Phase Two Environmental Site Assessment

50 Saunders Street

Collingwood, Ontario

Prepared For:

Lotco II Limited

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Kitchener, Ontario

N2P 2N4

DS Project No : 20-052-400

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Executive Summary

DS Consultants Ltd. (DS) was retained by Lotco II Limited (the "Client") to conduct a Phase Two Environmental Site Assessment (ESA) of the Property located at 50 Saunders Street, Collingwood, Ontario, herein referred to as the "Phase Two Property". It is DS' understanding that this Phase Two ESA has been requested in support of design, re-zoning, and Site Plan Approval (SPA) to satisfy the requirements of the Town of Collingwood with respect to the proposed development of the vacant Property. It is further understood that the proposed development will consist of a residential subdivision.

It is understood that the intended future property use (residential) is not considered to be a more sensitive property use as defined under O.Reg. 153/04 (as amended) as there is no indication that the Property was developed or used for any purpose previously. Therefore the filing of a Record of Site Condition (RSC) with the Ontario Ministry of Environment, Conservation and Parks (MECP) is not mandated under O.Reg. 153/04. However the Phase Two ESA was conducted in general accordance with the requirements, methodology and practices for a Phase Two ESA as described in Ontario Regulation 153/04 (as amended).

The Phase Two Property is a 4.10 hectare (10.13 acre) parcel of land situated within a mixed agricultural, residential, and institutional neighbourhood in the Town of Collingwood, Ontario. The Phase Two Property is located upon the northeast corner of the intersection of Saunders Street and Poplar Sideroad, it appeared to be vacant and in a natural undisturbed condition at the time of this investigation.

The Phase One ESA completed in 2019 indicated that there is no indication that the property has ever been developed and was vacant. It is noted that the Property appeared to remain vacant up until the last work completed at the Site during the Phase Two ESA on March 11, 2020.

Based on the findings of the Phase One ESA it was concluded that a Phase Two ESA was warranted in order to assess the soil conditions on the Phase Two Property. The contaminants of potential concern identified for APEC-1 include Metals, PHCs (F1-F4), BTEX, PAHs in soil. Groundwater was not identified as a media of concern based on the findings of the Phase One ESA.

The Phase Two ESA involved the advancement of three (3) boreholes, which was completed on March 11, 2020. The boreholes were advanced to depths of 1.2 to 1.5 metres below ground surface (mbgs) by DS personnel. The borehole locations were determined based on the findings of the Phase One ESA and were placed in the western portion of the Phase Two

Property to investigate APEC-1. Soil samples were collected and submitted for analysis of all PCOCs, including: metals; Petroleum Hydrocarbons (PHCs (F1 to F4)); Benzene, Toluene, Ethylbenzene and Xylene (BTEX), and Polyaromatic Hydrocarbons (PAHs).

The Phase Two Property is located within 30 m of two water bodies – which are unnamed tributaries of the Pretty River, located approximately 20 m south of the Phase Two Property. Based on this consideration the soil analytical results were compared to the "Table 8 SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition for Residential/Parkland/Institutional Use" provided in the MECP document entitled, "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*" dated April 15, 2011 *(*Table 8 Standards*)* for coarse-textured soils and residential/parkland/institutional/industrial/commercial/community property use.

Based on the findings of the Phase Two ESA, DS presents the following conclusions:

- The lithology encountered consisted of a layer of topsoil approximately 250 to 300 mm in thickness , underlain by silty sand which extended to the termination depth in all three of the boreholes advanced. Bedrock was not encountered within any of the boreholes, which were terminated at depths ranging between 1.2 to 1.5 mbgs. Soils were noted as saturated from between 0.3 to 0.8 mbgs in all three boreholes advanced;
- All of the chemical analyses for each parameter group met the MECP Table 8 SCS, and also the QA/QC requirements; and,
- On the basis of the above, no further soil investigation is recommended at this time.

It is the opinion of the QP_{ESA} that the applicable SCS for the soil at the Phase Two Property have been met as of the Certification Date of March 11, 2020. No further sub-surface investigation is required regarding the environmental quality of the soil at the Phase Two Property. Based on the above results, the Phase Two Property should be considered as suitable for the proposed residential development from an environmental assessment perspective.

Table of Contents

TABLES

Enclosures

Tables

FIGURES

APPENDICES

1.0 Introduction

DS Consultants Ltd. (DS) was retained by Lotco II Limited to complete a Phase Two Environmental Site Assessment (ESA) of the Property located at 50 Saunders Street, Collingwood, Ontario, herein referred to as the "Phase Two Property" or "Site". It is DS' understanding that this Phase Two ESA has been requested in support of design, re-zoning, Site Plan Approval (SPA) and to satisfy the requirements of the Town of Collingwood with respect to the proposed development of the vacant Property. It is further understood that the proposed development will consist of a residential subdivision.

It is understood that the intended future property use (residential) is not considered to be a more sensitive property use as defined under O.Reg. 153/04 (as amended) as there is no indication that the Property was developed or used for any purpose previously. Therefore the filing of a Record of Site Condition (RSC) with the Ontario Ministry of Environment, Conservation and Parks (MECP) is not mandated under O.Reg. 153/04. However the Phase Two ESA was conducted in general accordance with the requirements, methodology and practices for a Phase Two ESA as described in Ontario Regulation 153/04 (as amended).

