEC 4: Potential soil impact due to earth fill material and/or stockpiled soils of unknown quality located in the southern and south-eastern portions 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.
- Advance five (5) boreholes (designated as BH/MW1, BH2, BH/MW3, BH/MW4 and

BH5) to depths ranging from 2.4 mbgs of 7.6 mbgs and conduct two (2) hand-dug test pits (designated as TP1 and TP2) to depth of 0.4 mbgs.

- Collect representative soil samples from the boreholes and test pits.
- 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 three (3) of the boreholes (e.g., BH/MW1, 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), Dioxins and Furans, Metals, Mercury (Hg), Chromium (Cr) (VI), Cyanide (CN^-), Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR) 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 impact due to one (1) fuel oil above-ground storage tank (AST) located in the basement of the residential structure at the subject site.	BH2
APEC 2: Potential soil and groundwater impact due to a truck fire and diesel fuel spill in the southern portion of the subject site.	BH/MW3

APEC 3: Potential soil impact due to earth fill material of unknown quality located in the northern portion of the subject site.	BH/MW1
APEC 4: Potential soil impact due to earth fill material and/or stockpiled soils of unknown quality located in the southern and south-eastern portions of the subject site	BH/MW4, BH5, TP1 and TP2

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

4) SOIL AND GROUNDWATER 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	Dioxins and Furans	Metals, Hg, Cr (VI), CN^-, EC, SAR and/or pH
BH/MW1	1	1	1	-	1
BH2	1	1	-	-	1
BH/MW3	1	1	1	1	1
BH/MW 4	1	1	1	-	1
BH5	1	1	1	-	1
TP1	-	-	1	-	1
TP2	1	1	-	-	-
DUPS1	-	1	-	-	-
DUPS2	-	-	-	-	1

Groundwater Samples

Monitoring Well	PHCs/BTEX	VOCs	PAHs	Dioxins and Furans	Metals
BH/MW3	1	1	1	1	1
DUPW1	-	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, Dioxins and Furans, Metals, Hg, Cr (VI), CN^-, EC, SAR and/or 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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APPENDIX 'B'

BOREHOLE LOGS

REFERENCE NO. 2203-E020

JOB NO.: 2203-E020

LOG OF BOREHOLE NO.: 1

FIGURE NO.: 1

PROJECT DESCRIPTION: Proposed Residential and Commercial Development

METHOD OF BORING: Geoprobe

PROJECT LOCATION: 376 Derry Road West
City of Mississauga

DRILLING DATE: November 25, 2022

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES Number	Type	Combustible Headspace Reading (ppm)	Depth Scale (mbgs)	Combustible Headspace Reading (ppm)	REMARKS	WATER LEVEL
199.4	Ground Surface							
0.0	**20 cm TOPSOIL**	1A	TO	10	0		BH1/1A: PAHs	
0.2	Brown **EARTH FILL** sandy silt, some clay, rootlets trace of gravel	1B	TO	5			BH1/1B: Metals, Hg, Cr(VI), pH, Cyanide, EC, SAR BH1/2: PHCs, VOCs, DUPS1: VOCs	
197.9		2	TO	10	1			
1.5	Redish brown **SILTY CLAY, TILL** trace of gravel	3	TO	5	2			W.L. @ 2.1 mbgs on December 6, 2022
		4	TO	5	3			
		5	TO	0				
		6	TO	0	4			
		7	TO	0	5			
		8	TO	0				
		9	TO	0	6			
		10	TO	0	7			
191.8								
7.6	END OF BOREHOLE Installed 51mm standpipe @ 7.6m Concrete 0.0 to 0.3 Bentonite seal from 0.3m to 4.0m Sand backfill from 4.0m to 7.6m 3m screen from 4.6m to 7.6m Provided with monument protective casing				8			
					9			
					10			
					11			
					12			

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

Soil Engineers Ltd.

JOB NO.: 2203-E020

LOG OF BOREHOLE NO.: 2

FIGURE NO.: 2

PROJECT DESCRIPTION: Proposed Residential and Commercial Development

METHOD OF BORING: Geoprobe

PROJECT LOCATION: 376 Derry Road West
City of Mississauga

DRILLING DATE: November 25, 2022

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
199.8 / 0.0	Ground Surface							
0.0	**20 cm CONCRETE**				0			
0.2 / 199.2	Brown **SILTY CLAY** trace of gravel	1	TO	5			BH2/1: Metals	
0.6	Redish brown **SILTY CLAY, TILL** trace of clay, some sand	2	TO	10	1		BH2/2: PHCs, VOCs	
		3	TO	5				
		4	TO	0	2			
197.4 / 2.4	END OF BOREHOLE				3			
					4			
					5			
					6			
					7			
					8			

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

Soil Engineers Ltd.

JOB NO.: 2203-E020

LOG OF BOREHOLE NO.: 3

FIGURE NO.: 3

PROJECT DESCRIPTION: Proposed Residential and Commercial Development

METHOD OF BORING: Geoprobe

PROJECT LOCATION: 376 Derry Road West
City of Mississauga

DRILLING DATE: November 25, 2022

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES Number	Type	Combustible Headspace Reading (ppm)	Depth Scale (mbgs)	Combustible Headspace Reading (ppm)	REMARKS	WATER LEVEL
197.7	Ground Surface							
0.0	**20 cm TOPSOIL**	1A	TO	10	0		BH3/1A: PAHs, Dioxins and Furans	
0.2		1B	TO	5				
	Brown to grey **SILTY CLAY, TILL**	2	TO	5	1		BH3/2: Metals, Hg, Cr(VI), Cyanide, pH	
		3	TO	20	2		BH3/3: PHCs	
		4	TO	20	3		BH3/4: VOCs	
		5	TO	5				
		6	TO	0	4			
		7	TO	0	5			
		8	TO	0	6			
191.2								
191.0								
6.7	Redish-brown **WEATHERED SHALE**				7			
	END OF BOREHOLE Installed 51mm standpipe @ 6.5m Concrete from 0.0 to 0.3 Bentonite seal from 0.3m to 2.9m Sand backfill from 2.9m to 6.5m 3m screen from 3.5m to 6.5m Provided with monument protective casing				8			
					9			
					10			
					11			
					12			

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

W.L. @ 4.8 mbgs on December 6, 2022

Soil Engineers Ltd.

JOB NO.: 2203-E020

LOG OF BOREHOLE NO.: 4

FIGURE NO.: 4

PROJECT DESCRIPTION: Proposed Residential and Commercial Development

METHOD OF BORING: Geoprobe

PROJECT LOCATION: 376 Derry Road West
City of Mississauga

DRILLING DATE: November 25, 2022

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
196.8	Ground Surface							
0.0	**20 cm TOPSOIL**	1A	TO	10	0		BH4/1A: PAHs	
0.2	Brown **EARTH FILL** sandy silt, some clay, rootlets trace of gravel	1B	TO	15			BH4/1B: DUPS2: Metals, Hg, Cr(VI), Cyanide, pH, EC, SAR	
195.6		2	TO	15	1		BH4/2: PHCs, VOCs	
1.2	Brown **SILTY CLAY, TILL** trace of gravel	3	TO	5	2			
		4	TO	5	3			
		5	TO	0				
		6	TO	0	4			
		7	TO	0	5			
190.8		8	TO	0	6			
190.5								
6.3	Redish-brown **WEATHERED SHALE**				7			
	END OF BOREHOLE Installed 51mm standpipe @ 6.0m Concrete from 0.0 to 0.3 Bentonite seal from 0.3m to 2.4m Sand backfill from 2.4m to 6.0m 3m screen from 3.0m to 6.0m Provided with monument protective casing				8			
					9			
					10			
					11			
					12			

W.L. @ 4.5 mbgs on December 6, 2022

JOB NO.: 2203-E020

LOG OF BOREHOLE NO.: 5

FIGURE NO.: 5

PROJECT DESCRIPTION: Proposed Residential and Commercial Development

METHOD OF BORING: Geoprobe

PROJECT LOCATION: 376 Derry Road West
City of Mississauga

DRILLING DATE: November 25, 2022

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
199.6 / 0.0	Ground Surface **20 cm TOPSOIL**				0			
0.2	Light brown **EARTH FILL** sandy silt, some clay, rootlets trace of gravel	1	TO	10	1		BH5/1: PAHs, Metals, Hg, Cr(VI), pH, Cyanide, EC, SAR	
198.4 / 1.2	Light brown to grey **SILTY CLAY, TILL**	2	TO	15	2		BH5/2: PHCs, VOCs	
		3	TO	5	3			
196.6 / 3.0	END OF BOREHOLE	4	TO	5	4			
					5			
					6			
					7			
					8			

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

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APPENDIX 'C'

CERTIFICATES OF ANALYSIS (SOIL SAMPLES)

REFERENCE NO. 2203-E020

Your Project #: 2203-E020
Your C.O.C. #: na

Attention: Ram Sah

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

Report Date: 2023/01/11
Report #: R7461949
Version: 6 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2Y8860
Received: 2022/11/28, 15:08

Sample Matrix: Soil
Samples Received: 18

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	5	N/A	2022/12/05	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	2	N/A	2022/12/01		EPA 8260C m
1,3-Dichloropropene Sum	5	N/A	2022/12/05		EPA 8260C m
Free (WAD) Cyanide	6	2022/11/30	2022/11/30	CAM SOP-00457	OMOE E3015 m
Conductivity	6	2022/12/01	2022/12/01	CAM SOP-00414	OMOE E3530 v1 m
Dioxins/Furans in Soil (1613B) (1)	1	2022/12/23	2022/12/29	BRL SOP-00410	EPA 1613B m
Petroleum Hydro. CCME F1 & BTEX in Soil (2)	1	N/A	2022/12/03	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (3)	2	2022/12/03	2022/12/05	CAM SOP-00316	CCME CWS m
Petroleum Hydrocarbons F2-F4 in Soil (3)	4	2022/12/04	2022/12/05	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric)	1	2022/12/06	2022/12/06	CAM SOP-00316	CCME PHC-CWS m
Acid Extractable Metals by ICPMS	7	2022/12/01	2022/12/01	CAM SOP-00447	EPA 6020B m
Moisture	17	N/A	2022/11/30	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	5	2022/12/02	2022/12/03	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	7	2022/12/01	2022/12/01	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	6	N/A	2022/12/01	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCs	5	N/A	2022/12/01	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Soil	2	N/A	2022/11/30	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

Your Project #: 2203-E020
Your C.O.C. #: na

Attention: Ram Sah

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

Report Date: 2023/01/11
Report #: R7461949
Version: 6 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2Y8860
Received: 2022/11/28, 15:08

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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
(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 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
11 Jan 2023 16:47:40

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

==========

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

O.REG 153 ICPMS METALS (SOIL)

Bureau Veritas ID		UKU754			
Sampling Date		2022/11/25 10:45			
COC Number		na			
	UNITS	BH2/1	RDL	MDL	QC Batch
Metals					
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	0.10	8377506
Acid Extractable Arsenic (As)	ug/g	4.5	1.0	0.10	8377506
Acid Extractable Barium (Ba)	ug/g	54	0.50	0.30	8377506
Acid Extractable Beryllium (Be)	ug/g	0.63	0.20	0.020	8377506
Acid Extractable Boron (B)	ug/g	10	5.0	1.0	8377506
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	0.030	8377506
Acid Extractable Chromium (Cr)	ug/g	19	1.0	0.20	8377506
Acid Extractable Cobalt (Co)	ug/g	11	0.10	0.020	8377506
Acid Extractable Copper (Cu)	ug/g	29	0.50	0.20	8377506
Acid Extractable Lead (Pb)	ug/g	8.5	1.0	0.10	8377506
Acid Extractable Molybdenum (Mo)	ug/g	0.58	0.50	0.10	8377506
Acid Extractable Nickel (Ni)	ug/g	24	0.50	0.20	8377506
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	0.10	8377506
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	0.040	8377506
Acid Extractable Thallium (Tl)	ug/g	0.11	0.050	0.010	8377506
Acid Extractable Uranium (U)	ug/g	0.68	0.050	0.030	8377506
Acid Extractable Vanadium (V)	ug/g	27	5.0	0.50	8377506
Acid Extractable Zinc (Zn)	ug/g	55	5.0	0.50	8377506
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	0.030	8377506

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID		UKU752	UKU757	UKU761	UKU763	UKU765			
Sampling Date		2022/11/25 09:15	2022/11/25 13:35	2022/11/25 11:40	2022/11/25 14:35	2022/11/25 15:05			
COC Number		na	na	na	na	na			
	UNITS	BH/MW1/1B	BH/MW3/2	BH/MW4/1B	BH5/1	TP1	RDL	MDL	QC Batch
Calculated Parameters									
Sodium Adsorption Ratio	N/A	5.9	0.29	1.5	0.27 (1)	0.20 (1)			8372959
Inorganics									
Conductivity	mS/cm	0.39	0.24	0.25	0.15	0.27	0.002	0.0005	8378129
Moisture	%	13	12	13	7.8	14	1.0	0.50	8375440
Available (CaCl2) pH	pH	7.56	7.71	7.80	7.78	7.55			8377820
WAD Cyanide (Free)	ug/g	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.005	8376121
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.10	8377506
Acid Extractable Arsenic (As)	ug/g	6.0	4.5	4.9	4.2	3.6	1.0	0.10	8377506
Acid Extractable Barium (Ba)	ug/g	88	53	54	50	66	0.50	0.30	8377506
Acid Extractable Beryllium (Be)	ug/g	0.95	0.57	0.74	0.48	0.60	0.20	0.020	8377506
Acid Extractable Boron (B)	ug/g	6.9	7.5	10	7.8	8.3	5.0	1.0	8377506
Acid Extractable Cadmium (Cd)	ug/g	0.15	0.12	<0.10	0.13	0.18	0.10	0.030	8377506
Acid Extractable Chromium (Cr)	ug/g	27	17	20	16	18	1.0	0.20	8377506
Acid Extractable Cobalt (Co)	ug/g	12	11	11	9.2	8.6	0.10	0.020	8377506
Acid Extractable Copper (Cu)	ug/g	30	29	29	24	21	0.50	0.20	8377506
Acid Extractable Lead (Pb)	ug/g	14	8.2	11	12	14	1.0	0.10	8377506
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	<0.50	0.54	<0.50	0.50	0.10	8377506
Acid Extractable Nickel (Ni)	ug/g	27	21	25	19	19	0.50	0.20	8377506
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	0.10	8377506
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8377506
Acid Extractable Thallium (Tl)	ug/g	0.15	0.11	0.12	0.13	0.12	0.050	0.010	8377506
Acid Extractable Uranium (U)	ug/g	0.49	0.47	0.71	0.51	0.57	0.050	0.030	8377506
Acid Extractable Vanadium (V)	ug/g	36	24	28	24	27	5.0	0.50	8377506
Acid Extractable Zinc (Zn)	ug/g	68	50	57	54	67	5.0	0.50	8377506
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	0.030	8377506

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

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O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID		UKU768			
Sampling Date					
COC Number		na			
	UNITS	DUPS2	RDL	MDL	QC Batch
Calculated Parameters					
Sodium Adsorption Ratio	N/A	1.4			8372959
Inorganics					
Conductivity	mS/cm	0.23	0.002	0.0005	8378129
Moisture	%	13	1.0	0.50	8375440
Available (CaCl2) pH	pH	7.84			8377820
WAD Cyanide (Free)	ug/g	<0.01	0.01	0.005	8376121
Metals					
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	0.10	8377506
Acid Extractable Arsenic (As)	ug/g	4.7	1.0	0.10	8377506
Acid Extractable Barium (Ba)	ug/g	51	0.50	0.30	8377506
Acid Extractable Beryllium (Be)	ug/g	0.66	0.20	0.020	8377506
Acid Extractable Boron (B)	ug/g	9.7	5.0	1.0	8377506
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.10	0.030	8377506
Acid Extractable Chromium (Cr)	ug/g	20	1.0	0.20	8377506
Acid Extractable Cobalt (Co)	ug/g	11	0.10	0.020	8377506
Acid Extractable Copper (Cu)	ug/g	27	0.50	0.20	8377506
Acid Extractable Lead (Pb)	ug/g	8.8	1.0	0.10	8377506
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	0.10	8377506
Acid Extractable Nickel (Ni)	ug/g	24	0.50	0.20	8377506
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	0.10	8377506
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	0.040	8377506
Acid Extractable Thallium (Tl)	ug/g	0.12	0.050	0.010	8377506
Acid Extractable Uranium (U)	ug/g	0.69	0.050	0.030	8377506
Acid Extractable Vanadium (V)	ug/g	27	5.0	0.50	8377506
Acid Extractable Zinc (Zn)	ug/g	55	5.0	0.50	8377506
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	0.030	8377506

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 PAHS (SOIL)

Bureau Veritas ID		UKU751	UKU756			UKU760			
Sampling Date		2022/11/25 09:00	2022/11/25 13:20			2022/11/25 11:30			
COC Number		na	na			na			
	UNITS	BH/MW1/1A	BH/MW3/1A	RDL	MDL	BH/MW4/1A	RDL	MDL	QC Batch
Inorganics									
Moisture	%	12	10	1.0	0.50	8.4	1.0	0.50	8376566
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	0.0071	N/A	<0.071	0.071	N/A	8372674
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	<0.0050	<0.0050	0.0050	0.0020	<0.050	0.050	0.020	8380239
Acenaphthylene	ug/g	<0.0050	<0.0050	0.0050	0.0010	<0.050	0.050	0.010	8380239
Anthracene	ug/g	<0.0050	<0.0050	0.0050	0.0010	<0.050	0.050	0.010	8380239
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	0.0050	0.0020	<0.050	0.050	0.020	8380239
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	0.0050	0.0010	0.31	0.050	0.010	8380239
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	0.0020	0.28	0.050	0.020	8380239
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	0.0050	0.0040	0.73	0.050	0.040	8380239
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	0.0050	0.0020	0.058	0.050	0.020	8380239
Chrysene	ug/g	<0.0050	<0.0050	0.0050	0.0020	<0.050	0.050	0.020	8380239
Dibenzo(a,h)anthracene	ug/g	<0.0050	<0.0050	0.0050	0.0040	0.058	0.050	0.040	8380239
Fluoranthene	ug/g	<0.0050	<0.0050	0.0050	0.0010	<0.050	0.050	0.010	8380239
Fluorene	ug/g	<0.0050	<0.0050	0.0050	0.0010	<0.050	0.050	0.010	8380239
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	0.0050	0.0040	0.29	0.050	0.040	8380239
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	0.0010	<0.050	0.050	0.010	8380239
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	0.0050	0.0010	<0.050	0.050	0.010	8380239
Naphthalene	ug/g	<0.0050	<0.0050	0.0050	0.0010	<0.050	0.050	0.010	8380239
Phenanthrene	ug/g	<0.0050	<0.0050	0.0050	0.0010	<0.050	0.050	0.010	8380239
Pyrene	ug/g	<0.0050	<0.0050	0.0050	0.0010	0.24	0.050	0.010	8380239
Surrogate Recovery (%)									
D10-Anthracene	%	105	100			98			8380239
D14-Terphenyl (FS)	%	117	113			116			8380239
D8-Acenaphthylene	%	92	88			99			8380239