The objective of this Phase Two ESA was to confirm whether contaminant(s) are present, and at what concentration(s), on the Phase Two Property, as related to the Areas of Potential Environmental Concern (APEC) identified in the Phase One ESA.

1.1 Site Description

The Phase Two Property is a 4.10 hectare (10.13 acre) parcel of land situated within a mixed agricultural, residential, and institutional neighbourhood in the Town of Collingwood, Ontario. The Phase Two Property is located upon the northeast corner of the intersection of Saunders Street and Poplar Sideroad, it appeared to be vacant and in a natural undisturbed condition at the time of this investigation. A Site Location Plan is provided in Figure 1.

For the purposes of this report, Poplar Sideroad is assumed to be aligned in an east-west orientation, and Saunders Street in a north-south orientation. A Plan of Survey for the Site dated June 22, 2016 was prepared by James A. Nicol of J.D. Barnes Limited, an Ontario Land Surveyor (refer to *Appendix A*).

The Property was vacant and predominantly covered in vegetation at the time of this assessment. A Site Plan depicting the orientation of the buildings on-site is provided in Figure 2.

Additional details regarding the Phase Two Property are provided in the table below.

Table 1-1:Phase Two Property Information

Criteria	Information	Source
Legal Description	Part Lots R1, R2 and R3, Part A, Plan R600 Part Lot R1 Plan 446 Nottawasaga, Part Lot R2 Plan 446 Nottawasaga	Land Registry Office
Property Identification Number (PIN)	58261-1315	Land Registry Office
Current Site Occupants	Vacant	Client
Site Area	4.10 hectares (10.13 acres)	County of Simcoe Interactive Map

1.2 Property Ownership

The ownership details for the Phase Two Property are provided in the table below.

Table 1-2: Phase Two Property Ownership

Property Owner	Address	Contact
Lotco II Limited	Part Lots R1, R2 and R3, Part A, Plan R600 Part Lot R1 Plan 446 Nottawasaga, Part Lot R2 Plan 446 Nottawasaga	Al Allendorf Lotco II Limited 24 Executive Place Kitchener, ON, N2P 2N4 Email: al@bostgroup.ca

1.3 Current and Proposed Future Use

There was no indication of the Site being developed based on the records reviewed as part of the Phase One ESA. The Property was also noted as vacant for the duration of this Phase Two ESA.

It is DS' understanding that the Client intends to develop the Site for residential use.

1.4 Applicable Site Condition Standards

The applicable Site Condition Standards (SCS) for the Phase Two Property are considered by the Qualified Person (QP) to be the Table 8 SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition for Residential/Parkland/Institutional Use and Industrial/Commercial/Community use as contained in the April 15, 2011 Ontario Ministry of Environment, Conservation and Parks (MECP) document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", herein referred to as the "Table 8 SCS".

The selection of the Table 8 SCS is considered appropriate based on the following rationale:

- The Town of Collingwood obtains its potable water from Lake Huron/Georgian Bay, and may also rely on groundwater as a potable water source;
- The Site is not considered to be environmentally sensitive, as defined under O.Reg. 153/04 (as amended);
- The proposed future use of the Phase Two Property will be residential;
- The Site is located within 30 m of two water bodies, which are an unnamed tributaries of the Pretty River – located approximately 20 m south of the Phase Two Property;
- The pH of the soils analyzed during this Phase Two ESA were within the accepted range specified under O.Reg. 153/04 (as amended); and
- Based on a review of MECP Well Records, the bedrock in the Phase Two Study Area is anticipated to be encountered at an approximate depth range of 8.8 to 12.8 metres below ground surface (mbgs), and is not anticipated to be present within 2 metres of the ground surface.

2.0 Background Information

2.1 Physical Setting

2.1.1 Water Bodies and Areas of Natural Significance

Two unnamed tributaries of the Pretty River are the closest bodies of water to the Phase Two Property, located approximately 20 m south of the Site. Although the Ministry of Natural

Resources and Forestry identifies the tributaries as streams, the water bodies have been informally canalized, and neither is identified as an area of natural or scientific significance. The Phase One ESA did not identify any areas of natural or scientific interest within the Phase Two Property, based on the Natural Heritage Areas database published by the Ministry of Natural Resources.

2.1.2 Topography and Surface Water Draining Features

The Phase Two Property is located in an urban setting, at an elevation of 200 metres above sea level (masl). The topography of the Phase Two Property is slightly sloped to the north, towards Georgian Bay, located 2.82 km north. The neighbouring properties are generally aligned with a similar elevation profile, and the topography in the vicinity of the Phase Two Property generally slopes to the north. There are no drainage features (e.g. ditches, swales, etc.) present on the Phase Two Property. However, two informally canalized tributaries of the Pretty River are noted as present to the south and east of the property, with flow directed towards the north-east, alongside the boundaries of several residential properties. Surface water flow associated with precipitation events on the Phase Two Property is anticipated to largely attenuate into the natural vegetation on the Property, with minor drainage onto the athletic grounds of a school located immediately to the north.

2.2 Past Investigations

2.2.1 Previous Report Summary

DS reviewed the following environmental reports prepared for the Property. The reports were provided by the client to DS.