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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O.REG 153 PAHS (SOIL)

Bureau Veritas ID		UKU763	UKU765			
Sampling Date		2022/11/25 14:35	2022/11/25 15:05			
COC Number		na	na			
	UNITS	BH5/1	TP1	RDL	MDL	QC Batch
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/g	<0.071	<0.071	0.071	N/A	8372674
Polyaromatic Hydrocarbons						
Acenaphthene	ug/g	<0.050	<0.050	0.050	0.020	8380239
Acenaphthylene	ug/g	<0.050	<0.050	0.050	0.010	8380239
Anthracene	ug/g	<0.050	<0.050	0.050	0.010	8380239
Benzo(a)anthracene	ug/g	<0.050	<0.050	0.050	0.020	8380239
Benzo(a)pyrene	ug/g	<0.050	<0.050	0.050	0.010	8380239
Benzo(b/j)fluoranthene	ug/g	<0.050	<0.050	0.050	0.020	8380239
Benzo(g,h,i)perylene	ug/g	0.058	<0.050	0.050	0.040	8380239
Benzo(k)fluoranthene	ug/g	<0.050	<0.050	0.050	0.020	8380239
Chrysene	ug/g	<0.050	<0.050	0.050	0.020	8380239
Dibenzo(a,h)anthracene	ug/g	<0.050	<0.050	0.050	0.040	8380239
Fluoranthene	ug/g	<0.050	<0.050	0.050	0.010	8380239
Fluorene	ug/g	<0.050	<0.050	0.050	0.010	8380239
Indeno(1,2,3-cd)pyrene	ug/g	<0.050	<0.050	0.050	0.040	8380239
1-Methylnaphthalene	ug/g	<0.050	<0.050	0.050	0.010	8380239
2-Methylnaphthalene	ug/g	<0.050	<0.050	0.050	0.010	8380239
Naphthalene	ug/g	<0.050	<0.050	0.050	0.010	8380239
Phenanthrene	ug/g	<0.050	<0.050	0.050	0.010	8380239
Pyrene	ug/g	<0.050	<0.050	0.050	0.010	8380239
Surrogate Recovery (%)						
D10-Anthracene	%	105	108			8380239
D14-Terphenyl (FS)	%	116	119			8380239
D8-Acenaphthylene	%	94	95			8380239

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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

Bureau Veritas ID		UKU758			
Sampling Date		2022/11/25 13:45			
COC Number		na			
	UNITS	BH/MW3/3	RDL	MDL	QC Batch
Inorganics					
Moisture	%	11	1.0	0.50	8376566
BTEX & F1 Hydrocarbons					
Benzene	ug/g	<0.020	0.020	0.020	8381389
Toluene	ug/g	<0.020	0.020	0.020	8381389
Ethylbenzene	ug/g	<0.020	0.020	0.020	8381389
o-Xylene	ug/g	<0.020	0.020	0.020	8381389
p+m-Xylene	ug/g	<0.040	0.040	0.040	8381389
Total Xylenes	ug/g	<0.040	0.040	0.040	8381389
F1 (C6-C10)	ug/g	<10	10	5.0	8381389
F1 (C6-C10) - BTEX	ug/g	<10	10	5.0	8381389
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	5.0	8383684
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	5.0	8383684
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	10	8383684
Reached Baseline at C50	ug/g	Yes			8383684
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	104			8381389
4-Bromofluorobenzene	%	98			8381389
D10-o-Xylene	%	115			8381389
D4-1,2-Dichloroethane	%	101			8381389
o-Terphenyl	%	105			8383684

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		UKU753	UKU755		UKU762			
Sampling Date		2022/11/25 09:35	2022/11/25 10:55		2022/11/25 11:50			
COC Number		na	na		na			
	UNITS	BH/MW1/2	BH2/2	QC Batch	BH/MW4/2	RDL	MDL	QC Batch
Inorganics								
Moisture	%	10	11	8376566	11	1.0	0.50	8376566
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	8372950	<0.050	0.050	0.010	8372950
Volatile Organics								
Acetone (2-Propanone)	ug/g	<0.49	<0.49	8374571	<0.49	0.49	0.49	8374571
Benzene	ug/g	<0.0060	<0.0060	8374571	<0.0060	0.0060	0.0060	8374571
Bromodichloromethane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Bromoform	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Bromomethane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Carbon Tetrachloride	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Chlorobenzene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Chloroform	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Dibromochloromethane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
1,2-Dichlorobenzene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
1,3-Dichlorobenzene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
1,4-Dichlorobenzene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
1,1-Dichloroethane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
1,2-Dichloroethane	ug/g	<0.049	<0.049	8374571	<0.049	0.049	0.049	8374571
1,1-Dichloroethylene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
cis-1,2-Dichloroethylene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
trans-1,2-Dichloroethylene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
1,2-Dichloropropane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	8374571	<0.030	0.030	0.030	8374571
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Ethylbenzene	ug/g	<0.010	<0.010	8374571	<0.010	0.010	0.010	8374571
Ethylene Dibromide	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Hexane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Methylene Chloride(Dichloromethane)	ug/g	<0.049	<0.049	8374571	<0.049	0.049	0.049	8374571
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	<0.40	8374571	<0.40	0.40	0.40	8374571
Methyl Isobutyl Ketone	ug/g	<0.40	<0.40	8374571	<0.40	0.40	0.40	8374571
Methyl t-butyl ether (MTBE)	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Styrene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
1,1,1,2-Tetrachloroethane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
1,1,2,2-Tetrachloroethane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571

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		UKU753	UKU755		UKU762			
Sampling Date		2022/11/25 09:35	2022/11/25 10:55		2022/11/25 11:50			
COC Number		na	na		na			
	UNITS	BH/MW1/2	BH2/2	QC Batch	BH/MW4/2	RDL	MDL	QC Batch
Tetrachloroethylene	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Toluene	ug/g	<0.020	<0.020	8374571	<0.020	0.020	0.020	8374571
1,1,1-Trichloroethane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
1,1,2-Trichloroethane	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Trichloroethylene	ug/g	<0.010	<0.010	8374571	<0.010	0.010	0.010	8374571
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	<0.040	8374571	<0.040	0.040	0.040	8374571
Vinyl Chloride	ug/g	<0.019	<0.019	8374571	<0.019	0.019	0.019	8374571
p+m-Xylene	ug/g	<0.020	<0.020	8374571	<0.020	0.020	0.020	8374571
o-Xylene	ug/g	<0.020	<0.020	8374571	<0.020	0.020	0.020	8374571
Total Xylenes	ug/g	<0.020	<0.020	8374571	<0.020	0.020	0.020	8374571
F1 (C6-C10)	ug/g	<10	<10	8374571	<10	10	2.0	8374571
F1 (C6-C10) - BTEX	ug/g	<10	<10	8374571	<10	10	2.0	8374571
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	8383684	<10	10	5.0	8383006
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	8383684	<50	50	5.0	8383006
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	8383684	<50	50	10	8383006
Reached Baseline at C50	ug/g	Yes	Yes	8383684	Yes			8383006
Surrogate Recovery (%)								
o-Terphenyl	%	109	105	8383684	88			8383006
4-Bromofluorobenzene	%	90	91	8374571	89			8374571
D10-o-Xylene	%	91	111	8374571	82			8374571
D4-1,2-Dichloroethane	%	94	95	8374571	96			8374571
D8-Toluene	%	98	96	8374571	97			8374571

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		UKU764		UKU766			
Sampling Date		2022/11/25 14:45		2022/11/25 15:15			
COC Number		na		na			
	UNITS	BH5/2	QC Batch	TP2	RDL	MDL	QC Batch
Inorganics							
Moisture	%	4.0	8376566	15	1.0	0.50	8376566
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	8372950	<0.050	0.050	0.010	8372950
Volatile Organics							
Acetone (2-Propanone)	ug/g	<0.49	8374571	<0.49	0.49	0.49	8374571
Benzene	ug/g	<0.0060	8374571	<0.0060	0.0060	0.0060	8374571
Bromodichloromethane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Bromoform	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Bromomethane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Carbon Tetrachloride	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Chlorobenzene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Chloroform	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Dibromochloromethane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
1,2-Dichlorobenzene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
1,3-Dichlorobenzene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
1,4-Dichlorobenzene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
1,1-Dichloroethane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
1,2-Dichloroethane	ug/g	<0.049	8374571	<0.049	0.049	0.049	8374571
1,1-Dichloroethylene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
cis-1,2-Dichloroethylene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
trans-1,2-Dichloroethylene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
1,2-Dichloropropane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
cis-1,3-Dichloropropene	ug/g	<0.030	8374571	<0.030	0.030	0.030	8374571
trans-1,3-Dichloropropene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Ethylbenzene	ug/g	<0.010	8374571	<0.010	0.010	0.010	8374571
Ethylene Dibromide	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Hexane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Methylene Chloride(Dichloromethane)	ug/g	<0.049	8374571	<0.049	0.049	0.049	8374571
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	8374571	<0.40	0.40	0.40	8374571
Methyl Isobutyl Ketone	ug/g	<0.40	8374571	<0.40	0.40	0.40	8374571
Methyl t-butyl ether (MTBE)	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Styrene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
1,1,1,2-Tetrachloroethane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
1,1,2,2-Tetrachloroethane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571

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		UKU764		UKU766			
Sampling Date		2022/11/25 14:45		2022/11/25 15:15			
COC Number		na		na			
	UNITS	BH5/2	QC Batch	TP2	RDL	MDL	QC Batch
Tetrachloroethylene	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Toluene	ug/g	<0.020	8374571	<0.020	0.020	0.020	8374571
1,1,1-Trichloroethane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
1,1,2-Trichloroethane	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Trichloroethylene	ug/g	<0.010	8374571	<0.010	0.010	0.010	8374571
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	8374571	<0.040	0.040	0.040	8374571
Vinyl Chloride	ug/g	<0.019	8374571	<0.019	0.019	0.019	8374571
p+m-Xylene	ug/g	<0.020	8374571	<0.020	0.020	0.020	8374571
o-Xylene	ug/g	0.025	8374571	<0.020	0.020	0.020	8374571
Total Xylenes	ug/g	0.025	8374571	<0.020	0.020	0.020	8374571
F1 (C6-C10)	ug/g	<10	8374571	<10	10	2.0	8374571
F1 (C6-C10) - BTEX	ug/g	<10	8374571	<10	10	2.0	8374571
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	8383684	<10	10	5.0	8383006
F3 (C16-C34 Hydrocarbons)	ug/g	210	8383684	81	50	5.0	8383006
F4 (C34-C50 Hydrocarbons)	ug/g	490	8383684	100	50	10	8383006
Reached Baseline at C50	ug/g	No	8383684	Yes			8383006
Surrogate Recovery (%)							
o-Terphenyl	%	104	8383684	87			8383006
4-Bromofluorobenzene	%	90	8374571	90			8374571
D10-o-Xylene	%	87	8374571	90			8374571
D4-1,2-Dichloroethane	%	95	8374571	99			8374571
D8-Toluene	%	97	8374571	96			8374571

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS (SOIL)

Bureau Veritas ID		UKU759	UKU767			
Sampling Date		2022/11/25 13:55				
COC Number		na	na			
	UNITS	BH/MW3/4	DUPS1	RDL	MDL	QC Batch
Inorganics						
Moisture	%	11	9.5	1.0	0.50	8375440
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	0.050	0.010	8372950
Volatile Organics						
Acetone (2-Propanone)	ug/g	<0.49	<0.49	0.49	0.49	8374650
Benzene	ug/g	<0.0060	<0.0060	0.0060	0.0060	8374650
Bromodichloromethane	ug/g	<0.040	<0.040	0.040	0.040	8374650
Bromoform	ug/g	<0.040	<0.040	0.040	0.040	8374650
Bromomethane	ug/g	<0.040	<0.040	0.040	0.040	8374650
Carbon Tetrachloride	ug/g	<0.040	<0.040	0.040	0.040	8374650
Chlorobenzene	ug/g	<0.040	<0.040	0.040	0.040	8374650
Chloroform	ug/g	<0.040	<0.040	0.040	0.040	8374650
Dibromochloromethane	ug/g	<0.040	<0.040	0.040	0.040	8374650
1,2-Dichlorobenzene	ug/g	<0.040	<0.040	0.040	0.040	8374650
1,3-Dichlorobenzene	ug/g	<0.040	<0.040	0.040	0.040	8374650
1,4-Dichlorobenzene	ug/g	<0.040	<0.040	0.040	0.040	8374650
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	<0.040	0.040	0.050	8374650
1,1-Dichloroethane	ug/g	<0.040	<0.040	0.040	0.040	8374650
1,2-Dichloroethane	ug/g	<0.049	<0.049	0.049	0.040	8374650
1,1-Dichloroethylene	ug/g	<0.040	<0.040	0.040	0.040	8374650
cis-1,2-Dichloroethylene	ug/g	<0.040	<0.040	0.040	0.040	8374650
trans-1,2-Dichloroethylene	ug/g	<0.040	<0.040	0.040	0.040	8374650
1,2-Dichloropropane	ug/g	<0.040	<0.040	0.040	0.040	8374650
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	0.030	0.030	8374650
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	0.040	0.040	8374650
Ethylbenzene	ug/g	<0.010	<0.010	0.010	0.010	8374650
Ethylene Dibromide	ug/g	<0.040	<0.040	0.040	0.040	8374650
Hexane	ug/g	<0.040	<0.040	0.040	0.040	8374650
Methylene Chloride(Dichloromethane)	ug/g	<0.049	<0.049	0.049	0.049	8374650
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	<0.40	0.40	0.40	8374650
Methyl Isobutyl Ketone	ug/g	<0.40	<0.40	0.40	0.40	8374650
Methyl t-butyl ether (MTBE)	ug/g	<0.040	<0.040	0.040	0.040	8374650
Styrene	ug/g	<0.040	<0.040	0.040	0.040	8374650
1,1,1,2-Tetrachloroethane	ug/g	<0.040	<0.040	0.040	0.040	8374650
1,1,2,2-Tetrachloroethane	ug/g	<0.040	<0.040	0.040	0.040	8374650

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS (SOIL)

Bureau Veritas ID		UKU759	UKU767			
Sampling Date		2022/11/25 13:55				
COC Number		na	na			
	UNITS	BH/MW3/4	DUPS1	RDL	MDL	QC Batch
Tetrachloroethylene	ug/g	<0.040	<0.040	0.040	0.040	8374650
Toluene	ug/g	<0.020	<0.020	0.020	0.020	8374650
1,1,1-Trichloroethane	ug/g	<0.040	<0.040	0.040	0.040	8374650
1,1,2-Trichloroethane	ug/g	<0.040	<0.040	0.040	0.040	8374650
Trichloroethylene	ug/g	<0.010	<0.010	0.010	0.010	8374650
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	<0.040	0.040	0.040	8374650
Vinyl Chloride	ug/g	<0.019	<0.019	0.019	0.019	8374650
p+m-Xylene	ug/g	<0.020	<0.020	0.020	0.020	8374650
o-Xylene	ug/g	<0.020	<0.020	0.020	0.020	8374650
Total Xylenes	ug/g	<0.020	<0.020	0.020	0.020	8374650
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	92	93			8374650
D10-o-Xylene	%	95	102			8374650
D4-1,2-Dichloroethane	%	105	107			8374650
D8-Toluene	%	102	102			8374650

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		UKU759		
Sampling Date		2022/11/25 13:55		
COC Number		na		
	UNITS	BH/MW3/4	MDL	QC Batch
Inorganics				
Available (CaCl2) pH	pH	7.76		8377816
QC Batch = Quality Control Batch				

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PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		UKU764			
Sampling Date		2022/11/25 14:45			
COC Number		na			
	UNITS	BH5/2	RDL	MDL	QC Batch
F2-F4 Hydrocarbons					
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	1400	100	100	8386161

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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DIOXINS AND FURANS BY HRMS (SOIL)

Bureau Veritas ID		UKU756							
Sampling Date		2022/11/25 13:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	BH/MW3/1A	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Dioxins & Furans									
2,3,7,8-Tetra CDD *	pg/g	<0.138	0.138	1.00	0.227	1.00	0.138	0	8425975
1,2,3,7,8-Penta CDD *	pg/g	<0.121	0.121	5.00	0.258	1.00	0.121	0	8425975
1,2,3,4,7,8-Hexa CDD *	pg/g	<0.153	0.153	5.00	0.204	0.100	0.0153	0	8425975
1,2,3,6,7,8-Hexa CDD *	pg/g	<0.146	0.146	5.00	0.173	0.100	0.0146	0	8425975
1,2,3,7,8,9-Hexa CDD *	pg/g	<0.145	0.145	5.00	0.179	0.100	0.0145	0	8425975
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1.57	0.148	5.00	0.743	0.0100	0.0157	1	8425975
Octa CDD *	pg/g	10.6	0.151	10.0	0.800	0.000300	0.00318	1	8425975
Total Tetra CDD *	pg/g	<0.138	0.138	1.00	0.400			0	8425975
Total Penta CDD *	pg/g	<0.121	0.121	5.00	0.400			0	8425975
Total Hexa CDD *	pg/g	0.430	0.148	5.00	0.400			1	8425975
Total Hepta CDD *	pg/g	3.27	0.148	5.00	0.400			2	8425975
2,3,7,8-Tetra CDF **	pg/g	<0.131	0.131	1.00	0.181	0.100	0.0131	0	8425975
1,2,3,7,8-Penta CDF **	pg/g	<0.151	0.151	5.00	0.242	0.0300	0.00453	0	8425975
2,3,4,7,8-Penta CDF **	pg/g	<0.131	0.131	5.00	0.211	0.300	0.0393	0	8425975
1,2,3,4,7,8-Hexa CDF **	pg/g	<0.123	0.123	5.00	0.228	0.100	0.0123	0	8425975
1,2,3,6,7,8-Hexa CDF **	pg/g	<0.122	0.122	5.00	0.203	0.100	0.0122	0	8425975
2,3,4,6,7,8-Hexa CDF **	pg/g	<0.114	0.114	5.00	0.177	0.100	0.0114	0	8425975
1,2,3,7,8,9-Hexa CDF **	pg/g	<0.153	0.153	5.00	0.185	0.100	0.0153	0	8425975
1,2,3,4,6,7,8-Hepta CDF **	pg/g	0.292	0.133	5.00	0.185	0.0100	0.00292	1	8425975
1,2,3,4,7,8,9-Hepta CDF **	pg/g	<0.170	0.170	5.00	0.194	0.0100	0.00170	0	8425975
Octa CDF **	pg/g	0.631	0.145	10.0	0.919	0.000300	0.000189	1	8425975
Total Tetra CDF **	pg/g	<0.131	0.131	1.00	0.400			0	8425975
Total Penta CDF **	pg/g	0.342	0.141	5.00	0.400			1	8425975
Total Hexa CDF **	pg/g	0.232	0.127	5.00	0.400			1	8425975
Total Hepta CDF **	pg/g	0.641	0.149	5.00	0.400			2	8425975
TOTAL TOXIC EQUIVALENCY	pg/g						0.435		