- *"Geotechnical Investigation Proposed Residential Subdivision, 50 Saunders Street, Collingwood, Ontario",* prepared for Venetian Group, prepared by Peto MacCallum Ltd. Consulting Engineers (PML), dated July 2017 (2017 PML Geotechnical Investigation).
- *"50 Saunders Road, Collingwood, Groundwater Monitoring Summary"*, letter report prepared for Ms. Helga Recek, prepared by C.C. Tatham & Associates Ltd., Consulting Engineers (CCTA), dated December 10, 2018 (2018 CCTA).

This report was reviewed in order to asses for the presence of known or suspected PCAs and APECs, and to determine if there are known soil and/or groundwater impacts on the Phase One Property.

2017 PML Geotechnical Investigation

PML conducted a geotechnical investigation of the Phase One Property in 2017 in order to investigate the subsurface conditions at the site. The investigation involved the advancement of six (6) boreholes to a maximum depth of 5.0 meters below ground surface (mbgs). Groundwater monitoring wells were installed in three (3) of the boreholes advanced on-Site.

The subsurface conditions consisted of a 150 to 300 mm thick layer of sandy topsoil, underlain by a sand layer that extended 1.4 to 2.9 mbgs. This was underlain by a layered clay and silt layer that extended to borehole termination depth. Groundwater levels ranged between 1.1 and 1.2 mbgs.

2018 CCTA Groundwater Monitoring Letter Report

CCTA conducted groundwater level monitoring of three wells located on the Phase Two Property on a weekly basis from February to June 2018, and from September to December 2018. Peak groundwater levels were measured in February and April at a maximum of 197.01 masl. The lowest groundwater levels were measured in October at a minimum of 194.50 masl.

2.2.2 Use of Previous Analytical Results

Not applicable – no previous analytical results were available for review.

3.0 Scope of the Investigation

The scope of the Phase Two ESA was to investigate the portions of the Site determined in the Phase One ESA to be Areas of Potential Environmental Concern. This Phase Two ESA was conducted in general accordance with O.Reg. 153/04 (as amended). The scope of the investigation including the subsurface investigation, sampling, and laboratory analysis was based on the findings of the Phase One ESA and was limited to the portions of the site which were accessible.

3.1 Overview of Site Investigation

The following tasks were completed as part of the Phase Two ESA:

- Preparation of a Health and Safety Plan to ensure that all work was executed safely;
- Clearance of public and private underground utility services prior to commencement of subsurface investigative operations;
- Preparation of a Sampling and Analysis Plan (SAP);
- Retention of a MECP licenced driller to advance a total of three (3) boreholes on the Phase Two Property, to depths ranging between 1.2 to 1.5 mbgs. None of the boreholes were instrumented with groundwater monitoring wells upon completion.

The soil lithology was logged during drilling, and representative soil samples were collected at regular intervals. The soil samples were screened for organic vapours using a RKI Eagle 2 MultiGas Detector, and examined for visual and olfactory indications of soil impacts;

- Submitted "worst case" soil samples collected from the boreholes for laboratory analysis of relevant contaminants of potential concern (COPCs) as identified in the Phase One ESA;
- Conducted groundwater level measurements in the monitoring wells in order to determine the groundwater elevation, and to establish the local groundwater flow direction;
- Surveyed all monitoring wells to a geodetic benchmark;
- Developed and purged all monitoring wells prior to sampling. Groundwater samples were collected for all COPCs identified in the Phase One ESA;
- Compared all soil and groundwater analytical data to the applicable MECP SCS; and
- Prepared a Phase Two ESA Report in general accordance with O.Reg. 153/04 (as amended).

3.2 Media Investigated

3.2.1 Rationale for Inclusion or Exclusion of Media

Table 3-1: Rationale of Sampling Media

Media	Included or Excluded	Rationale
Soil	Included	Soil was identified as a media of potential impact in the Phase One ESA, based on the historical operations conducted on-Site.
Groundwater	Excluded	Groundwater was not identified as a media of potential impact in the Phase One ESA.
Sediment	Excluded	Sediment is not present on the Phase Two Property.
Surface Water	Excluded	Surface water is not present on the Phase Two Property.

3.2.2 Overview of Field Investigation of Media

Table 3-2: Field Investigation of Media

Media	Methodology of Investigation
Soil	A total of three (3) boreholes were advanced on the Phase Two Property, to a maximum depth of 1.5 mbgs. Soil samples were collected and submitted for analysis of all relevant PCOCs.
Groundwater	Groundwater monitoring was not conducted as groundwater was not identified as a media of concern in the Phase One ESA.

3.3 Phase One Conceptual Site Model

A Phase One Conceptual Site Model was developed by DS for the Site located at 50 Saunders Street, Collingwood, Ontario (2019 DS). The Phase One Conceptual Site Model included consideration of the following:

- Any existing buildings and structures;
- Water bodies located in whole, or in part, in the Phase One Study Area;
- Areas of natural significance located in whole, or in part, in the Phase One Study Area;
- Water wells at the Phase One Property or within the Phase One Study Area;
- Roads, including names, within the Phase One Study Area;
- Uses of properties adjacent to the Phase One Property;
- Areas where any PCAs have occurred, including location of any tanks;, and
- Areas of Potential Environmental Concern.

3.3.1 Potentially Contaminating Activity Affecting the Phase One Property

All PCAs identified within the Phase One Study Area are presented on Figure 3B at the end of this report. The PCAs which are considered to contribute to APECs on, in or under the Phase One Property are summarized in the table below:

Table 3-3: Summary of PCAs Contributing to APECs

PCA Item.	PCA Description (Per. Table 2, Schedule D of O.Reg. 153/04)	Description	Contributing to APEC (Y/N)
1	PCA-1: #46 - Rail Yards, Tracks, and Spurs	According to the 1860 County Atlas, Hamilton and Northwestern Railway was historically present along the border of the west adjacent property and the Phase One Property.	Yes – APEC-1 (western portion of Phase Two Property)

3.3.2 Media and Contaminants of Potential Concern

The contaminants of potential concern identified for the APEC presented in Table 3-3 above were identified as: Metals, PHCs (F1-F4), BTEX, PAHs in soil.

3.3.3 Underground Utilities and Contaminant Distribution and Transport

Underground utilities can affect contaminant distribution and transport. Trenches excavated to install utility services, and the associated granular backfill may provide preferential pathways for horizontal contaminant migration in the shallow subsurface.

According to the aerial photographs the Phase One Property has never contained any structures. Underground utilities are not anticipated to present on the Phase One Property. No preferential pathways for contaminant transport on the Phase One Property have been identified at this time.

3.3.4 Additional Geological and Hydrogeological Information

The topography of the Phase One Property is generally flat, with a surface elevation of 200 metres above sea level (masl). The topography within the Phase One Study Area generally slopes to the north, towards the Georgian Bay, located approximately 2.82 km north of the Phase One Property. The shallow groundwater flow direction within the Phase One Study Area is inferred to be north towards the Georgian Bay.

The Site is situated within a beaches and sand plains physiographic region. The surficial geology within the Phase One Study area is described as “coarse-textured glaciolacustrine deposits consisting of sand, gravel, minor silt and clay, foreshore and basinal deposits”, and the bedrock is described as “limestone, dolostone, shale, arkose, and sandstone of the Ottawa Group, Simcoe Group, and Shadow Lake Formation”. Based on a review of MECP Well Records, the bedrock in the Phase One Study Area is anticipated to be encountered at an approximate depth range of 8.8 to 12.8 metres below ground surface (mbgs).

3.3.5 Uncertainty and Absence of Information

DS has relied upon information obtained from federal, provincial, municipal, and private databases, in addition to records and summaries provided by EcoLog ERIS when completing the Phase One ESA. All information obtained was reviewed and assessed for consistency, however the conclusions drawn by DS are subject to the nature and accuracy of the records reviewed.

All reasonable inquiries were made to obtain reasonably accessible information, as mandated by O.Reg.153/04 (as amended). All responses to database requests were received prior to completion of this report, with the exception of the MECP FOI request. If the MECP FOI request produces information which may alter the conclusions of this report, an addendum will be provided to the Client. This report reflects the best judgement of DS based on the information available at the time of the investigation.

Information used in this report was evaluated based on proximity to the Phase One Property, anticipated direction of local groundwater flow, and the potential environmental impact on the Phase One Property as a result of potentially contaminating activities.

The QP has determined that the uncertainty does not affect the validity of the Phase One ESA Conceptual Site Model or the conclusions of this report.

3.4 Deviations from Sampling and Analysis Plan

The Phase Two ESA was completed in accordance with the SAP.

3.5 Impediments

DS was granted complete access to the Phase Two Property throughout the course of the investigation. No impediments were encountered.

4.0 Investigation Method

4.1 General

The Phase Two ESA followed the methodology outlined in the following documents:

- Ontario Ministry of the Environment "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario" (December 1996);
- Ontario Ministry of the Environment "Guide for Completing Phase Two Environmental Site Assessments under Ontario regulation 153/04" (June 2011);
- Ontario Ministry of the Environment "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" (July 2011) (Analytical Protocol);

The methods used in the Phase Two ESA investigation did not differ from the associated standard operating procedures.

4.2 Drilling and Excavating

A site visit was conducted prior to drilling in order to identify the borehole locations based on the APECs identified in the Phase One ESA. The selected borehole locations are presented on Figure 4. The borehole locations were cleared of underground public and private utility services prior to commencement of drilling. A summary of the drilling activities is provided in the table below.

Table 4-1: Summary of Drilling Activities

Parameter	Details
Drilling Contractor	DS Consultants Limited.
Drilling Dates	March 11, 2020
Drilling Equipment Used	Handheld Auger Tool
Measures taken to minimize the potential for cross contamination	◆ Soil sampling was conducted using a handheld auger. The auger was brushed clean of soil, washed in municipal water containing phosphate free detergent, rinsed in municipal water, and then rinsed with distilled water between each borehole in order to reduce the potential for cross contamination;

Parameter	Details
	◆ Use of dedicated and disposable nitrile gloves for the handling of soil samples. A new set of gloves was used for each sample.
Sample collection frequency	Samples were collected at a varied frequency of between 0.4 and 1.0 m in each borehole.

4.3 Soil Sampling

Soil samples were collected using a Handheld Auger Tool by DS personnel using dedicated nitrile gloves.

A portion of each sample was placed in a re-sealable plastic bag for field screening, and the remaining portion was placed into laboratory supplied glass sampling jars. Samples intended for VOC and the F1 fraction of petroleum hydrocarbons analysis were collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes and sealed using Teflon lined septa lids. All sample jars were stored in dedicated coolers with ice for storage, pending transport to the analytical laboratory. A formal chain of custody was maintained for all samples submitted to the laboratory.

The subsurface soil conditions were logged by DS personnel at the time of drilling and recorded on field borehole logs. The borehole logs are presented under Appendix C. Additional detail regarding the lithology encountered in the boreholes is presented under Section 6.1.