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

Bureau Veritas ID		UKU756							
Sampling Date		2022/11/25 13:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	BH/MW3/1A	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	68							8425975
C13-1234678 HeptaCDD *	%	71							8425975
C13-1234678 HeptaCDF **	%	67							8425975
C13-123478 HexaCDD *	%	73							8425975
C13-123478 HexaCDF **	%	75							8425975
C13-1234789 HeptaCDF **	%	68							8425975
C13-123678 HexaCDD *	%	76							8425975
C13-123678 HexaCDF **	%	74							8425975
C13-12378 PentaCDD *	%	62							8425975
C13-12378 PentaCDF **	%	62							8425975
C13-123789 HexaCDF **	%	74							8425975
C13-234678 HexaCDF **	%	81							8425975
C13-23478 PentaCDF **	%	66							8425975
C13-2378 TetraCDD *	%	66							8425975
C13-2378 TetraCDF **	%	78							8425975
C13-OCDD *	%	56							8425975

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

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TEST SUMMARY

Bureau Veritas ID: UKU751
Sample ID: BH/MW1/1A
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8372674	N/A	2022/12/05	Automated Statchk
Moisture	BAL	8376566	N/A	2022/11/30	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8380239	2022/12/02	2022/12/03	Jonghan Yoon

Bureau Veritas ID: UKU752
Sample ID: BH/MW1/1B
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	8376121	2022/11/30	2022/11/30	Chloe Pollock
Conductivity	AT	8378129	2022/12/01	2022/12/01	Gurparteek KAUR
Acid Extractable Metals by ICPMS	ICP/MS	8377506	2022/12/01	2022/12/01	Azita Fazaeli
Moisture	BAL	8375440	N/A	2022/11/30	Shivani Desai
pH CaCl2 EXTRACT	AT	8377820	2022/12/01	2022/12/01	Taslima Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8372959	N/A	2022/12/01	Automated Statchk

Bureau Veritas ID: UKU753
Sample ID: BH/MW1/2
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8372950	N/A	2022/12/05	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8383684	2022/12/04	2022/12/05	Anna Stuglik-Rolland
Moisture	BAL	8376566	N/A	2022/11/30	Shivani Desai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8374571	N/A	2022/12/01	Jett Wu

Bureau Veritas ID: UKU754
Sample ID: BH2/1
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Acid Extractable Metals by ICPMS	ICP/MS	8377506	2022/12/01	2022/12/01	Azita Fazaeli

Bureau Veritas ID: UKU755
Sample ID: BH2/2
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8372950	N/A	2022/12/05	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8383684	2022/12/04	2022/12/05	Anna Stuglik-Rolland
Moisture	BAL	8376566	N/A	2022/11/30	Shivani Desai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8374571	N/A	2022/12/01	Jett Wu

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TEST SUMMARY

Bureau Veritas ID: UKU756
Sample ID: BH/MW3/1A
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8372674	N/A	2022/12/05	Automated Statchk
Dioxins/Furans in Soil (1613B)	HRMS/MS	8425975	2022/12/23	2022/12/29	Yan Qin
Moisture	BAL	8376566	N/A	2022/11/30	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8380239	2022/12/02	2022/12/03	Jonghan Yoon

Bureau Veritas ID: UKU757
Sample ID: BH/MW3/2
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	8376121	2022/11/30	2022/11/30	Chloe Pollock
Conductivity	AT	8378129	2022/12/01	2022/12/01	Gurparteek KAUR
Acid Extractable Metals by ICPMS	ICP/MS	8377506	2022/12/01	2022/12/01	Azita Fazaeli
Moisture	BAL	8375440	N/A	2022/11/30	Shivani Desai
pH CaCl2 EXTRACT	AT	8377820	2022/12/01	2022/12/01	Taslima Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8372959	N/A	2022/12/01	Automated Statchk

Bureau Veritas ID: UKU758
Sample ID: BH/MW3/3
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	8381389	N/A	2022/12/03	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8383684	2022/12/04	2022/12/05	Anna Stuglik-Rolland
Moisture	BAL	8376566	N/A	2022/11/30	Shivani Desai

Bureau Veritas ID: UKU759
Sample ID: BH/MW3/4
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8372950	N/A	2022/12/01	Automated Statchk
Moisture	BAL	8375440	N/A	2022/11/30	Shivani Desai
pH CaCl2 EXTRACT	AT	8377816	2022/12/01	2022/12/01	Taslima Aktar
Volatile Organic Compounds in Soil	GC/MS	8374650	N/A	2022/11/30	Narayan Ghimire

Bureau Veritas ID: UKU760
Sample ID: BH/MW4/1A
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8372674	N/A	2022/12/05	Automated Statchk
Moisture	BAL	8376566	N/A	2022/11/30	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8380239	2022/12/02	2022/12/03	Jonghan Yoon

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Bureau Veritas Job #: C2Y8860
Report Date: 2023/01/11

Soil Engineers Ltd
Client Project #: 2203-E020
Sampler Initials: ASH

TEST SUMMARY

Bureau Veritas ID: UKU761
Sample ID: BH/MW4/1B
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	8376121	2022/11/30	2022/11/30	Chloe Pollock
Conductivity	AT	8378129	2022/12/01	2022/12/01	Gurparteek KAUR
Acid Extractable Metals by ICPMS	ICP/MS	8377506	2022/12/01	2022/12/01	Azita Fazaeli
Moisture	BAL	8375440	N/A	2022/11/30	Shivani Desai
pH CaCl2 EXTRACT	AT	8377820	2022/12/01	2022/12/01	Taslima Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8372959	N/A	2022/12/01	Automated Statchk

Bureau Veritas ID: UKU762
Sample ID: BH/MW4/2
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8372950	N/A	2022/12/05	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8383006	2022/12/03	2022/12/05	Anna Stuglik-Rolland
Moisture	BAL	8376566	N/A	2022/11/30	Shivani Desai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8374571	N/A	2022/12/01	Jett Wu

Bureau Veritas ID: UKU763
Sample ID: BH5/1
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8372674	N/A	2022/12/05	Automated Statchk
Free (WAD) Cyanide	TECH	8376121	2022/11/30	2022/11/30	Chloe Pollock
Conductivity	AT	8378129	2022/12/01	2022/12/01	Gurparteek KAUR
Acid Extractable Metals by ICPMS	ICP/MS	8377506	2022/12/01	2022/12/01	Azita Fazaeli
Moisture	BAL	8375440	N/A	2022/11/30	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8380239	2022/12/02	2022/12/03	Jonghan Yoon
pH CaCl2 EXTRACT	AT	8377820	2022/12/01	2022/12/01	Taslima Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8372959	N/A	2022/12/01	Automated Statchk

Bureau Veritas ID: UKU764
Sample ID: BH5/2
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8372950	N/A	2022/12/05	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8383684	2022/12/04	2022/12/05	Anna Stuglik-Rolland
F4G (CCME Hydrocarbons Gravimetric)	BAL	8386161	2022/12/06	2022/12/06	Alketa Vrapi
Moisture	BAL	8376566	N/A	2022/11/30	Shivani Desai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8374571	N/A	2022/12/01	Jett Wu

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Bureau Veritas Job #: C2Y8860
Report Date: 2023/01/11

Soil Engineers Ltd
Client Project #: 2203-E020
Sampler Initials: ASH

TEST SUMMARY

Bureau Veritas ID: UKU765
Sample ID: TP1
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8372674	N/A	2022/12/05	Automated Statchk
Free (WAD) Cyanide	TECH	8376121	2022/11/30	2022/11/30	Chloe Pollock
Conductivity	AT	8378129	2022/12/01	2022/12/01	Gurparteek KAUR
Acid Extractable Metals by ICPMS	ICP/MS	8377506	2022/12/01	2022/12/01	Azita Fazaeli
Moisture	BAL	8375440	N/A	2022/11/30	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8380239	2022/12/02	2022/12/03	Jonghan Yoon
pH CaCl2 EXTRACT	AT	8377820	2022/12/01	2022/12/01	Taslima Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8372959	N/A	2022/12/01	Automated Statchk

Bureau Veritas ID: UKU766
Sample ID: TP2
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8372950	N/A	2022/12/05	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8383006	2022/12/03	2022/12/05	Anna Stuglik-Rolland
Moisture	BAL	8376566	N/A	2022/11/30	Shivani Desai
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8374571	N/A	2022/12/01	Jett Wu

Bureau Veritas ID: UKU767
Sample ID: DUPS1
Matrix: Soil

Collected:
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8372950	N/A	2022/12/01	Automated Statchk
Moisture	BAL	8375440	N/A	2022/11/30	Shivani Desai
Volatile Organic Compounds in Soil	GC/MS	8374650	N/A	2022/11/30	Narayan Ghimire

Bureau Veritas ID: UKU768
Sample ID: DUPS2
Matrix: Soil

Collected:
Shipped:
Received: 2022/11/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH	8376121	2022/11/30	2022/11/30	Chloe Pollock
Conductivity	AT	8378129	2022/12/01	2022/12/01	Gurparteek KAUR
Acid Extractable Metals by ICPMS	ICP/MS	8377506	2022/12/01	2022/12/01	Azita Fazaeli
Moisture	BAL	8375440	N/A	2022/11/30	Shivani Desai
pH CaCl2 EXTRACT	AT	8377820	2022/12/01	2022/12/01	Taslima Aktar
Sodium Adsorption Ratio (SAR)	CALC/MET	8372959	N/A	2022/12/01	Automated Statchk

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GENERAL COMMENTS

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

Package 1	0.7°C

Cooler Custody Seal Present and Intact.

Sample UKU760 [BH/MW4/1A] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample UKU763 [BH5/1] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample UKU765 [TP1] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Results relate only to the items tested.

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Bureau Veritas Job #: C2Y8860
Report Date: 2023/01/11

QUALITY ASSURANCE REPORT

Soil Engineers Ltd
Client Project #: 2203-E020
Sampler Initials: ASH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8374571	4-Bromofluorobenzene	2022/11/30	100	60 - 140	101	60 - 140	86	%		
8374571	D10-o-Xylene	2022/11/30	92	60 - 130	93	60 - 130	76	%		
8374571	D4-1,2-Dichloroethane	2022/11/30	97	60 - 140	97	60 - 140	103	%		
8374571	D8-Toluene	2022/11/30	104	60 - 140	106	60 - 140	94	%		
8374650	4-Bromofluorobenzene	2022/11/30	93	60 - 140	93	60 - 140	93	%		
8374650	D10-o-Xylene	2022/11/30	101	60 - 130	100	60 - 130	100	%		
8374650	D4-1,2-Dichloroethane	2022/11/30	109	60 - 140	110	60 - 140	111	%		
8374650	D8-Toluene	2022/11/30	103	60 - 140	103	60 - 140	102	%		
8380239	D10-Anthracene	2022/12/03	93	50 - 130	102	50 - 130	103	%		
8380239	D14-Terphenyl (FS)	2022/12/03	107	50 - 130	115	50 - 130	113	%		
8380239	D8-Acenaphthylene	2022/12/03	80	50 - 130	94	50 - 130	90	%		
8381389	1,4-Difluorobenzene	2022/12/03	101	60 - 140	104	60 - 140	102	%		
8381389	4-Bromofluorobenzene	2022/12/03	97	60 - 140	99	60 - 140	96	%		
8381389	D10-o-Xylene	2022/12/03	101	60 - 140	102	60 - 140	110	%		
8381389	D4-1,2-Dichloroethane	2022/12/03	95	60 - 140	97	60 - 140	98	%		
8383006	o-Terphenyl	2022/12/05	88	60 - 130	92	60 - 130	89	%		
8383684	o-Terphenyl	2022/12/05	102	60 - 130	99	60 - 130	105	%		
8425975	37CL4 2378 Tetra CDD	2022/12/29	95	35 - 197	105	35 - 197	87	%		
8425975	C13-1234678 HeptaCDD	2022/12/29	84	23 - 140	93	23 - 140	73	%		
8425975	C13-1234678 HeptaCDF	2022/12/29	82	28 - 143	88	28 - 143	68	%		
8425975	C13-123478 HexaCDD	2022/12/29	93	32 - 141	103	32 - 141	82	%		
8425975	C13-123478 HexaCDF	2022/12/29	97	26 - 152	104	26 - 152	85	%		
8425975	C13-1234789 HeptaCDF	2022/12/29	82	26 - 138	87	26 - 138	69	%		
8425975	C13-123678 HexaCDD	2022/12/29	95	28 - 130	99	28 - 130	88	%		
8425975	C13-123678 HexaCDF	2022/12/29	96	26 - 123	101	26 - 123	81	%		
8425975	C13-12378 PentaCDD	2022/12/29	85	25 - 181	95	25 - 181	80	%		
8425975	C13-12378 PentaCDF	2022/12/29	91	24 - 185	98	24 - 185	84	%		
8425975	C13-123789 HexaCDF	2022/12/29	70	29 - 147	73	29 - 147	62	%		
8425975	C13-234678 HexaCDF	2022/12/29	103	28 - 136	108	28 - 136	87	%		
8425975	C13-23478 PentaCDF	2022/12/29	92	21 - 178	98	21 - 178	85	%		
8425975	C13-2378 TetraCDD	2022/12/29	88	25 - 164	97	25 - 164	80	%		

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

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
8425975	C13-2378 TetraCDF	2022/12/29	98	24 - 169	111	24 - 169	88	%		
8425975	C13-OCDD	2022/12/29	57	17 - 157	70	17 - 157	54	%		
8374571	1,1,1,2-Tetrachloroethane	2022/11/30	98	60 - 140	102	60 - 130	<0.040	ug/g		
8374571	1,1,1-Trichloroethane	2022/11/30	92	60 - 140	98	60 - 130	<0.040	ug/g		
8374571	1,1,2,2-Tetrachloroethane	2022/11/30	98	60 - 140	100	60 - 130	<0.040	ug/g		
8374571	1,1,2-Trichloroethane	2022/11/30	95	60 - 140	99	60 - 130	<0.040	ug/g		
8374571	1,1-Dichloroethane	2022/11/30	99	60 - 140	103	60 - 130	<0.040	ug/g		
8374571	1,1-Dichloroethylene	2022/11/30	99	60 - 140	105	60 - 130	<0.040	ug/g		
8374571	1,2-Dichlorobenzene	2022/11/30	95	60 - 140	98	60 - 130	<0.040	ug/g		
8374571	1,2-Dichloroethane	2022/11/30	87	60 - 140	89	60 - 130	<0.049	ug/g		
8374571	1,2-Dichloropropane	2022/11/30	100	60 - 140	104	60 - 130	<0.040	ug/g		
8374571	1,3-Dichlorobenzene	2022/11/30	97	60 - 140	100	60 - 130	<0.040	ug/g		
8374571	1,4-Dichlorobenzene	2022/11/30	101	60 - 140	105	60 - 130	<0.040	ug/g		
8374571	Acetone (2-Propanone)	2022/11/30	100	60 - 140	101	60 - 140	<0.49	ug/g		
8374571	Benzene	2022/12/01	94	60 - 140	98	60 - 130	<0.0060	ug/g	NC	50
8374571	Bromodichloromethane	2022/11/30	93	60 - 140	96	60 - 130	<0.040	ug/g		
8374571	Bromoform	2022/11/30	96	60 - 140	99	60 - 130	<0.040	ug/g		
8374571	Bromomethane	2022/11/30	96	60 - 140	100	60 - 140	<0.040	ug/g		
8374571	Carbon Tetrachloride	2022/11/30	90	60 - 140	95	60 - 130	<0.040	ug/g		
8374571	Chlorobenzene	2022/11/30	93	60 - 140	96	60 - 130	<0.040	ug/g		
8374571	Chloroform	2022/11/30	92	60 - 140	97	60 - 130	<0.040	ug/g		
8374571	cis-1,2-Dichloroethylene	2022/11/30	97	60 - 140	101	60 - 130	<0.040	ug/g		
8374571	cis-1,3-Dichloropropene	2022/11/30	82	60 - 140	82	60 - 130	<0.030	ug/g		
8374571	Dibromochloromethane	2022/11/30	91	60 - 140	95	60 - 130	<0.040	ug/g		
8374571	Dichlorodifluoromethane (FREON 12)	2022/11/30	112	60 - 140	127	60 - 140	<0.040	ug/g		
8374571	Ethylbenzene	2022/12/01	82	60 - 140	86	60 - 130	<0.010	ug/g	NC	50
8374571	Ethylene Dibromide	2022/11/30	92	60 - 140	94	60 - 130	<0.040	ug/g		
8374571	F1 (C6-C10) - BTEX	2022/12/01					<10	ug/g	NC	30
8374571	F1 (C6-C10)	2022/12/01	88	60 - 140	83	80 - 120	<10	ug/g	NC	30
8374571	Hexane	2022/11/30	96	60 - 140	113	60 - 130	<0.040	ug/g		
8374571	Methyl Ethyl Ketone (2-Butanone)	2022/11/30	104	60 - 140	105	60 - 140	<0.40	ug/g		