4.4 Field Screening Measurements

All retrieved soil samples were screened in the field for visual and olfactory observations. No obvious visual or olfactory evidence of potential contamination was noted. No aesthetic impacts (e.g. cinders, slag, hydrocarbon odours) were encountered during this investigation. The soil sample headspace vapour concentrations for all soil samples recovered during the investigation were screened using portable organic vapour testing equipment in accordance with the procedure outlined in the MECP's '*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario'.*

The soil samples were inspected and examined to assess soil type, ground water conditions, and possible chemical contamination by visual and olfactory observations or by organic vapour screening. Samples submitted for chemical analysis were collected from locations judged by the assessor to be most likely to exhibit the highest concentrations of contaminants based on several factors including (i) visual or olfactory observations, (ii)

sample location, depth, and soil type (iii) ground water conditions and headspace reading. A summary of the equipment used for field screening is provided below:

Table 4-2: Field Screening Equipment

Parameter	Details
Make and Model of Field Screening Instrument	RKI Eagle 2, Model 5101-P2
Chemicals the equipment can detect and associated detection limits	VOCs with dynamic range of 0 parts per million (ppm) to 2,000 ppm PHCs with range of 0 to 50, 000 ppm
Precision of the measurements	3 significant figures
Accuracy of the measurements	VOCs: ± 10% display reading + one digit Hydrocarbons: ± 5% display reading + one digit
Calibration reference standards	PID: Isobutylene CGD: Hexane
Procedures for checking calibration of equipment	In-field re-calibration of the CGI was conducted (using the gas standard in accordance with the operator's manual instructions) if the calibration check indicated that the calibration had drifted by more than +/- 10%.

A summary of the soil headspace measurements are provided in the borehole logs, provided under Appendix C.

4.5 Groundwater Monitoring Well Installation

Groundwater monitoring wells were not installed as part of the Phase Two ESA. The Phase One ESA did not identify groundwater as a media of potential environmental concern.

4.6 Groundwater Field Measurement of Water Quality Parameters

Groundwater monitoring wells were not installed as part of the Phase Two ESA.

4.7 Groundwater Sampling

Groundwater monitoring wells were not installed as part of the Phase Two ESA.

4.8 Sediment Sampling

No sediment as defined under O.Reg. 153/04 (as amended) was present on the Phase Two Property at the time of this investigation. Sediment sampling was not conducted as a result.

4.9 Analytical Testing

The soil samples collected were submitted to SGS Canada (SGS) under chain of custody protocols. SGS is an independent laboratory accredited by the Canadian Association for Laboratory Accreditation. SGS conducted the analyses in accordance with the MECP document "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" dated March 9, 2004 (revised on July 1, 2011).

4.10 Residue Management Procedures

4.10.1 Soil Cuttings From Drilling and Excavations

The soil cuttings generated by the borehole drilling program were stored in 205 L drums, and left on-site for disposal by a MECP approved waste-hauler for disposal at a MECP-approved waste management facility.

4.10.2 Water from Well Development and Purging

No groundwater monitoring wells were installed at the Site, thus no water from well development or purging was present.

4.10.3 Fluids from Equipment Cleaning

Excess equipment cleaning fluids were stored in 20-L sealed plastic pails and temporarily stored on site for disposal by a MECP approved waste-hauler for disposal at a MECP-approved waste management facility.

4.11 Elevation Surveying

An elevation survey was not completed for this investigation.

4.12 Quality Assurance and Quality Control Measures

4.12.1 Sample containers, preservation, labelling, handling and custody for samples submitted for laboratory analysis, including any deviations from the SAP

All soil samples were stored in laboratory-supplied sample containers in accordance with the MECP Analytical Protocol. A summary of the preservatives supplied by the laboratory is provided in the table below.

Table 4-3: Summary of Sample Bottle Preservatives

Media	Parameter	Sample Container
Soil	PHCs F1 VOCs	40 mL methanol preserved glass vial with septum lid.

Media	Parameter	Sample Container
	PHCs F2-F4 metals, PAHs	120 mL or 250 mL unpreserved glass jar with Teflon™-lined lid.

Soil samples were collected using dedicated nitrile gloves for each sample. Each sample container was labelled with a unique sample identification, the project number, and the sampling date. All samples were placed in an ice-filled cooler upon completion of sampling, and kept under refrigerated conditions until the time of delivery to the analytical laboratory. A formal chain of custody was maintained for all samples submitted to the laboratory.

4.12.2 Description of equipment cleaning procedures followed during all sampling

Dedicated, disposable nitrile gloves were used for each sampling event to reduce the potential for cross-contamination.

The hand-held auger used to collect the samples was brushed clean of soil, washed in municipal water containing phosphate free detergent, rinsed in municipal water, and then rinsed with distilled water between each borehole in order to reduce the potential for cross contamination.

4.12.3 Description of how the field quality control measures referred to in subsection 3 (3) were carried out

Field duplicate samples were collected at the time of sampling. In accordance with O.Reg. 153/04, one duplicate sample was analyzed per ten samples submitted for analysis.

The field screening device (i.e. RKI Eagle 2) was calibrated prior to use by the supplier. Calibration checks were completed, and re-calibrations were conducted as required.

4.12.4 Description of, and rational for, any deviations from the procedures set out in the quality assurance and quality control program set out in the SAP

There were no deviations from the QA/QC program described in the SAP.