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			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8374571	Methyl Isobutyl Ketone	2022/11/30	76	60 - 140	76	60 - 130	<0.40	ug/g		
8374571	Methyl t-butyl ether (MTBE)	2022/11/30	90	60 - 140	92	60 - 130	<0.040	ug/g		
8374571	Methylene Chloride(Dichloromethane)	2022/11/30	105	60 - 140	110	60 - 130	<0.049	ug/g		
8374571	o-Xylene	2022/12/01	85	60 - 140	88	60 - 130	<0.020	ug/g	NC	50
8374571	p+m-Xylene	2022/12/01	84	60 - 140	87	60 - 130	<0.020	ug/g	NC	50
8374571	Styrene	2022/11/30	93	60 - 140	98	60 - 130	<0.040	ug/g		
8374571	Tetrachloroethylene	2022/11/30	93	60 - 140	99	60 - 130	<0.040	ug/g		
8374571	Toluene	2022/12/01	90	60 - 140	94	60 - 130	<0.020	ug/g	NC	50
8374571	Total Xylenes	2022/12/01					<0.020	ug/g	NC	50
8374571	trans-1,2-Dichloroethylene	2022/11/30	98	60 - 140	104	60 - 130	<0.040	ug/g		
8374571	trans-1,3-Dichloropropene	2022/11/30	88	60 - 140	89	60 - 130	<0.040	ug/g		
8374571	Trichloroethylene	2022/11/30	96	60 - 140	101	60 - 130	<0.010	ug/g		
8374571	Trichlorofluoromethane (FREON 11)	2022/11/30	88	60 - 140	95	60 - 130	<0.040	ug/g		
8374571	Vinyl Chloride	2022/11/30	107	60 - 140	114	60 - 130	<0.019	ug/g		
8374650	1,1,1,2-Tetrachloroethane	2022/11/30	90	60 - 140	92	60 - 130	<0.040	ug/g	NC	50
8374650	1,1,1-Trichloroethane	2022/11/30	98	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
8374650	1,1,2,2-Tetrachloroethane	2022/11/30	89	60 - 140	93	60 - 130	<0.040	ug/g	NC	50
8374650	1,1,2-Trichloroethane	2022/11/30	106	60 - 140	109	60 - 130	<0.040	ug/g	NC	50
8374650	1,1-Dichloroethane	2022/11/30	95	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
8374650	1,1-Dichloroethylene	2022/11/30	100	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
8374650	1,2-Dichlorobenzene	2022/11/30	95	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8374650	1,2-Dichloroethane	2022/11/30	97	60 - 140	100	60 - 130	<0.049	ug/g	NC	50
8374650	1,2-Dichloropropane	2022/11/30	95	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
8374650	1,3-Dichlorobenzene	2022/11/30	97	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8374650	1,4-Dichlorobenzene	2022/11/30	111	60 - 140	107	60 - 130	<0.040	ug/g	NC	50
8374650	Acetone (2-Propanone)	2022/11/30	105	60 - 140	108	60 - 140	<0.49	ug/g	NC	50
8374650	Benzene	2022/11/30	89	60 - 140	90	60 - 130	<0.0060	ug/g	NC	50
8374650	Bromodichloromethane	2022/11/30	94	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
8374650	Bromoform	2022/11/30	85	60 - 140	89	60 - 130	<0.040	ug/g	NC	50
8374650	Bromomethane	2022/11/30	93	60 - 140	95	60 - 140	<0.040	ug/g	NC	50
8374650	Carbon Tetrachloride	2022/11/30	95	60 - 140	95	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
8374650	Chlorobenzene	2022/11/30	93	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8374650	Chloroform	2022/11/30	95	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
8374650	cis-1,2-Dichloroethylene	2022/11/30	98	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
8374650	cis-1,3-Dichloropropene	2022/11/30	93	60 - 140	95	60 - 130	<0.030	ug/g	NC	50
8374650	Dibromochloromethane	2022/11/30	89	60 - 140	92	60 - 130	<0.040	ug/g	NC	50
8374650	Dichlorodifluoromethane (FREON 12)	2022/11/30	116	60 - 140	116	60 - 140	<0.040	ug/g	NC	50
8374650	Ethylbenzene	2022/11/30	90	60 - 140	89	60 - 130	<0.010	ug/g	1.6	50
8374650	Ethylene Dibromide	2022/11/30	89	60 - 140	92	60 - 130	<0.040	ug/g	NC	50
8374650	Hexane	2022/11/30	94	60 - 140	95	60 - 130	<0.040	ug/g	0.97	50
8374650	Methyl Ethyl Ketone (2-Butanone)	2022/11/30	102	60 - 140	107	60 - 140	<0.40	ug/g	NC	50
8374650	Methyl Isobutyl Ketone	2022/11/30	93	60 - 140	98	60 - 130	<0.40	ug/g	NC	50
8374650	Methyl t-butyl ether (MTBE)	2022/11/30	86	60 - 140	87	60 - 130	<0.040	ug/g	NC	50
8374650	Methylene Chloride(Dichloromethane)	2022/11/30	97	60 - 140	98	60 - 130	<0.049	ug/g	NC	50
8374650	o-Xylene	2022/11/30	90	60 - 140	90	60 - 130	<0.020	ug/g	NC	50
8374650	p+m-Xylene	2022/11/30	92	60 - 140	91	60 - 130	<0.020	ug/g	0.62	50
8374650	Styrene	2022/11/30	93	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8374650	Tetrachloroethylene	2022/11/30	86	60 - 140	85	60 - 130	<0.040	ug/g	NC	50
8374650	Toluene	2022/11/30	89	60 - 140	90	60 - 130	<0.020	ug/g	NC	50
8374650	Total Xylenes	2022/11/30					<0.020	ug/g	0.62	50
8374650	trans-1,2-Dichloroethylene	2022/11/30	99	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
8374650	trans-1,3-Dichloropropene	2022/11/30	106	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
8374650	Trichloroethylene	2022/11/30	92	60 - 140	92	60 - 130	<0.010	ug/g	NC	50
8374650	Trichlorofluoromethane (FREON 11)	2022/11/30	97	60 - 140	97	60 - 130	<0.040	ug/g	NC	50
8374650	Vinyl Chloride	2022/11/30	88	60 - 140	88	60 - 130	<0.019	ug/g	NC	50
8375440	Moisture	2022/11/30							2.0	20
8376121	WAD Cyanide (Free)	2022/11/30	97	75 - 125	105	80 - 120	<0.01	ug/g	NC	35
8376566	Moisture	2022/11/30							11	20
8377506	Acid Extractable Antimony (Sb)	2022/12/01	88	75 - 125	99	80 - 120	<0.20	ug/g	19	30
8377506	Acid Extractable Arsenic (As)	2022/12/01	98	75 - 125	100	80 - 120	<1.0	ug/g	0.42	30
8377506	Acid Extractable Barium (Ba)	2022/12/01	NC	75 - 125	99	80 - 120	<0.50	ug/g	2.3	30
8377506	Acid Extractable Beryllium (Be)	2022/12/01	99	75 - 125	98	80 - 120	<0.20	ug/g	6.0	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
8377506	Acid Extractable Boron (B)	2022/12/01	101	75 - 125	100	80 - 120	<5.0	ug/g	5.7	30
8377506	Acid Extractable Cadmium (Cd)	2022/12/01	96	75 - 125	97	80 - 120	<0.10	ug/g	NC	30
8377506	Acid Extractable Chromium (Cr)	2022/12/01	101	75 - 125	103	80 - 120	<1.0	ug/g	0.16	30
8377506	Acid Extractable Cobalt (Co)	2022/12/01	96	75 - 125	97	80 - 120	<0.10	ug/g	0.97	30
8377506	Acid Extractable Copper (Cu)	2022/12/01	NC	75 - 125	99	80 - 120	<0.50	ug/g	0.011	30
8377506	Acid Extractable Lead (Pb)	2022/12/01	93	75 - 125	95	80 - 120	<1.0	ug/g	0.032	30
8377506	Acid Extractable Mercury (Hg)	2022/12/01	93	75 - 125	90	80 - 120	<0.050	ug/g		
8377506	Acid Extractable Molybdenum (Mo)	2022/12/01	96	75 - 125	97	80 - 120	<0.50	ug/g	2.0	30
8377506	Acid Extractable Nickel (Ni)	2022/12/01	NC	75 - 125	98	80 - 120	<0.50	ug/g	1.8	30
8377506	Acid Extractable Selenium (Se)	2022/12/01	98	75 - 125	98	80 - 120	<0.50	ug/g	NC	30
8377506	Acid Extractable Silver (Ag)	2022/12/01	97	75 - 125	98	80 - 120	<0.20	ug/g	NC	30
8377506	Acid Extractable Thallium (Tl)	2022/12/01	94	75 - 125	96	80 - 120	<0.050	ug/g	0.57	30
8377506	Acid Extractable Uranium (U)	2022/12/01	97	75 - 125	97	80 - 120	<0.050	ug/g	4.5	30
8377506	Acid Extractable Vanadium (V)	2022/12/01	NC	75 - 125	97	80 - 120	<5.0	ug/g	3.9	30
8377506	Acid Extractable Zinc (Zn)	2022/12/01	NC	75 - 125	98	80 - 120	<5.0	ug/g	0.074	30
8377816	Available (CaCl2) pH	2022/12/01			100	97 - 103			0.58	N/A
8377820	Available (CaCl2) pH	2022/12/01			100	97 - 103			0.12	N/A
8378129	Conductivity	2022/12/01			104	90 - 110	<0.002	mS/cm	2.7	10
8380239	1-Methylnaphthalene	2022/12/03	90	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40
8380239	2-Methylnaphthalene	2022/12/03	81	50 - 130	89	50 - 130	<0.0050	ug/g	NC	40
8380239	Acenaphthene	2022/12/03	86	50 - 130	89	50 - 130	<0.0050	ug/g	NC	40
8380239	Acenaphthylene	2022/12/03	82	50 - 130	85	50 - 130	<0.0050	ug/g	NC	40
8380239	Anthracene	2022/12/03	89	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
8380239	Benzo(a)anthracene	2022/12/03	92	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
8380239	Benzo(a)pyrene	2022/12/03	84	50 - 130	91	50 - 130	<0.0050	ug/g	NC	40
8380239	Benzo(b/j)fluoranthene	2022/12/03	85	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
8380239	Benzo(g,h,i)perylene	2022/12/03	91	50 - 130	101	50 - 130	<0.0050	ug/g	NC	40
8380239	Benzo(k)fluoranthene	2022/12/03	82	50 - 130	87	50 - 130	<0.0050	ug/g	NC	40
8380239	Chrysene	2022/12/03	86	50 - 130	92	50 - 130	<0.0050	ug/g	NC	40
8380239	Dibenzo(a,h)anthracene	2022/12/03	90	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
8380239	Fluoranthene	2022/12/03	98	50 - 130	104	50 - 130	<0.0050	ug/g	NC	40

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
8380239	Fluorene	2022/12/03	89	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
8380239	Indeno(1,2,3-cd)pyrene	2022/12/03	91	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
8380239	Naphthalene	2022/12/03	72	50 - 130	85	50 - 130	<0.0050	ug/g	NC	40
8380239	Phenanthrene	2022/12/03	84	50 - 130	89	50 - 130	<0.0050	ug/g	NC	40
8380239	Pyrene	2022/12/03	99	50 - 130	105	50 - 130	<0.0050	ug/g	NC	40
8381389	Benzene	2022/12/03	93	50 - 140	93	50 - 140	<0.020	ug/g	NC	50
8381389	Ethylbenzene	2022/12/03	100	50 - 140	102	50 - 140	<0.020	ug/g	NC	50
8381389	F1 (C6-C10) - BTEX	2022/12/03					<10	ug/g	NC	30
8381389	F1 (C6-C10)	2022/12/03	99	60 - 140	92	80 - 120	<10	ug/g	NC	30
8381389	o-Xylene	2022/12/03	96	50 - 140	98	50 - 140	<0.020	ug/g	NC	50
8381389	p+m-Xylene	2022/12/03	93	50 - 140	95	50 - 140	<0.040	ug/g	NC	50
8381389	Toluene	2022/12/03	90	50 - 140	90	50 - 140	<0.020	ug/g	NC	50
8381389	Total Xylenes	2022/12/03					<0.040	ug/g	NC	50
8383006	F2 (C10-C16 Hydrocarbons)	2022/12/05	88	60 - 130	92	80 - 120	<10	ug/g	NC	30
8383006	F3 (C16-C34 Hydrocarbons)	2022/12/05	90	60 - 130	93	80 - 120	<50	ug/g	NC	30
8383006	F4 (C34-C50 Hydrocarbons)	2022/12/05	92	60 - 130	94	80 - 120	<50	ug/g	NC	30
8383684	F2 (C10-C16 Hydrocarbons)	2022/12/05	111	60 - 130	110	80 - 120	<10	ug/g	NC	30
8383684	F3 (C16-C34 Hydrocarbons)	2022/12/05	110	60 - 130	110	80 - 120	<50	ug/g	NC	30
8383684	F4 (C34-C50 Hydrocarbons)	2022/12/05	109	60 - 130	108	80 - 120	<50	ug/g	NC	30
8386161	F4G-sg (Grav. Heavy Hydrocarbons)	2022/12/06	86	65 - 135	100	65 - 135	<100	ug/g	0	50
8425975	1,2,3,4,6,7,8-Hepta CDD	2022/12/29	112	70 - 140	111	70 - 140	0.233, EDL=0.150	pg/g	0.48	25
8425975	1,2,3,4,6,7,8-Hepta CDF	2022/12/29	97	82 - 122	97	82 - 122	<0.130, EDL=0.130	pg/g	8.6	25
8425975	1,2,3,4,7,8,9-Hepta CDF	2022/12/29	93	78 - 138	93	78 - 138	<0.164, EDL=0.164	pg/g	2.4	25
8425975	1,2,3,4,7,8-Hexa CDD	2022/12/29	112	70 - 164	107	70 - 164	<0.158, EDL=0.158	pg/g	NC	25
8425975	1,2,3,4,7,8-Hexa CDF	2022/12/29	106	72 - 134	103	72 - 134	<0.107, EDL=0.107	pg/g	8.2	25
8425975	1,2,3,6,7,8-Hexa CDD	2022/12/29	108	76 - 134	114	76 - 134	<0.141, EDL=0.141	pg/g	5.5	25

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
8425975	1,2,3,6,7,8-Hexa CDF	2022/12/29	106	84 - 130	106	84 - 130	<0.109, EDL=0.109	pg/g	3.2	25
8425975	1,2,3,7,8,9-Hexa CDD	2022/12/29	109	64 - 162	108	64 - 162	<0.158, EDL=0.158	pg/g	1.4	25
8425975	1,2,3,7,8,9-Hexa CDF	2022/12/29	114	78 - 130	107	78 - 130	0.216, EDL=0.183	pg/g	NC	25
8425975	1,2,3,7,8-Penta CDD	2022/12/29	114	25 - 181	110	25 - 181	<0.116, EDL=0.116	pg/g	NC	25
8425975	1,2,3,7,8-Penta CDF	2022/12/29	113	80 - 134	114	80 - 134	<0.132, EDL=0.132	pg/g	NC	25
8425975	2,3,4,6,7,8-Hexa CDF	2022/12/29	98	70 - 156	98	70 - 156	<0.108, EDL=0.108	pg/g	1.6	25
8425975	2,3,4,7,8-Penta CDF	2022/12/29	113	68 - 160	114	68 - 160	<0.111, EDL=0.111	pg/g	4.6	25
8425975	2,3,7,8-Tetra CDD	2022/12/29	118	67 - 158	123	67 - 158	<0.136, EDL=0.136	pg/g	NC	25
8425975	2,3,7,8-Tetra CDF	2022/12/29	97	75 - 158	97	75 - 158	<0.118, EDL=0.118	pg/g	172 (2)	25
8425975	Octa CDD	2022/12/29	117	78 - 144	121	78 - 144	0.486, EDL=0.135	pg/g	1.3	25
8425975	Octa CDF	2022/12/29	127	63 - 170	123	63 - 170	0.439, EDL=0.129	pg/g	2.8	25
8425975	Total Hepta CDD	2022/12/29					0.233, EDL=0.150	pg/g	3.2	25
8425975	Total Hepta CDF	2022/12/29					<0.134, EDL=0.134	pg/g	6.3	25
8425975	Total Hexa CDD	2022/12/29					<0.160, EDL=0.160	pg/g	1.8	25
8425975	Total Hexa CDF	2022/12/29					0.216, EDL=0.120	pg/g	4.0	25
8425975	Total Penta CDD	2022/12/29					<0.168, EDL=0.168	pg/g	10	25

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			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8425975	Total Penta CDF	2022/12/29					0.159, EDL=0.116	pg/g	12	25
8425975	Total Tetra CDD	2022/12/29					<0.136, EDL=0.136	pg/g	41 (1)	25
8425975	Total Tetra CDF	2022/12/29					<0.118, EDL=0.118	pg/g	0.21	25

N/A = Not Applicable

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

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

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

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

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

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

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

(1) Duplicate results exceeded RPD acceptance criteria. This may be due to sample heterogeneity.

(2) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.Duplicate results exceeded RPD acceptance criteria. This may be due to sample heterogeneity.

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VALIDATION SIGNATURE PAGE

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

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS and SVOC

Cristina Carriere, Senior Scientific Specialist

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

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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:	SAME	Quotation #:		[X] 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 Richmond Hill, ON L4B 1E7	Address:		Project #:	2203-E020	Rush TAT (Surcharges will be applied) [ ] 1 Day [ ] 2 Days [ ] 3-4 Days
Phone:	(416) 754-8515 Ext. 1313 Fax: (905) 881-8335	Phone:	Fax:	Site Location:		
Email:	ram.sah@soilengineersltd.com	Email:		Site #:		
				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

[X] Table 1 [ ] Res/Park [ ] Med/ Fine
[ ] Table 2 [ ] Ind/Comm [X] 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. 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/ PHC F1-F4	VOCs	PAHs	Metals Scan	Metals Package	Dioxins and Furans	pH	Cyanide	EC, SAR	HOLD- DO NOT ANALYZE
										REFER TO BACK OF COC						
1	BH/MW1/1A	2022-11-25	9:00	S	2				X							
2	BH/MW1/1B	2022-11-25	9:15	S	1						X		X	X	X	
3	BH/MW1/2	2022-11-25	9:35	S	1		X	X								
4	BH2/1	2022-11-25	10:45	S	1					X						
5	BH2/2	2022-11-25	10:55	S	1		X	X								
6	BH/MW3/1A	2022-11-25	13:20	S	1				X			X				
7	BH/MW3/2	2022-11-25	13:35	S	2						X		X	X	X	
8	BH/MW3/3	2022-11-25	13:45	S	1		X									
9	BH/MW3/4	2022-11-25	13:55	S	1			X					X			
10	BH/MW4/1A	2022-11-25	11:30	S	2				X							

LABORATORY USE ONLY

CUSTODY SEAL (Y) / N

Present	Intact	COOLER TEMPERATURES
		0 1 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)
[illegible]	2022/11/28	10:05	RAJ MALANI	2022/11/28	1508

28-Nov-22 15:08
Antonella Brasil
C2Y8860
J_L ENV-1983

DV - 622490

Maxxam
A Bureau Veritas Group Company
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 #:	[X] Regular TAT (5-7 days) Most analyses
Contact Name: Ram Sah	Contact Name: SAMAR	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 90 West Beaver Creek Road, Richmond Hill, ON L4B 1E7	Address:	Project #: 2203-E020	Rush TAT (Surcharges will be applied) [ ] 1 Day [ ] 2 Days [ ] 3-4 Days
Phone: (416) 754-8515 Ext. 1313 Fax: (905) 881-8335	Phone: Fax:	Site Location:	
Email: ram.sah@soilengineersltd.com	Email:	Site #:	Date Required:
		Sampled By: Ashish	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: [X] Table 1 [ ] Res/Park [ ] Med/Fine; [ ] Table 2 [ ] Ind/Comm [X] Coarse; [ ] Table 3 [X] 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. 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 (REFER TO BACK OF COC)

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1-F4	VOCs	PAHs	Metals Scan	Metals Package	Dioxins and Furans	pH	Cyanide	EC, SAR	HOLD- DO NOT ANALYZE
1	BH/MW4/1B	2022-11-25	11:40	S	2						X		X	X	X	
2	BH/MW4/2	2022-11-25	11:50	S	1		X	X								
3	BHS/1	2022-11-25	14:35	S	1				X		X		X	X	X	
4	BHS/2	2022-11-25	14:45	S	1		X	X								
5	TP1	2022-11-25	15:05	S	1				X		X		X	X	X	
6	TP2	2022-11-25	15:15	S	1		X	X								
7	DUPS1							X								
8	DUPS2										X		X	X	X	
9																
10																