5.0 Review and Evaluation

5.1 Geology

A summary of the subsurface conditions is presented below. Additional details may be found in the borehole logs appended in Appendix C.

A layer of topsoil approximately 250 to 300 mm in thickness was encountered in all of the boreholes advanced. Silty sand was encountered below the topsoil and extended to the termination depth in all three of the boreholes advanced. Bedrock was not encountered within any of the boreholes, which were terminated at depths ranging between 1.2 to 1.5 mbgs.

Table 5-1: Summary of Geologic Units Investigated

Geologic Unit	Inferred Thickness (m)	Properties
Topsoil	0.25 – 0.3	
Silty Sand	0.9 - 1.2	Soils were saturated from between 0.3 to 0.8 mbgs.

Soils were noted as saturated from between 0.3 to 0.8 mbgs in all three boreholes advanced. These data are suggestive of an unconfined aquifer, and are in line with the findings of PML (2017). However, more information would be required to definitively ascertain this and these data should not be relied upon for hydrogeological characterization purposes.

It is also noted that the term “topsoil” used to describe the soil stratigraphy refers generally to the upper layers of soils that have been weathered over time, and does not imply topsoil imported to the Site. No evidence of importation was noted during the classification of any soils, and all appeared to be native to the Site. Additionally, the Phase One ESA did not identify importation of fill to the Site as a PCA.

5.2 Ground Water Elevations and Flow Direction

No groundwater wells were installed or monitored as part of the Phase Two ESA.

5.3 Ground Water Hydraulic Gradients

No groundwater wells were installed or monitored as part of the Phase Two ESA.

5.4 Fine-Medium Soil Texture

Grain size analyses were not conducted for the Phase Two Property, soils were noted to be dominated by presumed coarse textured soils (i.e. silty sand) based on visual observation

only. For the purposes of evaluating the SCS, all soils on the Phase Two Property were considered coarse textured.

5.5 Soil Field Screening

Soil vapour headspace readings were collected at the time of sample collection, the results of which are presented on the borehole logs (Appendix C). The soil vapour headspace readings were collected using a PID (Eagle RKI 2) in methane elimination mode. The hexane headspace vapour concentrations ranged between 30 and 55 ppm. The isobutylene headspace vapour concentrations were all recorded at 0 ppm.

The soil samples were also screened for visual and olfactory indicators of impacts (e.g. staining, odours), however no indictors were observed.

5.6 Soil Quality

The results of the chemical analyses conducted are enclosed at the end of this report (Tables 3 to 5). A visual summary of the location of the sample locations is provided in Figures 4 through 5C. The laboratory certificate of analysis has been provided under Appendix D.

5.6.1 Metals

A total of four (4) samples, including one (1) field duplicate for QA/QC purposes were submitted for analysis of metals. The results of the chemical analyses indicated that all of the samples analysed met the MECP Table 8 SCS.

5.6.2 Petroleum Hydrocarbons

A total of three (3) samples were submitted for analysis of PHCs (incl. BTEX). The results of the chemical analyses indicated that all of the samples analysed met the MECP Table 8 SCS.

5.6.3 Polycyclic Aromatic Hydrocarbons

A total of three (3) samples were submitted for analysis of PAHs. The results of the chemical analyses indicated that all of the samples analysed met the MECP Table 8 SCS.

5.6.4 Commentary on Soil Quality

All of the chemical analyses for each parameter group met the MECP Table 8 SCS.

No evidence of chemical or biological transformations of the parameters analyzed was observed.

On the basis of the above, no further soil investigation is recommended at this time.

5.7 Ground Water Quality

Groundwater was not identified as a media of concern by the Phase One ESA, therefore this media did not form part of the Phase Two ESA.

5.8 Sediment Quality

No sediment was present on the Phase Two Property at the time of the investigation.

5.9 Quality Assurance and Quality Control Results

Collection of soil samples was conducted in general accordance with the MECP *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*. As described in Section 5.12, dedicated equipment was used where possible, and all non-dedicated equipment was decontaminated before and between sampling/boring events. All soil samples were transferred directly into laboratory-supplied containers. The laboratory containers were prepared by the laboratory with suitable preservative, as required. All samples were stored and transported under refrigerated conditions. Chain of custody protocols were maintained from the time of sampling to delivery to the analytical laboratory.

The field QA/QC program involved the collection of field duplicate soil samples. In addition to the controls listed above, the analytical laboratory employed method blanks, internal laboratory duplicates, surrogate spike samples, matrix spike samples, and standard reference materials.

A summary of the field duplicate samples analyzed and an interpretation of the efficacy of the QA/QC program is provided in the table below.

Table 5-2: Summary of QA/QC Results

Sample ID	QA/QC duplicate	Media	Parameter Analyzed	QA/QC Result
BH20-2	GS1 DUP	Soil	Metals	All results were within the analytical protocol criteria for RPD

Based on the interpretation of the laboratory results and the QA/QC program, it is the opinion of the QP that the laboratory analytical data can be relied upon.

All samples were handled in accordance with the MECP Analytical Protocol regarding sample holding time, preservation methods, storage requirements, and type of container.

SGS routinely conducts internal QA/QC analyses in order to satisfy regulatory QA/QC requirements. The results of the SGSQA/QC analyses for the submitted soil samples are summarized in the laboratory Certificate of Analysis provided in Appendix D.