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
[illegible]	2022/11/28	10:05	See Page 1		

LABORATORY USE ONLY

CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	

COOLING MEDIA PRESENT: Y / N

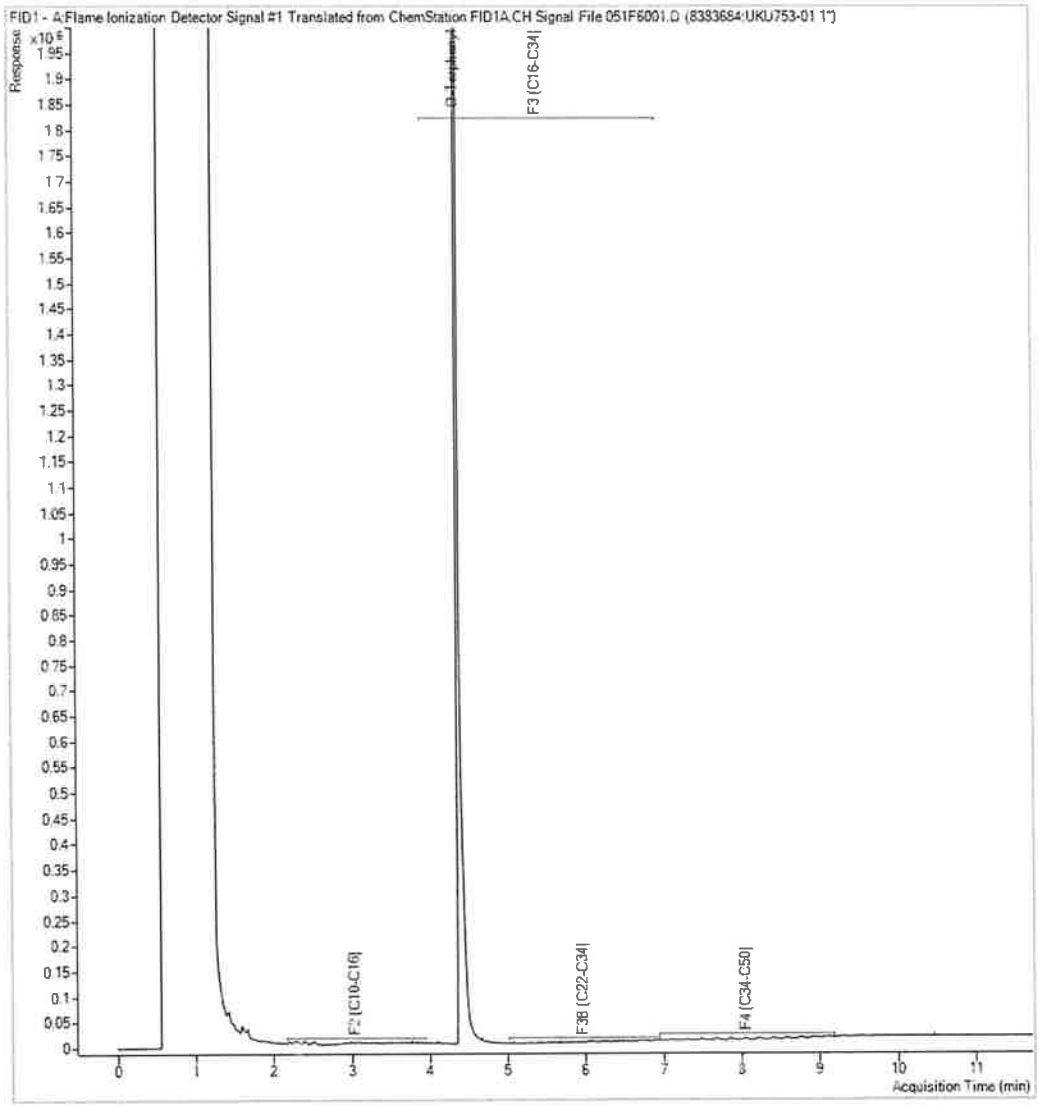
COMMENTS

MAXXAM JOB #

Bureau Veritas Job #: C2Y8860
Report Date: 2023/01/11
Bureau Veritas Sample: UKU753

Soil Engineers Ltd
Client Project #: 2203-E020
Client ID: BH/MW1/2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

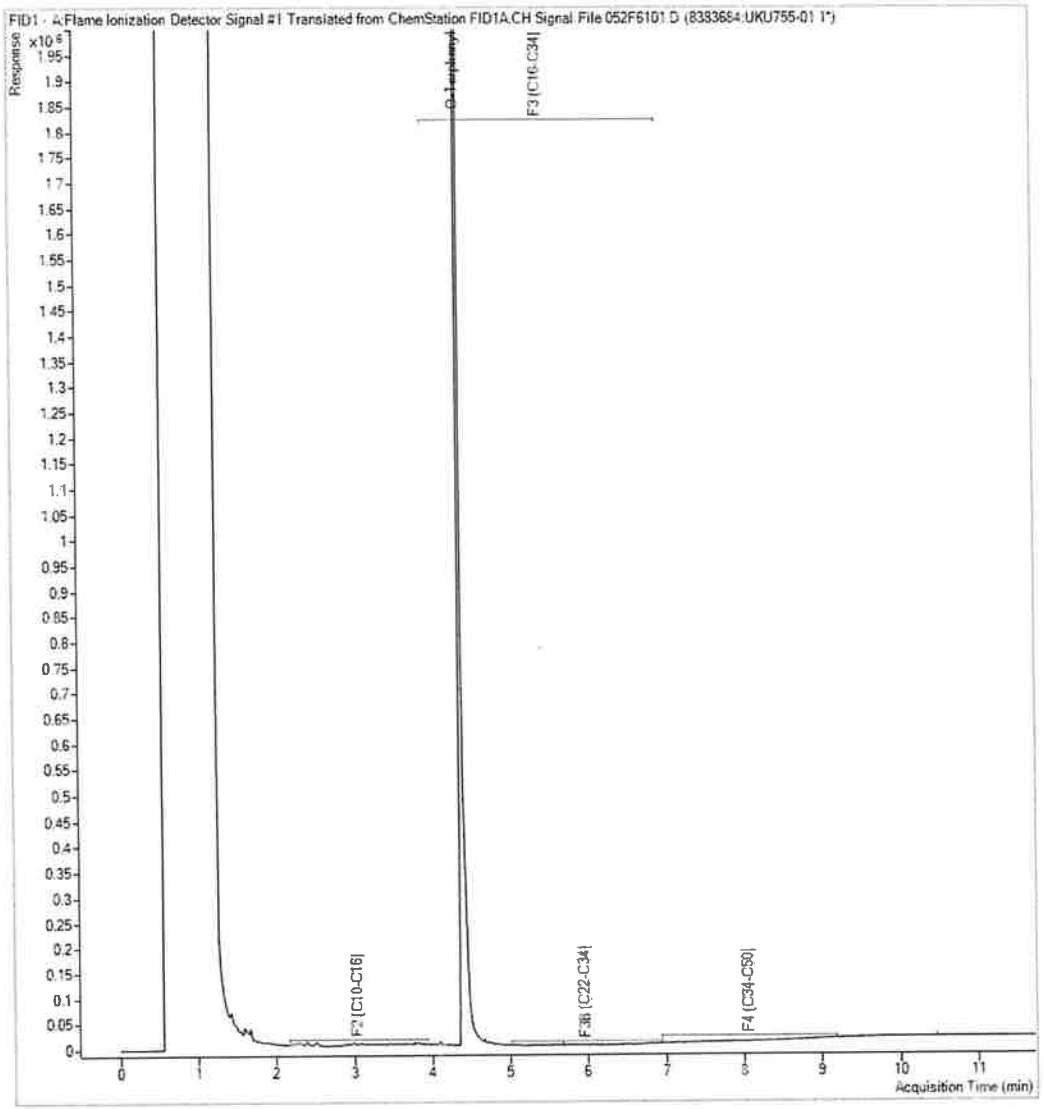


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C2Y8860
Report Date: 2023/01/11
Bureau Veritas Sample: UKU755

Soil Engineers Ltd
Client Project #: 2203-E020
Client ID: BH2/2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

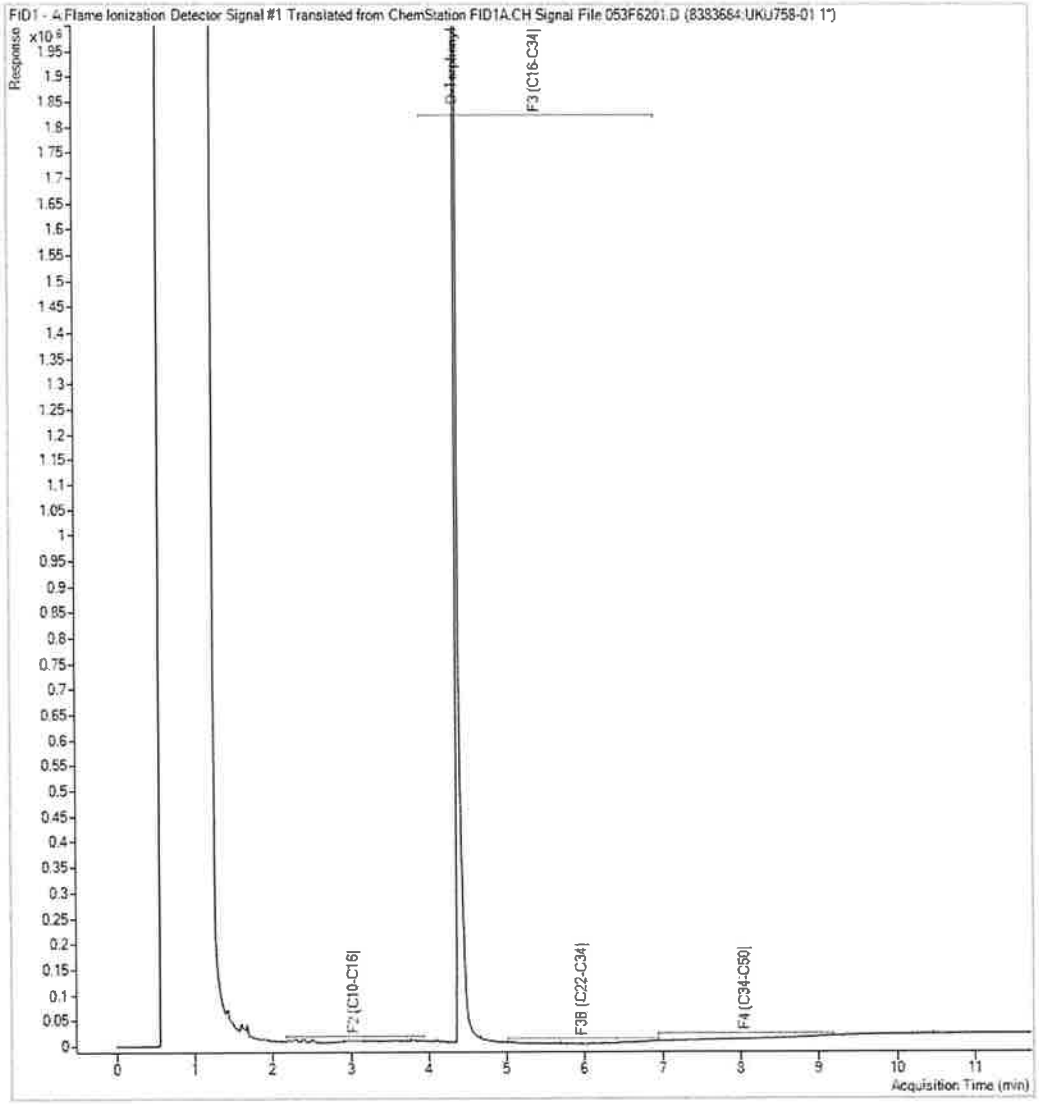


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C2Y8860
Report Date: 2023/01/11
Bureau Veritas Sample: UKU758

Soil Engineers Ltd
Client Project #: 2203-E020
Client ID: BH/MW3/3

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

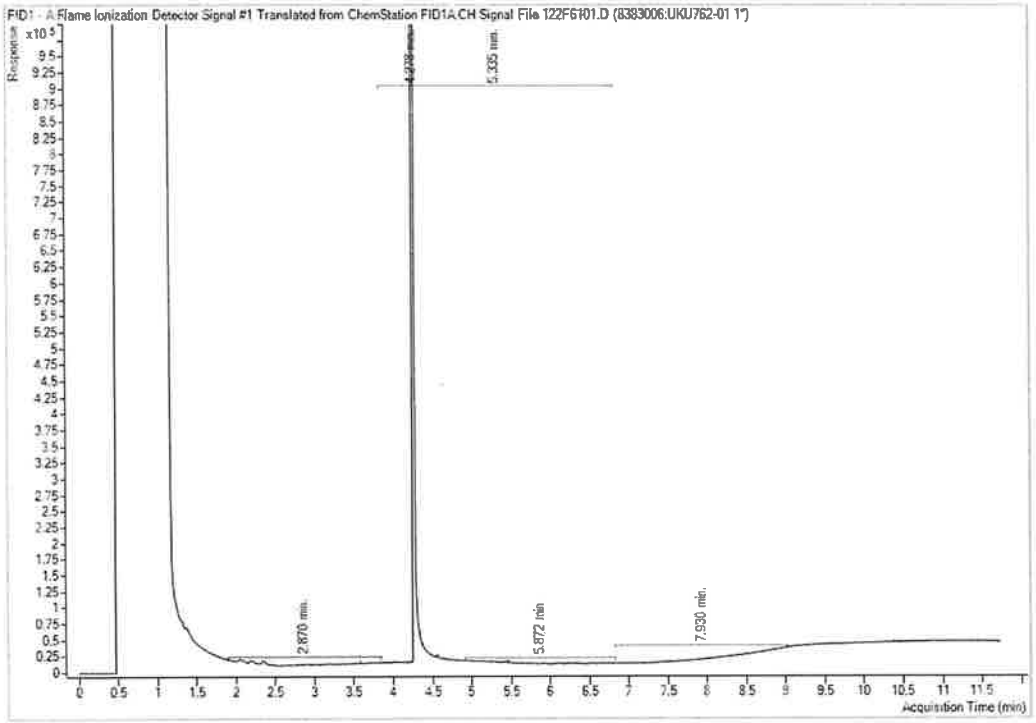


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C2Y8860
Report Date: 2023/01/11
Bureau Veritas Sample: UKU762

Soil Engineers Ltd
Client Project #: 2203-E020
Client ID: BH/MW4/2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

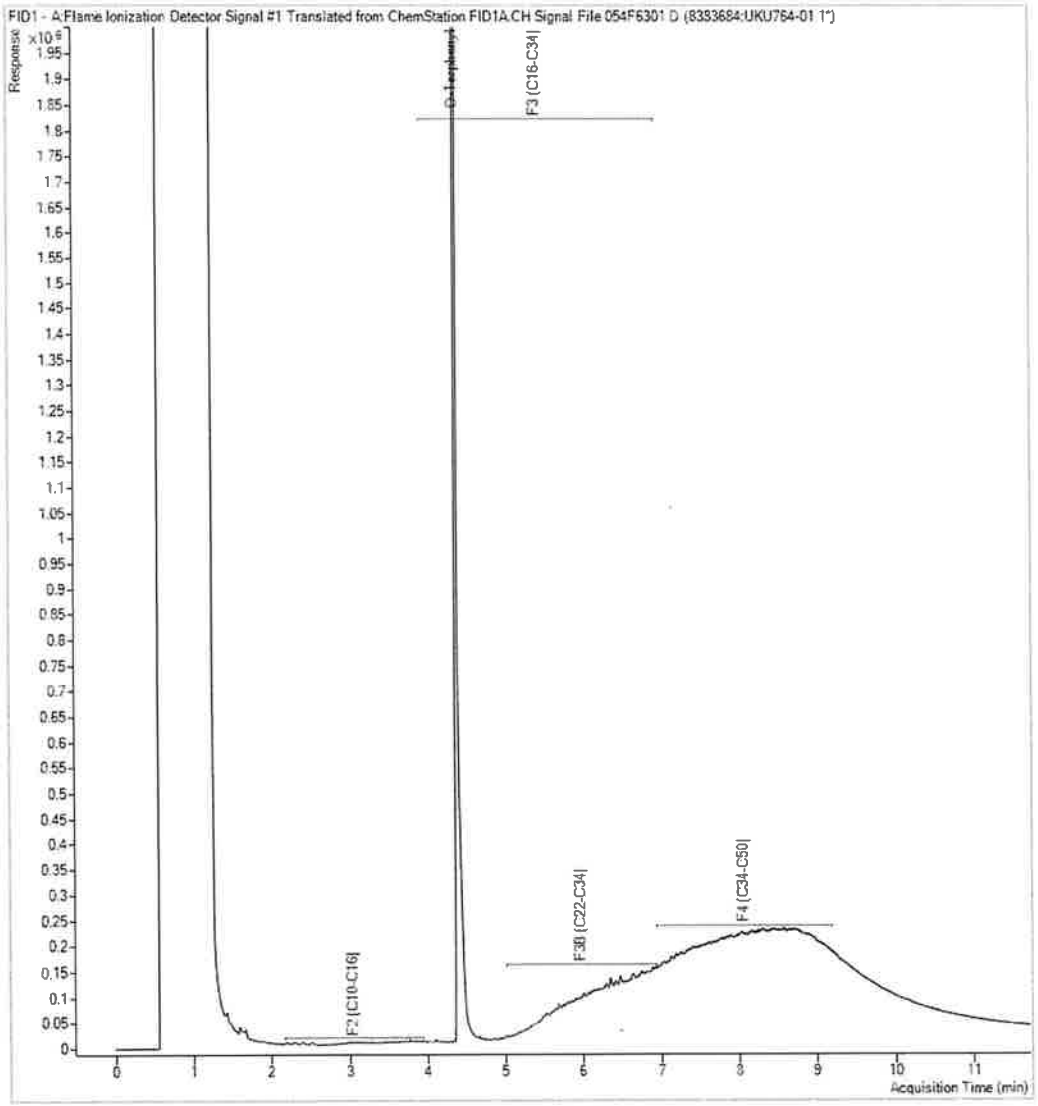


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C2Y8860
Report Date: 2023/01/11
Bureau Veritas Sample: UKU764

Soil Engineers Ltd
Client Project #: 2203-E020
Client ID: BH5/2

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

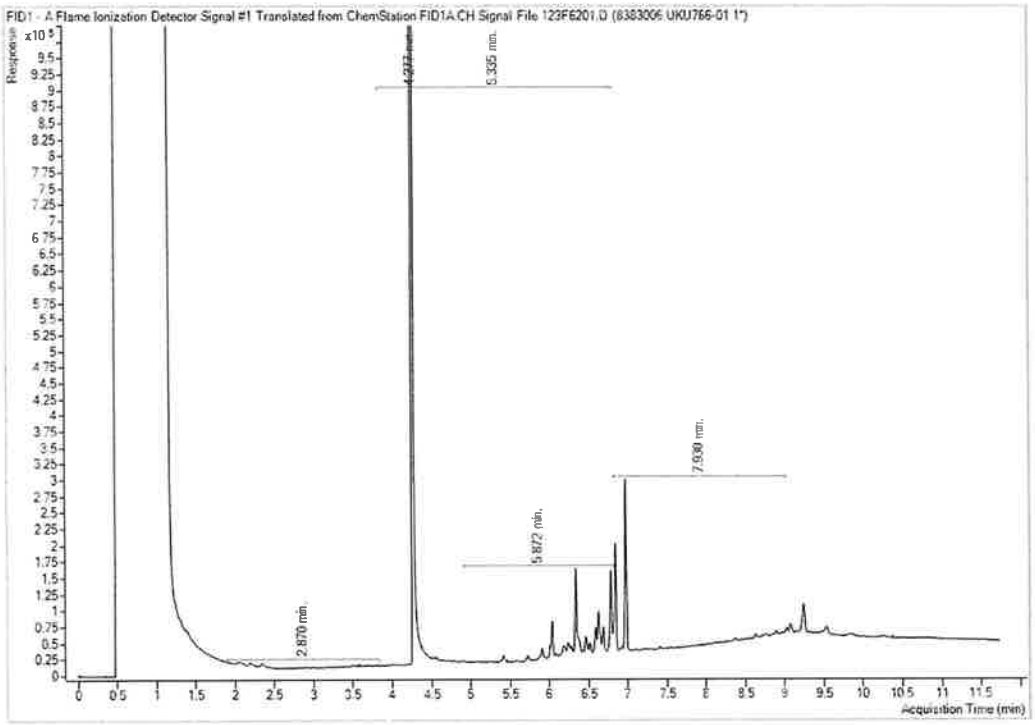


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C2Y8860
Report Date: 2023/01/11
Bureau Veritas Sample: UKU766

Soil Engineers Ltd
Client Project #: 2203-E020
Client ID: TP2

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 #: 2203-E020
Site Location: DERRY ROAD, MISSISSAUGA
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: 2023/01/12
Report #: R7465090
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2AQ878
Received: 2022/12/22, 16:40

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	2	N/A	2023/01/03	CAM SOP-00301	EPA 8270D m
Moisture	2	N/A	2022/12/28	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	2	2022/12/29	2022/12/30	CAM SOP-00318	EPA 8270D 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.