The following comments were provided by SGS on the laboratory Certificates of Analysis. Commentary on the comments has been provided below:

- Laboratory Certificate CA14629-MAR20 R1– Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

A review of the QA/QC sample results indicated that no issues were identified with respect to both the field collection methodology and the laboratory reporting. It is the opinion of the QP that the analytical data obtained are representative of the soil conditions at the Phase Two Property for the purpose of assessing whether the soil at the Phase Property meets the applicable MECP SCS.

5.10 Phase Two Conceptual Site Model

The Phase Two Conceptual Site Model is presented under Appendix E.

6.0 Conclusions

This Phase Two ESA involved that advancement of three (3) boreholes and the collection of soil samples for analysis of the potential contaminants of concern, including: metals, PHCs (F1 to F4), BTEX and PAHs.

It is noted that groundwater was not identified as a media of concern by the Phase One ESA, thus no groundwater monitoring was undertaken as part of the Phase Two ESA.

Based on the results of the information gathered through the course of the investigation, DS presents the following conclusions:

- The lithology encountered consisted of a layer of topsoil approximately 250 to 300 mm in thickness , underlain by silty sand which extended to the termination depth in all three of the boreholes advanced. Bedrock was not encountered within any of the boreholes, which were terminated at depths ranging between 1.2 to 1.5 mbgs. Soils were noted as saturated from between 0.3 to 0.8 mbgs in all three boreholes advanced;
- All of the chemical analyses for each parameter group met the MECP Table 8 SCS, and also the QA/QC requirements; and,

- On the basis of the above, no further soil investigation is recommended at this time.

It is the opinion of the QP_{ESA} that the applicable SCS for the soil at the Phase Two Property have been met as of the Certification Date of March 11, 2020. No further sub-surface investigation is required regarding the environmental quality of the soil at the Phase Two Property. Based on the above results, the Phase Two Property should be considered as suitable for the proposed residential development from an environmental assessment perspective.

6.1 Qualifications of the Assessors

Matthew Zammit, M.A.Sc., EIT.

Mr. Matthew Zammit is a Project Manager at DS Consultants Ltd. and has more than 10 years of combined education and experience in civil construction, geotechnical, and hydrogeological investigations. He is involved in numerous hydrogeological, geotechnical, and environmental investigation projects. His experience includes civil inspection for contract administration on a number of provincial and municipal projects, as well as geotechnical, hydrogeological, and environmental investigation fieldwork, geotechnical lab testing, and data analysis.

Kirstin Olsen, MSc.

Ms. Kirstin Olsen is a Project Manager in the Environmental Services Department at DS Consultants Limited. Ms. Olsen has a Bachelor's Degree in Animal, Plant and Environmental Science, as well as a Master of Science Degree in Environmental Science, Ecology and Conservation from the University of the Witwatersrand (Johannesburg, South Africa). Ms. Olsen has personally completed over three hundred detailed environmental assessments across a wide array of scientific disciplines including: Phase One & Two Environmental Site Assessments, Remedial Excavation & Injection Oversight, Hydrogeological Investigations, EASR Registration/PTTW Application, Aquatic Ecological Delineation, Assessment & Planning, Toxicological, Soil & Water Impact and Risk Assessment, as well as Environmental Construction Monitoring & Performance Auditing.

Mr. Patrick (Rick) Fioravanti, B.Sc., P.Geo., QP_{ESA}

Mr. Fioravanti is the Manager of Environmental Services with DS Consultants Limited. Patrick holds an Honours Bachelor of Science with distinction in Toxicology from the University of Guelph, and is a practicing member of the Association of Professional Geoscientists of Ontario (APGO). Patrick has over nine years of environmental consulting experience and has conducted and/or managed over 200 projects in his professional

experience. Patrick has extensive experience conducting Phase One and Phase Two Environmental Site Assessments in support of brownfields redevelopment in urban settings, and been involved in numerous remediation projects, supported many risk assessments, and successfully filed Records of Site Condition with the Ministry of Environment and Climate Change. He has conducted work across southern and eastern Ontario, and Quebec in his professional experience. Patrick is considered a Qualified Person to conduct Environmental Site Assessments as defined by Ontario Regulation 153/04 (as amended).

6.2 Signatures

This Phase Two ESA was conducted under the supervision of Mr. Patrick Fioravanti, QPE$_{SA}$, in accordance with the requirements of O.Reg. 153/04 (as amended). The findings and conclusions presented have been determined based on the information obtained at the time of the investigation, and on an assessment of the conditions of the Site at this time.

We trust this report meets with your requirements. Should you have any questions regarding the information presented, please do not hesitate to contact our office.

Yours truly,

DS Consultants Ltd

Kirstin Olsen, MSc.
Environmental Project Manager

Patrick Fioravanti, B.Sc., P.Geo., QP$_{ESA}$
Manager – Environmental Services

6.3 Limitations

This report was prepared for the sole use of Lotco II Limited and is intended to provide an assessment of the environmental condition on the property located at 50 Saunders Street, Collingwood, Ontario. The information presented in this report is based on information collected during the completion of the Phase Two Environmental Site Assessment by DS Consultants Ltd. The material in this report reflects DS' judgment in light of the information available at the time of report preparation. This report may not be relied upon by any other person or entity without the written authorization of DS Consultants Ltd. The scope of services performed in the execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or reuse of this documents or findings, conclusions and recommendations represented herein, is at the sole risk of said users.