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

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

Your Project #: 2203-E020
Site Location: DERRY ROAD, MISSISSAUGA
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: 2023/01/12
Report #: R7465090
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2AQ878
Received: 2022/12/22, 16:40

Encryption Key

Gina Baybayan
Project Manager
12 Jan 2023 13:45:56

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

==========

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Bureau Veritas Job #: C2AQ878
Report Date: 2023/01/12

Soil Engineers Ltd
Client Project #: 2203-E020
Site Location: DERRY ROAD, MISSISSAUGA
Sampler Initials: AB

O.REG 153 PAHS (SOIL)

Bureau Veritas ID		URA481	URA482			
Sampling Date		2022/11/25	2022/11/25			
COC Number		N/A	N/A			
	UNITS	DUPS3	DUPS4	RDL	MDL	QC Batch
Inorganics						
Moisture	%	13	14	1.0	0.50	8424115
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/g	<0.071	<0.071	0.071	N/A	8421168
Polyaromatic Hydrocarbons						
Acenaphthene	ug/g	<0.050	<0.050	0.050	0.020	8425499
Acenaphthylene	ug/g	<0.050	<0.050	0.050	0.010	8425499
Anthracene	ug/g	<0.050	<0.050	0.050	0.010	8425499
Benzo(a)anthracene	ug/g	0.055	<0.050	0.050	0.020	8425499
Benzo(a)pyrene	ug/g	0.15	0.10	0.050	0.010	8425499
Benzo(b/j)fluoranthene	ug/g	0.14	0.084	0.050	0.020	8425499
Benzo(g,h,i)perylene	ug/g	0.33	0.24	0.050	0.040	8425499
Benzo(k)fluoranthene	ug/g	<0.050	<0.050	0.050	0.020	8425499
Chrysene	ug/g	0.051	<0.050	0.050	0.020	8425499
Dibenzo(a,h)anthracene	ug/g	<0.050	<0.050	0.050	0.040	8425499
Fluoranthene	ug/g	0.14	<0.050	0.050	0.010	8425499
Fluorene	ug/g	<0.050	<0.050	0.050	0.010	8425499
Indeno(1,2,3-cd)pyrene	ug/g	0.13	0.087	0.050	0.040	8425499
1-Methylnaphthalene	ug/g	<0.050	<0.050	0.050	0.010	8425499
2-Methylnaphthalene	ug/g	<0.050	<0.050	0.050	0.010	8425499
Naphthalene	ug/g	<0.050	<0.050	0.050	0.010	8425499
Phenanthrene	ug/g	0.11	<0.050	0.050	0.010	8425499
Pyrene	ug/g	0.16	0.072	0.050	0.010	8425499
Surrogate Recovery (%)						
D10-Anthracene	%	128	118			8425499
D14-Terphenyl (FS)	%	98	87			8425499
D8-Acenaphthylene	%	87	82			8425499

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C2AQ878
Report Date: 2023/01/12

Soil Engineers Ltd
Client Project #: 2203-E020
Site Location: DERRY ROAD, MISSISSAUGA
Sampler Initials: AB

TEST SUMMARY

Bureau Veritas ID: URA481
Sample ID: DUPS3
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/12/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8421168	N/A	2023/01/03	Automated Statchk
Moisture	BAL	8424115	N/A	2022/12/28	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8425499	2022/12/29	2022/12/30	Mitesh Raj

Bureau Veritas ID: URA482
Sample ID: DUPS4
Matrix: Soil

Collected: 2022/11/25
Shipped:
Received: 2022/12/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8421168	N/A	2023/01/03	Automated Statchk
Moisture	BAL	8424115	N/A	2022/12/28	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8425499	2022/12/29	2022/12/30	Mitesh Raj

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Bureau Veritas Job #: C2AQ878
Report Date: 2023/01/12

Soil Engineers Ltd
Client Project #: 2203-E020
Site Location: DERRY ROAD, MISSISSAUGA
Sampler Initials: AB

GENERAL COMMENTS

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

Package 1	6.3°C
Package 2	7.0°C

Cooler custody seal was present and intact.

Revised Report (2023/01/12). Project number was added on this report.

Sample URA481 [DUPS3] : PAH ANALYSIS:Due to the sample matrix, sample required dilution. Detection limis were adjusted accordingly.

Sample URA482 [DUPS4] : PAH ANALYSIS:Due to the sample matrix, sample required dilution. Detection limis were adjusted accordingly.

Results relate only to the items tested.

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

Bureau Veritas Job #: C2AQ878
Report Date: 2023/01/12

QUALITY ASSURANCE REPORT

Soil Engineers Ltd
Client Project #: 2203-E020
Site Location: DERRY ROAD, MISSISSAUGA
Sampler Initials: AB

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8425499	D10-Anthracene	2022/12/29	108	50 - 130	99	50 - 130	103	%		
8425499	D14-Terphenyl (FS)	2022/12/29	111	50 - 130	102	50 - 130	99	%		
8425499	D8-Acenaphthylene	2022/12/29	101	50 - 130	96	50 - 130	92	%		
8424115	Moisture	2022/12/28							0.59	20
8425499	1-Methylnaphthalene	2022/12/29	98	50 - 130	107	50 - 130	<0.0050	ug/g	NC	40
8425499	2-Methylnaphthalene	2022/12/29	93	50 - 130	101	50 - 130	<0.0050	ug/g	NC	40
8425499	Acenaphthene	2022/12/29	93	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40
8425499	Acenaphthylene	2022/12/29	90	50 - 130	95	50 - 130	<0.0050	ug/g	NC	40
8425499	Anthracene	2022/12/29	95	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
8425499	Benzo(a)anthracene	2022/12/29	98	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
8425499	Benzo(a)pyrene	2022/12/29	92	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
8425499	Benzo(b/j)fluoranthene	2022/12/29	89	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
8425499	Benzo(g,h,i)perylene	2022/12/29	103	50 - 130	106	50 - 130	<0.0050	ug/g	NC	40
8425499	Benzo(k)fluoranthene	2022/12/29	103	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
8425499	Chrysene	2022/12/29	94	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40
8425499	Dibenzo(a,h)anthracene	2022/12/29	101	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40
8425499	Fluoranthene	2022/12/29	100	50 - 130	104	50 - 130	<0.0050	ug/g	NC	40
8425499	Fluorene	2022/12/29	92	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40
8425499	Indeno(1,2,3-cd)pyrene	2022/12/29	95	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
8425499	Naphthalene	2022/12/29	82	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
8425499	Phenanthrene	2022/12/29	94	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40
8425499	Pyrene	2022/12/29	98	50 - 130	103	50 - 130	<0.0050	ug/g	NC	40

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

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

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

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

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

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

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

Bureau Veritas Job #: C2AQ878
Report Date: 2023/01/12

Soil Engineers Ltd
Client Project #: 2203-E020
Site Location: DERRY ROAD, MISSISSAUGA
Sampler Initials: AB

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

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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 #:		[X] 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 Richmond Hill, ON L4B 1E7	Address:	SAME	Project #:	Derry Road, Mississauga	Rush TAT (Surcharges will be applied) [ ] 1 Day [ ] 2 Days [ ] 3-4 Days
Phone:	(416) 754-8515 Ext. 1313 Fax: (905) 881-8335	Phone:	Fax:	Site Location:		
Email:	ram.sah@soilengineersltd.com	Email:		Site #:		
				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
[X] Table 1 [ ] Res/Park [ ] Med/ Fine [ ] Table 2 [ ] Ind/Comm [X] Coarse [ ] Table 3 [X] 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

LABORATORY USE ONLY

CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	
Y	Y	2.1 9.1 3
Y	Y	4.1 9.1 8

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	PAHs	HOLD- DO NOT ANALYZE	COMMENTS
1	DUPS3	2022-11-25		S	1		X		
2	DUPS4	2022-11-25		S	1		X		
3									
4									
5									
6									
7									
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	2022/12/22		[signature]	[signature]	1040

22-Dec-22 16:40
Antonella Brasil
C2AQ878

AVI ENV-1617

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

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APPENDIX 'D'

CERTIFICATES OF ANALYSIS (GROUNDWATER SAMPLES)

REFERENCE NO. 2203-E020

Your Project #: 2203-E020
Your C.O.C. #: 910100-01-01, NA

Attention: Ram Sah

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

Report Date: 2023/01/18
Report #: R7475071
Version: 4 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AE597
Received: 2022/12/12, 16:11

Sample Matrix: Ground Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Mercury	1	2022/12/16	2022/12/16	CAM SOP-00453	EPA 7470A m

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	1	N/A	2022/12/19	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	2	N/A	2022/12/18		EPA 8260C m
1,3-Dichloropropene Sum	1	N/A	2022/12/19		EPA 8260C m
Chromium (VI) in Water	1	N/A	2022/12/14	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide	1	N/A	2022/12/14	CAM SOP-00457	OMOE E3015 m
Dioxins/Furans in Water (1613B) (1)	1	2022/12/28	2023/01/03	BRL SOP-00410	EPA 1613B m
Petroleum Hydrocarbons F2-F4 in Water (2)	1	2022/12/14	2022/12/14	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS	1	N/A	2022/12/14	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM)	1	2022/12/14	2022/12/16	CAM SOP-00318	EPA 8270D m
pH	1	2022/12/13	2022/12/14	CAM SOP-00413	SM 4500H+ B m
Volatile Organic Compounds and F1 PHCs	1	N/A	2022/12/19	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Water	2	N/A	2022/12/16	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

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Your Project #: 2203-E020
Your C.O.C. #: 910100-01-01, NA

Attention: Ram Sah

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

Report Date: 2023/01/18
Report #: R7475071
Version: 4 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AE597
Received: 2022/12/12, 16:11

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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Antonella Brasil
Senior Project Manager
18 Jan 2023 16:07:13

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

==========

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

ELEMENTS BY ATOMIC SPECTROSCOPY (GROUND WATER)

Bureau Veritas ID		UOQ781	UOQ781			
Sampling Date		2022/12/09	2022/12/09			
COC Number		NA	NA			
	UNITS	BH/MW3	BH/MW3 Lab-Dup	RDL	MDL	QC Batch
Metals						
Mercury (Hg)	ug/L	<0.10	<0.10	0.10	0.020	8407677

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

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Bureau Veritas Job #: C2AE597
Report Date: 2023/01/18

Soil Engineers Ltd
Client Project #: 2203-E020
Sampler Initials: ASH

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		UOH528		
Sampling Date		2022/12/09		
COC Number		910100-01-01		
	UNITS	BH/MW3	MDL	QC Batch
Inorganics				
pH	pH	7.95		8401283
QC Batch = Quality Control Batch				

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DIOXINS AND FURANS BY HRMS (WATER)

Bureau Veritas ID		UOH528							
Sampling Date		2022/12/09							
COC Number		910100-01-01				TOXIC EQUIVALENCY		# of	
	UNITS	BH/MW3	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Dioxins & Furans									
2,3,7,8-Tetra CDD *	pg/L	<1.26	1.26	9.26	1.45	1.00	1.26	0	8430010
1,2,3,7,8-Penta CDD *	pg/L	<1.39	1.39	46.3	1.86	1.00	1.39	0	8430010
1,2,3,4,7,8-Hexa CDD *	pg/L	<1.41	1.41	46.3	2.25	0.100	0.141	0	8430010
1,2,3,6,7,8-Hexa CDD *	pg/L	<1.24	1.24	46.3	1.40	0.100	0.124	0	8430010
1,2,3,7,8,9-Hexa CDD *	pg/L	<1.29	1.29	46.3	1.13	0.100	0.129	0	8430010
1,2,3,4,6,7,8-Hepta CDD *	pg/L	<1.16	1.16	46.3	1.90	0.0100	0.0116	0	8430010
Octa CDD *	pg/L	4.25	1.31	92.6	3.13	0.000300	0.00128	1	8430010
Total Tetra CDD *	pg/L	<1.26	1.26	9.26	4.00			0	8430010
Total Penta CDD *	pg/L	<1.39	1.39	46.3	4.00			0	8430010
Total Hexa CDD *	pg/L	<1.31	1.31	46.3	4.00			0	8430010
Total Hepta CDD *	pg/L	<1.34	1.34	46.3	4.00			0	8430010
2,3,7,8-Tetra CDF **	pg/L	<1.13	1.13	9.26	1.68	0.100	0.113	0	8430010
1,2,3,7,8-Penta CDF **	pg/L	<1.36	1.36	46.3	1.33	0.0300	0.0408	0	8430010
2,3,4,7,8-Penta CDF **	pg/L	<1.19	1.19	46.3	1.23	0.300	0.357	0	8430010
1,2,3,4,7,8-Hexa CDF **	pg/L	<1.21	1.21	46.3	1.85	0.100	0.121	0	8430010
1,2,3,6,7,8-Hexa CDF **	pg/L	<1.11	1.11	46.3	1.52	0.100	0.111	0	8430010
2,3,4,6,7,8-Hexa CDF **	pg/L	<1.08	1.08	46.3	1.97	0.100	0.108	0	8430010
1,2,3,7,8,9-Hexa CDF **	pg/L	<1.43	1.43	46.3	1.66	0.100	0.143	0	8430010
1,2,3,4,6,7,8-Hepta CDF **	pg/L	<1.09	1.09	46.3	2.00	0.0100	0.0109	0	8430010
1,2,3,4,7,8,9-Hepta CDF **	pg/L	<1.35	1.35	46.3	1.87	0.0100	0.0135	0	8430010
Octa CDF **	pg/L	<1.33	1.33	92.6	3.99	0.000300	0.000399	0	8430010
Total Tetra CDF **	pg/L	<1.13	1.13	9.26	4.00			0	8430010
Total Penta CDF **	pg/L	<1.27	1.27	46.3	4.00			0	8430010
Total Hexa CDF **	pg/L	<1.20	1.20	46.3	4.00			0	8430010
Total Hepta CDF **	pg/L	<1.21	1.21	46.3	4.00			0	8430010
TOTAL TOXIC EQUIVALENCY	pg/L						4.08		
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	76							8430010

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (WATER)

Bureau Veritas ID		UOH528							
Sampling Date		2022/12/09							
COC Number		910100-01-01				TOXIC EQUIVALENCY		# of	
	UNITS	BH/MW3	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	98							8430010
C13-1234678 HeptaCDF **	%	90							8430010
C13-123478 HexaCDD *	%	88							8430010
C13-123478 HexaCDF **	%	89							8430010
C13-1234789 HeptaCDF **	%	93							8430010
C13-123678 HexaCDD *	%	96							8430010
C13-123678 HexaCDF **	%	94							8430010
C13-12378 PentaCDD *	%	69							8430010
C13-12378 PentaCDF **	%	78							8430010
C13-123789 HexaCDF **	%	94							8430010
C13-234678 HexaCDF **	%	101							8430010
C13-23478 PentaCDF **	%	83							8430010
C13-2378 TetraCDD *	%	73							8430010
C13-2378 TetraCDF **	%	97							8430010
C13-OCDD *	%	88							8430010

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
** CDF = Chloro Dibenzo-p-Furan

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O.REG 153 METALS & INORGANICS PKG (WTR)

Bureau Veritas ID		UOH528				UOH528			
Sampling Date		2022/12/09				2022/12/09			
COC Number		910100-01-01				910100-01-01			
	UNITS	BH/MW3	RDL	MDL	QC Batch	BH/MW3 Lab-Dup	RDL	MDL	QC Batch
Inorganics									
WAD Cyanide (Free)	ug/L	<1	1	0.1	8402452	<1	1	0.1	8402452
Metals									
Chromium (VI)	ug/L	<0.50	0.50	0.30	8402547				
Dissolved Antimony (Sb)	ug/L	0.61	0.50	0.50	8402472				
Dissolved Arsenic (As)	ug/L	4.3	1.0	1.0	8402472				
Dissolved Barium (Ba)	ug/L	81	2.0	2.0	8402472				
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8402472				
Dissolved Boron (B)	ug/L	360	10	10	8402472				
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.090	8402472				
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	5.0	8402472				
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	0.50	8402472				
Dissolved Copper (Cu)	ug/L	<0.90	0.90	0.90	8402472				
Dissolved Lead (Pb)	ug/L	<0.50	0.50	0.50	8402472				
Dissolved Molybdenum (Mo)	ug/L	41	0.50	0.50	8402472				
Dissolved Nickel (Ni)	ug/L	1.1	1.0	1.0	8402472				
Dissolved Selenium (Se)	ug/L	<2.0	2.0	2.0	8402472				
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.090	8402472				
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	0.050	8402472				
Dissolved Uranium (U)	ug/L	4.5	0.10	0.10	8402472				
Dissolved Vanadium (V)	ug/L	1.5	0.50	0.50	8402472				
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5.0	8402472				

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

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O.REG 153 PAHS (WATER)

Bureau Veritas ID		UOH528			
Sampling Date		2022/12/09			
COC Number		910100-01-01			
	UNITS	BH/MW3	RDL	MDL	QC Batch
Calculated Parameters					
Methylnaphthalene, 2-(1-)	ug/L	<0.071	0.071	N/A	8402744
Polyaromatic Hydrocarbons					
Acenaphthene	ug/L	<0.050	0.050	0.0030	8403664
Acenaphthylene	ug/L	<0.050	0.050	0.0030	8403664
Anthracene	ug/L	<0.050	0.050	0.0030	8403664
Benzo(a)anthracene	ug/L	<0.050	0.050	0.0030	8403664
Benzo(a)pyrene	ug/L	<0.0090	0.0090	0.0030	8403664
Benzo(b/j)fluoranthene	ug/L	<0.050	0.050	0.0030	8403664
Benzo(g,h,i)perylene	ug/L	<0.050	0.050	0.0030	8403664
Benzo(k)fluoranthene	ug/L	<0.050	0.050	0.0030	8403664
Chrysene	ug/L	<0.050	0.050	0.0030	8403664
Dibenzo(a,h)anthracene	ug/L	<0.050	0.050	0.0030	8403664
Fluoranthene	ug/L	<0.050	0.050	0.0030	8403664
Fluorene	ug/L	<0.050	0.050	0.0030	8403664
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	0.050	0.0030	8403664
1-Methylnaphthalene	ug/L	<0.050	0.050	0.0030	8403664
2-Methylnaphthalene	ug/L	<0.050	0.050	0.0030	8403664
Naphthalene	ug/L	<0.050	0.050	0.0030	8403664
Phenanthrene	ug/L	<0.030	0.030	0.0030	8403664
Pyrene	ug/L	<0.050	0.050	0.0030	8403664
Surrogate Recovery (%)					
D10-Anthracene	%	97			8403664
D14-Terphenyl (FS)	%	94			8403664
D8-Acenaphthylene	%	80			8403664

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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

Bureau Veritas ID		UOH528				UOH528			
Sampling Date		2022/12/09				2022/12/09			
COC Number		910100-01-01				910100-01-01			
	UNITS	BH/MW3	RDL	MDL	QC Batch	BH/MW3 Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	0.50	0.50	8400549				
Volatile Organics									
Acetone (2-Propanone)	ug/L	<10	10	1.0	8407730	<10	10	1.0	8407730
Benzene	ug/L	<0.17	0.17	0.020	8407730	<0.17	0.17	0.020	8407730
Bromodichloromethane	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
Bromoform	ug/L	<1.0	1.0	0.10	8407730	<1.0	1.0	0.10	8407730
Bromomethane	ug/L	<0.50	0.50	0.10	8407730	<0.50	0.50	0.10	8407730
Carbon Tetrachloride	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
Chlorobenzene	ug/L	<0.20	0.20	0.010	8407730	<0.20	0.20	0.010	8407730
Chloroform	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
Dibromochloromethane	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
1,2-Dichlorobenzene	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
1,3-Dichlorobenzene	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
1,4-Dichlorobenzene	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	1.0	0.050	8407730	<1.0	1.0	0.050	8407730
1,1-Dichloroethane	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
1,2-Dichloroethane	ug/L	<0.50	0.50	0.020	8407730	<0.50	0.50	0.020	8407730
1,1-Dichloroethylene	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
cis-1,2-Dichloroethylene	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
1,2-Dichloropropane	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
cis-1,3-Dichloropropene	ug/L	<0.30	0.30	0.050	8407730	<0.30	0.30	0.050	8407730
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	0.050	8407730	<0.40	0.40	0.050	8407730
Ethylbenzene	ug/L	<0.20	0.20	0.010	8407730	<0.20	0.20	0.010	8407730
Ethylene Dibromide	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
Hexane	ug/L	<1.0	1.0	0.10	8407730	<1.0	1.0	0.10	8407730
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	0.10	8407730	<2.0	2.0	0.10	8407730
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	10	0.50	8407730	<10	10	0.50	8407730
Methyl Isobutyl Ketone	ug/L	<5.0	5.0	0.10	8407730	<5.0	5.0	0.10	8407730
Methyl t-butyl ether (MTBE)	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
Styrene	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
1,1,1,2-Tetrachloroethane	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
Tetrachloroethylene	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
Toluene	ug/L	0.39	0.20	0.010	8407730	0.39	0.20	0.010	8407730

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

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

Bureau Veritas ID		UOH528				UOH528			
Sampling Date		2022/12/09				2022/12/09			
COC Number		910100-01-01				910100-01-01			
	UNITS	BH/MW3	RDL	MDL	QC Batch	BH/MW3 Lab-Dup	RDL	MDL	QC Batch
1,1,1-Trichloroethane	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
1,1,2-Trichloroethane	ug/L	<0.50	0.50	0.050	8407730	<0.50	0.50	0.050	8407730
Trichloroethylene	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	0.50	0.10	8407730	<0.50	0.50	0.10	8407730
Vinyl Chloride	ug/L	<0.20	0.20	0.050	8407730	<0.20	0.20	0.050	8407730
p+m-Xylene	ug/L	<0.20	0.20	0.010	8407730	<0.20	0.20	0.010	8407730
o-Xylene	ug/L	<0.20	0.20	0.010	8407730	<0.20	0.20	0.010	8407730
Total Xylenes	ug/L	<0.20	0.20	0.010	8407730	<0.20	0.20	0.010	8407730
F1 (C6-C10)	ug/L	<25	25	20	8407730	<25	25	20	8407730
F1 (C6-C10) - BTEX	ug/L	<25	25	20	8407730	<25	25	20	8407730
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	50	8402596				
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	70	8402596				
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	50	8402596				
Reached Baseline at C50	ug/L	Yes			8402596				
Surrogate Recovery (%)									
o-Terphenyl	%	104			8402596				
4-Bromofluorobenzene	%	92			8407730	92			8407730
D4-1,2-Dichloroethane	%	98			8407730	97			8407730
D8-Toluene	%	96			8407730	95			8407730

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

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O.REG 153 VOCS BY HS (WATER)

Bureau Veritas ID		UOH529	UOH530			
Sampling Date		2022/12/09	2022/12/09			
COC Number		910100-01-01	910100-01-01			
	UNITS	DUPW1	TRIP BLANK	RDL	MDL	QC Batch
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50	0.50	0.50	8400549
Volatile Organics						
Acetone (2-Propanone)	ug/L	<10	<10	10	1.0	8403070
Benzene	ug/L	<0.20	<0.20	0.20	0.020	8403070
Bromodichloromethane	ug/L	<0.50	<0.50	0.50	0.050	8403070
Bromoform	ug/L	<1.0	<1.0	1.0	0.10	8403070
Bromomethane	ug/L	<0.50	<0.50	0.50	0.10	8403070
Carbon Tetrachloride	ug/L	<0.19	<0.19	0.19	0.050	8403070
Chlorobenzene	ug/L	<0.20	<0.20	0.20	0.010	8403070
Chloroform	ug/L	<0.20	<0.20	0.20	0.050	8403070
Dibromochloromethane	ug/L	<0.50	<0.50	0.50	0.050	8403070
1,2-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	0.050	8403070
1,3-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	0.050	8403070
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	0.050	8403070
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	1.0	0.050	8403070
1,1-Dichloroethane	ug/L	<0.20	<0.20	0.20	0.050	8403070
1,2-Dichloroethane	ug/L	<0.49	<0.49	0.49	0.020	8403070
1,1-Dichloroethylene	ug/L	<0.20	<0.20	0.20	0.050	8403070
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	0.50	0.050	8403070
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	0.50	0.050	8403070
1,2-Dichloropropane	ug/L	<0.20	<0.20	0.20	0.050	8403070
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	0.30	0.050	8403070
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	0.40	0.050	8403070
Ethylbenzene	ug/L	<0.20	<0.20	0.20	0.010	8403070
Ethylene Dibromide	ug/L	<0.19	<0.19	0.19	0.050	8403070
Hexane	ug/L	<1.0	<1.0	1.0	0.10	8403070
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	0.10	8403070
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	10	0.50	8403070
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	5.0	0.10	8403070
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	0.50	0.050	8403070
Styrene	ug/L	<0.40	<0.40	0.40	0.050	8403070
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	0.50	0.050	8403070
1,1,2,2-Tetrachloroethane	ug/L	<0.40	<0.40	0.40	0.050	8403070
Tetrachloroethylene	ug/L	<0.20	<0.20	0.20	0.050	8403070
Toluene	ug/L	0.32	<0.20	0.20	0.010	8403070
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	0.20	0.050	8403070

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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O.REG 153 VOCS BY HS (WATER)

Bureau Veritas ID		UOH529	UOH530			
Sampling Date		2022/12/09	2022/12/09			
COC Number		910100-01-01	910100-01-01			
	UNITS	DUPW1	TRIP BLANK	RDL	MDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.40	<0.40	0.40	0.050	8403070
Trichloroethylene	ug/L	<0.20	<0.20	0.20	0.050	8403070
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	0.50	0.10	8403070
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	0.050	8403070
p+m-Xylene	ug/L	<0.20	<0.20	0.20	0.010	8403070
o-Xylene	ug/L	<0.20	<0.20	0.20	0.010	8403070
Total Xylenes	ug/L	<0.20	<0.20	0.20	0.010	8403070
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	90	88			8403070
D4-1,2-Dichloroethane	%	110	107			8403070
D8-Toluene	%	89	93			8403070

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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TEST SUMMARY

Bureau Veritas ID: UOH528
Sample ID: BH/MW3
Matrix: Water

Collected: 2022/12/09
Shipped:
Received: 2022/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8402744	N/A	2022/12/19	Automated Statchk
1,3-Dichloropropene Sum	CALC	8400549	N/A	2022/12/19	Automated Statchk
Chromium (VI) in Water	IC	8402547	N/A	2022/12/14	Theodora Luck
Free (WAD) Cyanide	SKAL/CN	8402452	N/A	2022/12/14	Prgya Panchal
Dioxins/Furans in Water (1613B)	HRMS/MS	8430010	2022/12/28	2023/01/03	Yan Qin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8402596	2022/12/14	2022/12/14	(Kent) Maolin Li
Dissolved Metals by ICPMS	ICP/MS	8402472	N/A	2022/12/14	Arefa Dabhad
PAH Compounds in Water by GC/MS (SIM)	GC/MS	8403664	2022/12/14	2022/12/16	Mitesh Raj
pH	AT	8401283	2022/12/13	2022/12/14	Taslima Aktar
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8407730	N/A	2022/12/19	Jett Wu

Bureau Veritas ID: UOH528 Dup
Sample ID: BH/MW3
Matrix: Water

Collected: 2022/12/09
Shipped:
Received: 2022/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	SKAL/CN	8402452	N/A	2022/12/14	Prgya Panchal
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8407730	N/A	2022/12/19	Jett Wu

Bureau Veritas ID: UOH529
Sample ID: DUPW1
Matrix: Water

Collected: 2022/12/09
Shipped:
Received: 2022/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8400549	N/A	2022/12/18	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	8403070	N/A	2022/12/16	Dina Wang

Bureau Veritas ID: UOH530
Sample ID: TRIP BLANK
Matrix: Water

Collected: 2022/12/09
Shipped:
Received: 2022/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8400549	N/A	2022/12/18	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	8403070	N/A	2022/12/16	Dina Wang

Bureau Veritas ID: UOQ781
Sample ID: BH/MW3
Matrix: Ground Water

Collected: 2022/12/09
Shipped:
Received: 2022/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury	CV/AA	8407677	2022/12/16	2022/12/16	Jaswinder Kaur

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Bureau Veritas Job #: C2AE597
Report Date: 2023/01/18

Soil Engineers Ltd
Client Project #: 2203-E020
Sampler Initials: ASH

TEST SUMMARY

Bureau Veritas ID: UOQ781 Dup
Sample ID: BH/MW3
Matrix: Ground Water

Collected: 2022/12/09
Shipped:
Received: 2022/12/12

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury	CV/AA	8407677	2022/12/16	2022/12/16	Jaswinder Kaur

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GENERAL COMMENTS

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

Package 1	1.0°C

Cooler custody seal was present and intact.

Results relate only to the items tested.

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Bureau Veritas Job #: C2AE597
Report Date: 2023/01/18

QUALITY ASSURANCE REPORT

Soil Engineers Ltd
Client Project #: 2203-E020
Sampler Initials: ASH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8402596	o-Terphenyl	2022/12/15	105	60 - 130	98	60 - 130	99	%		
8403070	4-Bromofluorobenzene	2022/12/16	101	70 - 130	100	70 - 130	96	%		
8403070	D4-1,2-Dichloroethane	2022/12/16	101	70 - 130	95	70 - 130	99	%		
8403070	D8-Toluene	2022/12/16	104	70 - 130	106	70 - 130	97	%		
8403664	D10-Anthracene	2022/12/15	101	50 - 130	100	50 - 130	112	%		
8403664	D14-Terphenyl (FS)	2022/12/15	104	50 - 130	101	50 - 130	111	%		
8403664	D8-Acenaphthylene	2022/12/15	96	50 - 130	91	50 - 130	95	%		
8407730	4-Bromofluorobenzene	2022/12/19	107	70 - 130	107	70 - 130	92	%		
8407730	D4-1,2-Dichloroethane	2022/12/19	98	70 - 130	92	70 - 130	96	%		
8407730	D8-Toluene	2022/12/19	100	70 - 130	101	70 - 130	97	%		
8430010	37CL4 2378 Tetra CDD	2023/01/03			73	35 - 197	60	%		
8430010	C13-1234678 HeptaCDD	2023/01/03			116	23 - 140	98	%		
8430010	C13-1234678 HeptaCDF	2023/01/03			114	28 - 143	91	%		
8430010	C13-123478 HexaCDD	2023/01/03			101	32 - 141	82	%		
8430010	C13-123478 HexaCDF	2023/01/03			106	26 - 152	83	%		
8430010	C13-1234789 HeptaCDF	2023/01/03			124	28 - 138	99	%		
8430010	C13-123678 HexaCDD	2023/01/03			109	28 - 130	86	%		
8430010	C13-123678 HexaCDF	2023/01/03			102	26 - 123	86	%		
8430010	C13-12378 PentaCDD	2023/01/03			80	25 - 181	64	%		
8430010	C13-12378 PentaCDF	2023/01/03			85	24 - 185	67	%		
8430010	C13-123789 HexaCDF	2023/01/03			101	29 - 147	88	%		
8430010	C13-234678 HexaCDF	2023/01/03			118	28 - 136	95	%		
8430010	C13-23478 PentaCDF	2023/01/03			95	21 - 178	72	%		
8430010	C13-2378 TetraCDD	2023/01/03			71	25 - 164	63	%		
8430010	C13-2378 TetraCDF	2023/01/03			116	24 - 169	86	%		
8430010	C13-OCDD	2023/01/03			117	17 - 157	99	%		
8401283	pH	2022/12/14			102	98 - 103			0.13	N/A
8402452	WAD Cyanide (Free)	2022/12/14	90	80 - 120	101	80 - 120	<1	ug/L	NC	20
8402472	Dissolved Antimony (Sb)	2022/12/14	102	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
8402472	Dissolved Arsenic (As)	2022/12/14	103	80 - 120	99	80 - 120	<1.0	ug/L	7.2	20
8402472	Dissolved Barium (Ba)	2022/12/14	99	80 - 120	97	80 - 120	<2.0	ug/L	2.9	20

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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
8402472	Dissolved Beryllium (Be)	2022/12/14	100	80 - 120	98	80 - 120	<0.40	ug/L	NC	20
8402472	Dissolved Boron (B)	2022/12/14	99	80 - 120	99	80 - 120	<10	ug/L	0.45	20
8402472	Dissolved Cadmium (Cd)	2022/12/14	100	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
8402472	Dissolved Chromium (Cr)	2022/12/14	97	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
8402472	Dissolved Cobalt (Co)	2022/12/14	101	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
8402472	Dissolved Copper (Cu)	2022/12/14	101	80 - 120	101	80 - 120	<0.90	ug/L	3.6	20
8402472	Dissolved Lead (Pb)	2022/12/14	97	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
8402472	Dissolved Molybdenum (Mo)	2022/12/14	99	80 - 120	96	80 - 120	<0.50	ug/L	1.0	20
8402472	Dissolved Nickel (Ni)	2022/12/14	97	80 - 120	97	80 - 120	<1.0	ug/L	9.2	20
8402472	Dissolved Selenium (Se)	2022/12/14	98	80 - 120	98	80 - 120	<2.0	ug/L	NC	20
8402472	Dissolved Silver (Ag)	2022/12/14	93	80 - 120	95	80 - 120	<0.090	ug/L	NC	20
8402472	Dissolved Thallium (Tl)	2022/12/14	99	80 - 120	103	80 - 120	<0.050	ug/L	NC	20
8402472	Dissolved Uranium (U)	2022/12/14	98	80 - 120	100	80 - 120	<0.10	ug/L	1.0	20
8402472	Dissolved Vanadium (V)	2022/12/14	100	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
8402472	Dissolved Zinc (Zn)	2022/12/14	100	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
8402547	Chromium (VI)	2022/12/14	95	80 - 120	100	80 - 120	<0.50	ug/L	1.0	20
8402596	F2 (C10-C16 Hydrocarbons)	2022/12/14	113	60 - 130	89	60 - 130	<100	ug/L	NC	30
8402596	F3 (C16-C34 Hydrocarbons)	2022/12/14	108	60 - 130	99	60 - 130	<200	ug/L	7.8	30
8402596	F4 (C34-C50 Hydrocarbons)	2022/12/14	101	60 - 130	92	60 - 130	<200	ug/L	NC	30
8403070	1,1,1,2-Tetrachloroethane	2022/12/16	93	70 - 130	97	70 - 130	<0.50	ug/L	NC	30
8403070	1,1,1-Trichloroethane	2022/12/16	NC	70 - 130	93	70 - 130	<0.20	ug/L	1.2	30
8403070	1,1,2,2-Tetrachloroethane	2022/12/16	95	70 - 130	95	70 - 130	<0.40	ug/L	NC	30
8403070	1,1,2-Trichloroethane	2022/12/16	98	70 - 130	99	70 - 130	<0.40	ug/L	NC	30
8403070	1,1-Dichloroethane	2022/12/16	NC	70 - 130	86	70 - 130	<0.20	ug/L	1.0	30
8403070	1,1-Dichloroethylene	2022/12/16	NC	70 - 130	90	70 - 130	<0.20	ug/L	0.39	30
8403070	1,2-Dichlorobenzene	2022/12/16	95	70 - 130	100	70 - 130	<0.40	ug/L	NC	30
8403070	1,2-Dichloroethane	2022/12/16	90	70 - 130	87	70 - 130	<0.49	ug/L	NC	30
8403070	1,2-Dichloropropane	2022/12/16	90	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
8403070	1,3-Dichlorobenzene	2022/12/16	95	70 - 130	101	70 - 130	<0.40	ug/L	NC	30
8403070	1,4-Dichlorobenzene	2022/12/16	114	70 - 130	121	70 - 130	<0.40	ug/L	NC	30
8403070	Acetone (2-Propanone)	2022/12/16	114	60 - 140	99	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
8403070	Benzene	2022/12/16	86	70 - 130	85	70 - 130	<0.20	ug/L	NC	30
8403070	Bromodichloromethane	2022/12/16	93	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8403070	Bromoform	2022/12/16	96	70 - 130	97	70 - 130	<1.0	ug/L	NC	30
8403070	Bromomethane	2022/12/16	100	60 - 140	90	60 - 140	<0.50	ug/L	NC	30
8403070	Carbon Tetrachloride	2022/12/16	91	70 - 130	90	70 - 130	<0.19	ug/L	NC	30
8403070	Chlorobenzene	2022/12/16	95	70 - 130	99	70 - 130	<0.20	ug/L	NC	30
8403070	Chloroform	2022/12/16	94	70 - 130	89	70 - 130	<0.20	ug/L	2.4	30
8403070	cis-1,2-Dichloroethylene	2022/12/16	103	70 - 130	95	70 - 130	<0.50	ug/L	0.45	30
8403070	cis-1,3-Dichloropropene	2022/12/16	101	70 - 130	94	70 - 130	<0.30	ug/L	NC	30
8403070	Dibromochloromethane	2022/12/16	94	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
8403070	Dichlorodifluoromethane (FREON 12)	2022/12/16	96	60 - 140	93	60 - 140	<1.0	ug/L	NC	30
8403070	Ethylbenzene	2022/12/16	88	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
8403070	Ethylene Dibromide	2022/12/16	97	70 - 130	96	70 - 130	<0.19	ug/L	NC	30
8403070	Hexane	2022/12/16	99	70 - 130	96	70 - 130	<1.0	ug/L	NC	30
8403070	Methyl Ethyl Ketone (2-Butanone)	2022/12/16	104	60 - 140	92	60 - 140	<10	ug/L	NC	30
8403070	Methyl Isobutyl Ketone	2022/12/16	88	70 - 130	86	70 - 130	<5.0	ug/L	NC	30
8403070	Methyl t-butyl ether (MTBE)	2022/12/16	98	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
8403070	Methylene Chloride(Dichloromethane)	2022/12/16	111	70 - 130	102	70 - 130	<2.0	ug/L	NC	30
8403070	o-Xylene	2022/12/16	85	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
8403070	p+m-Xylene	2022/12/16	94	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
8403070	Styrene	2022/12/16	84	70 - 130	90	70 - 130	<0.40	ug/L	NC	30
8403070	Tetrachloroethylene	2022/12/16	86	70 - 130	91	70 - 130	<0.20	ug/L	3.9	30
8403070	Toluene	2022/12/16	92	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
8403070	Total Xylenes	2022/12/16					<0.20	ug/L	NC	30
8403070	trans-1,2-Dichloroethylene	2022/12/16	97	70 - 130	92	70 - 130	<0.50	ug/L	0.47	30
8403070	trans-1,3-Dichloropropene	2022/12/16	115	70 - 130	103	70 - 130	<0.40	ug/L	NC	30
8403070	Trichloroethylene	2022/12/16	97	70 - 130	98	70 - 130	<0.20	ug/L	0.29	30
8403070	Trichlorofluoromethane (FREON 11)	2022/12/16	94	70 - 130	90	70 - 130	<0.50	ug/L	NC	30
8403070	Vinyl Chloride	2022/12/16	87	70 - 130	82	70 - 130	<0.20	ug/L	NC	30
8403664	1-Methylnaphthalene	2022/12/15	81	50 - 130	74	50 - 130	<0.050	ug/L	NC	30
8403664	2-Methylnaphthalene	2022/12/15	76	50 - 130	67	50 - 130	<0.050	ug/L	NC	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
8403664	Acenaphthene	2022/12/15	87	50 - 130	82	50 - 130	<0.050	ug/L	NC	30
8403664	Acenaphthylene	2022/12/15	81	50 - 130	74	50 - 130	<0.050	ug/L	NC	30
8403664	Anthracene	2022/12/15	87	50 - 130	82	50 - 130	<0.050	ug/L	NC	30
8403664	Benzo(a)anthracene	2022/12/15	92	50 - 130	82	50 - 130	<0.050	ug/L	NC	30
8403664	Benzo(a)pyrene	2022/12/15	88	50 - 130	81	50 - 130	<0.0090	ug/L	NC	30
8403664	Benzo(b/j)fluoranthene	2022/12/15	86	50 - 130	79	50 - 130	<0.050	ug/L	NC	30
8403664	Benzo(g,h,i)perylene	2022/12/15	95	50 - 130	90	50 - 130	<0.050	ug/L	NC	30
8403664	Benzo(k)fluoranthene	2022/12/15	81	50 - 130	79	50 - 130	<0.050	ug/L	NC	30
8403664	Chrysene	2022/12/15	87	50 - 130	81	50 - 130	<0.050	ug/L	NC	30
8403664	Dibenzo(a,h)anthracene	2022/12/15	89	50 - 130	84	50 - 130	<0.050	ug/L	NC	30
8403664	Fluoranthene	2022/12/15	95	50 - 130	89	50 - 130	<0.050	ug/L	NC	30
8403664	Fluorene	2022/12/15	89	50 - 130	83	50 - 130	<0.050	ug/L	NC	30
8403664	Indeno(1,2,3-cd)pyrene	2022/12/15	92	50 - 130	86	50 - 130	<0.050	ug/L	NC	30
8403664	Naphthalene	2022/12/15	76	50 - 130	70	50 - 130	<0.050	ug/L	NC	30
8403664	Phenanthrene	2022/12/15	87	50 - 130	80	50 - 130	<0.030	ug/L	NC	30
8403664	Pyrene	2022/12/15	91	50 - 130	86	50 - 130	<0.050	ug/L	NC	30
8407677	Mercury (Hg)	2022/12/16	104	75 - 125	103	80 - 120	<0.10	ug/L	NC	20
8407730	1,1,1,2-Tetrachloroethane	2022/12/19	94	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
8407730	1,1,1-Trichloroethane	2022/12/19	94	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
8407730	1,1,2,2-Tetrachloroethane	2022/12/19	94	70 - 130	87	70 - 130	<0.50	ug/L	NC	30
8407730	1,1,2-Trichloroethane	2022/12/19	95	70 - 130	89	70 - 130	<0.50	ug/L	NC	30
8407730	1,1-Dichloroethane	2022/12/19	89	70 - 130	89	70 - 130	<0.20	ug/L	NC	30
8407730	1,1-Dichloroethylene	2022/12/19	92	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
8407730	1,2-Dichlorobenzene	2022/12/19	98	70 - 130	96	70 - 130	<0.50	ug/L	NC	30
8407730	1,2-Dichloroethane	2022/12/19	91	70 - 130	86	70 - 130	<0.50	ug/L	NC	30
8407730	1,2-Dichloropropane	2022/12/19	94	70 - 130	91	70 - 130	<0.20	ug/L	NC	30
8407730	1,3-Dichlorobenzene	2022/12/19	102	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
8407730	1,4-Dichlorobenzene	2022/12/19	113	70 - 130	113	70 - 130	<0.50	ug/L	NC	30
8407730	Acetone (2-Propanone)	2022/12/19	101	60 - 140	91	60 - 140	<10	ug/L	NC	30
8407730	Benzene	2022/12/19	89	70 - 130	87	70 - 130	<0.17	ug/L	NC	30
8407730	Bromodichloromethane	2022/12/19	96	70 - 130	92	70 - 130	<0.50	ug/L	NC	30

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8407730	Bromoform	2022/12/19	95	70 - 130	89	70 - 130	<1.0	ug/L	NC	30
8407730	Bromomethane	2022/12/19	93	60 - 140	90	60 - 140	<0.50	ug/L	NC	30
8407730	Carbon Tetrachloride	2022/12/19	92	70 - 130	93	70 - 130	<0.20	ug/L	NC	30
8407730	Chlorobenzene	2022/12/19	97	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
8407730	Chloroform	2022/12/19	92	70 - 130	90	70 - 130	<0.20	ug/L	NC	30
8407730	cis-1,2-Dichloroethylene	2022/12/19	96	70 - 130	94	70 - 130	<0.50	ug/L	NC	30
8407730	cis-1,3-Dichloropropene	2022/12/19	97	70 - 130	93	70 - 130	<0.30	ug/L	NC	30
8407730	Dibromochloromethane	2022/12/19	93	70 - 130	89	70 - 130	<0.50	ug/L	NC	30
8407730	Dichlorodifluoromethane (FREON 12)	2022/12/19	105	60 - 140	107	60 - 140	<1.0	ug/L	NC	30
8407730	Ethylbenzene	2022/12/19	92	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
8407730	Ethylene Dibromide	2022/12/19	94	70 - 130	89	70 - 130	<0.20	ug/L	NC	30
8407730	F1 (C6-C10) - BTEX	2022/12/19					<25	ug/L	NC	30
8407730	F1 (C6-C10)	2022/12/19	94	60 - 140	95	60 - 140	<25	ug/L	NC	30
8407730	Hexane	2022/12/19	94	70 - 130	99	70 - 130	<1.0	ug/L	NC	30
8407730	Methyl Ethyl Ketone (2-Butanone)	2022/12/19	111	60 - 140	97	60 - 140	<10	ug/L	NC	30
8407730	Methyl Isobutyl Ketone	2022/12/19	85	70 - 130	78	70 - 130	<5.0	ug/L	NC	30
8407730	Methyl t-butyl ether (MTBE)	2022/12/19	94	70 - 130	91	70 - 130	<0.50	ug/L	NC	30
8407730	Methylene Chloride(Dichloromethane)	2022/12/19	94	70 - 130	90	70 - 130	<2.0	ug/L	NC	30
8407730	o-Xylene	2022/12/19	93	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
8407730	p+m-Xylene	2022/12/19	97	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
8407730	Styrene	2022/12/19	85	70 - 130	87	70 - 130	<0.50	ug/L	NC	30
8407730	Tetrachloroethylene	2022/12/19	87	70 - 130	89	70 - 130	<0.20	ug/L	NC	30
8407730	Toluene	2022/12/19	91	70 - 130	92	70 - 130	<0.20	ug/L	0.26	30
8407730	Total Xylenes	2022/12/19					<0.20	ug/L	NC	30
8407730	trans-1,2-Dichloroethylene	2022/12/19	93	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
8407730	trans-1,3-Dichloropropene	2022/12/19	99	70 - 130	95	70 - 130	<0.40	ug/L	NC	30
8407730	Trichloroethylene	2022/12/19	100	70 - 130	99	70 - 130	<0.20	ug/L	NC	30
8407730	Trichlorofluoromethane (FREON 11)	2022/12/19	90	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8407730	Vinyl Chloride	2022/12/19	84	70 - 130	86	70 - 130	<0.20	ug/L	NC	30
8430010	1,2,3,4,6,7,8-Hepta CDD	2023/01/03			112	70 - 140	<1.13, EDL=1.13	pg/L	1.8	25
8430010	1,2,3,4,6,7,8-Hepta CDF	2023/01/03			105	82 - 122	<1.06, EDL=1.06	pg/L	1.9	25

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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
8430010	1,2,3,4,7,8,9-Hepta CDF	2023/01/03			99	78 - 138	<1.26, EDL=1.26	pg/L	0	25
8430010	1,2,3,4,7,8-Hexa CDD	2023/01/03			110	70 - 164	<1.42, EDL=1.42	pg/L	0.91	25
8430010	1,2,3,4,7,8-Hexa CDF	2023/01/03			102	72 - 134	<1.20, EDL=1.20	pg/L	4.8	25
8430010	1,2,3,6,7,8-Hexa CDD	2023/01/03			110	76 - 134	<1.34, EDL=1.34	pg/L	0	25
8430010	1,2,3,6,7,8-Hexa CDF	2023/01/03			107	84 - 130	<1.12, EDL=1.12	pg/L	0	25
8430010	1,2,3,7,8,9-Hexa CDD	2023/01/03			97	64 - 162	<1.33, EDL=1.33	pg/L	9.8	25
8430010	1,2,3,7,8,9-Hexa CDF	2023/01/03			111	78 - 130	<1.38, EDL=1.38	pg/L	4.6	25
8430010	1,2,3,7,8-Penta CDD	2023/01/03			110	25 - 181	<1.31, EDL=1.31	pg/L	1.8	25
8430010	1,2,3,7,8-Penta CDF	2023/01/03			114	80 - 134	<1.38, EDL=1.38	pg/L	0	25
8430010	2,3,4,6,7,8-Hexa CDF	2023/01/03			95	70 - 156	<1.05, EDL=1.05	pg/L	3.1	25
8430010	2,3,4,7,8-Penta CDF	2023/01/03			110	68 - 160	<1.19, EDL=1.19	pg/L	3.6	25
8430010	2,3,7,8-Tetra CDD	2023/01/03			119	67 - 158	<1.38, EDL=1.38	pg/L	0.84	25
8430010	2,3,7,8-Tetra CDF	2023/01/03			94	75 - 158	<1.16, EDL=1.16	pg/L	3.1	25
8430010	Octa CDD	2023/01/03			116	78 - 144	2.42, EDL=1.20	pg/L	2.6	25
8430010	Octa CDF	2023/01/03			125	63 - 170	<1.23, EDL=1.23	pg/L	3.1	25
8430010	Total Hepta CDD	2023/01/03					<1.13, EDL=1.13	pg/L		
8430010	Total Hepta CDF	2023/01/03					<1.15, EDL=1.15	pg/L		
8430010	Total Hexa CDD	2023/01/03					<1.36, EDL=1.36	pg/L		
8430010	Total Hexa CDF	2023/01/03					<1.18, EDL=1.18	pg/L		
8430010	Total Penta CDD	2023/01/03					<1.31, EDL=1.31	pg/L		
8430010	Total Penta CDF	2023/01/03					<1.28, EDL=1.28	pg/L		
8430010	Total Tetra CDD	2023/01/03					<1.38, EDL=1.38	pg/L		

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			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8430010	Total Tetra CDF	2023/01/03					<1.16, EDL=1.16	pg/L		

N/A = Not Applicable

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

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

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

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

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

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

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

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Bureau Veritas Job #: C2AE597
Report Date: 2023/01/18

Soil Engineers Ltd
Client Project #: 2203-E020
Sampler Initials: ASH

VALIDATION SIGNATURE PAGE

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

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS and SVOC

Anastassia Hamanov, Scientific Specialist

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

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Page of

CHAIN OF CUSTODY RECORD

12-Dec-22 16:11
Antonella Brasil
C2AE597
SWP ENV-1582

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name	#00497 Soil Engineers Ltd	Company Name		Quotation #	C20391
Attention	Ram Sah	Attention	SAME	P.O. #	
Address	90 West Beaver Creek Road Unit 100	Address		Project	2203-E020
	Richmond Hill ON L4B 1E7			Project Name	
Tel	(416) 754-8515 Ext: 1314 Fax (416) 754-8516	Tel	Fax	Site #	
Email	ram.sah@soilengineersltd.com	Email		Sampled By	

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

Regulation 153 (2011)
- [x] Table 1 [ ] Res/Park [ ] Medium/Fine
- [ ] Table 2 [ ] Ind/Comm [ ] Coarse
- [ ] Table 3 [x] Agri/Other [ ] For RSC
- [ ] Table ___

Other Regulations
- [ ] CCME [ ] Sanitary Sewer Bylaw
- [ ] Reg 558 [ ] Storm Sewer Bylaw
- [ ] MISA Municipality ___
- [ ] PWQO [ ] Reg 406 Table ___
- [ ] Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required
Please provide advance notice for rush projects

Regular (Standard) TAT: [X]
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ [ ]
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 PHCs, BTEX/F1-F4	O.Reg 153 VOCs by HS (Water)	Dioxins/Furans in Water (1613B)	O.Reg 153 PAHs	O.Reg 153 Metals & Inorganics Pkg (WH)	pH	TCLP metals, Hg, Cr(VI), CN				# of Bottles	Comments
1		BH/MW3	Dec 09		W	✓	✓	✓	✓	✓		✓	✓	✓				
2		DUP W1	Dec 09		W			✓										
3		Tripblank	Dec 09					✓										
4																		
5																		
6																		
7																		
8																		
9																		
10																		

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
[illegible]	22/12/09		[illegible]	2022/12/12	16:11	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	0 1 1 2	Present		
		Intact	✓	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS. Drive

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

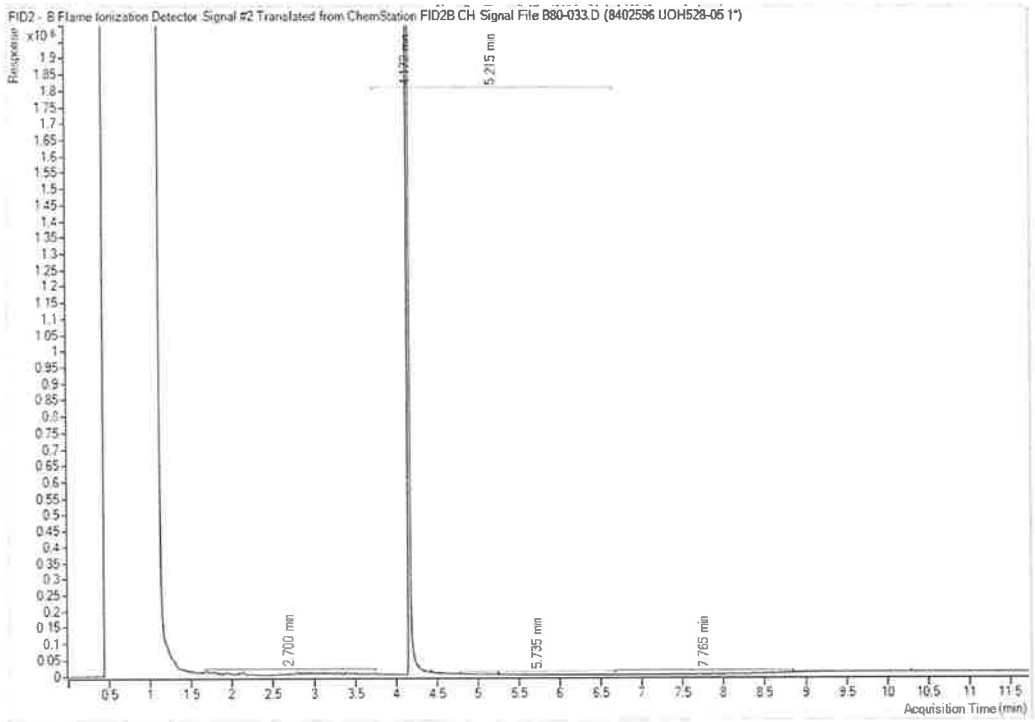
White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Job #: C2AE597
Report Date: 2023/01/18
Bureau Veritas Sample: UOH528

Soil Engineers Ltd
Client Project #: 2203-E020
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.