The conclusions drawn from the Phase Two ESA were based on information at selected observation and sampling locations. Conditions between and beyond these locations may become apparent during future investigations or on-site work, which could not be detected or anticipated at the time of this investigation. The sampling locations were chosen based upon a cursory historical search, visual observations and limited information provided by persons knowledgeable about past and current activities on this site during the Phase Two ESA activities. As such, DS Consultants Ltd. cannot be held responsible for environmental conditions at the site that was not apparent from the available information.

7.0 References

- Armstrong, D.K. and Dodge, J.E.P. *Paleozoic Geology Map of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 219.
- C. C. Tatham & Associated Ltd. Consulting Engineers (CCTA). 2018. *50 Saunders Road, Collingwood, Groundwater Monitoring Summary.*
- Chapman, L.J. and Putnam, D.F. 2007. *The Physiography of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 228.
- DS Consultants Limited. 2019. *Phase One Environmental Site Assessment, 50 Saunders Street, Collingwood, Ontario*.
- Freeze, R. Allen and Cherry, John A., 1979. *Ground water*. Page 29.
- Ontario Ministry of the Environment, December 1996. *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario.*
- Ontario Ministry of Environment, 15 April 2011. *Soil, Ground Water and Sediment Standards for use under part XV.1of the Environmental Protection Act.*
- Ontario Ministry of the Environment, June 2011. *Guide for Completing Phase Two Environmental Site Assessments under Ontario regulation 153/04.*
- Ontario Ministry of the Environment, July 2011. *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.*
- The Ontario Geological Survey. 2003. *Surficial Geology of Southern Ontario*.
- Peto MacCallum Ltd. Consulting Engineers (PML). 2017. *Geotechnical Investigation, Proposed Residential Subdivision, 50 Saunders Street, Collingwood, Ontario.*

Tables

Table 1: Summary of APECs Investigated

APEC	Description	PCOCs	Media	Boreholes Within APEC	Samples Analysed	Parameter Analyzed
APEC-1	Historic presence of the Hamilton and Northwestern Railway, located on the border of the west adjacent property, as well as the western portion of the Site.	Metals, PHCs (F1-F4), BTEX, PAHs	Soil	BH20-1	GS1	Metals, PHCs (F1-F4), BTEX, PAHs
				BH20-2	GS1	
					GS1 DUP	
				BH20-3	GS1	

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 2: Summary of Soil Samples Submitted for Chemical Analysis

Borehole ID	Sample No.	Sample Depth (mbgs)	Soil Description	Parameter Analyzed	APEC Investigated
BH20-1	GS1	0.5 - 0.6	Silty Sand	Metals, PHCs (F1-F4), BTEX, PAHs	APEC-1
BH20-2	GS1	0.4 - 0.5	Silty Sand		
BH20-2	GS1 DUP	0.4 - 0.5	Silty Sand	Metals	
BH20-3	GS1	0.45 - 0.55	Silty Sand	Metals, PHCs (F1-F4), BTEX, PAHs	

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 3: Summary of Metals in Soil

Sample Identification	MECP Table 8 SCS	BH20-1, GS1	BH20-2, GS1	BH20-2, GS1 DUP	BH20-3, GS1
Date of Collection		11-Mar-20			
Sampling Depth (mbgs)		0.5 - 0.6	0.4 - 0.5		0.45 - 0.55
Analytical Report Reference No.		CA14629-MAR20-009	-MAR20-010	-MAR20-011	-MAR20-012
Antimony	1.3	<0.8	<0.8	<0.8	<0.8
Arsenic	18	2.7	1.8	1.6	1.3
Selenium	1.5	<0.7	<0.7	<0.7	<0.7
Barium	220	22	12	10	11
Beryllium	2.5	0.22	0.12	0.12	0.10
Boron	36	3	2	2	3
Cadmium	1.2	0.06	0.04	0.03	0.03
Chromium	70	9.2	6.7	6.2	5.1
Cobalt	22	2.9	2.2	2.0	1.4
Copper	92	8.5	5.1	4.4	3.8
Lead	120	4.6	4.2	3.4	1.8
Molybdenum	2	0.3	0.1	<0.1	<0.1
Nickel	82	7.9	4.9	4.4	4.7
Silver	0.5	<0.05	<0.05	<0.05	<0.05
Thallium	1	0.04	0.02	0.02	<0.02
Uranium	2.5	0.32	0.26	0.25	0.38
Vanadium	86	15	10	9	9
Water Soluble Boron	1.5	<0.5	<0.5	<0.5	<0.5
Zinc	290	12	9.1	8.4	6.1
Chromium VI	0.66	<0.2	0.3	0.2	<0.2
Free Cyanide	0.051	<0.05	<0.05	<0.05	<0.05
Mercury	0.27	<0.05	<0.05	<0.05	<0.05
pH, 2:1 CaCl2 Extraction		7.35	7.16	7.08	7.82

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 4: Summary of PHCs in Soil

Parameter	MECP Table 8 SCS	BH20-1, GS1	BH20-2, GS1	BH20-3, GS1
Date of Collection		11-Mar-20		
Sampling Depth (mbgs)		0.5 - 0.6	0.4 - 0.5	0.45 - 0.55
Analytical Report Reference No.		CA14629-MAR20-009	-MAR20-010	-MAR20-012
Benzene	0.02	<0.02	<0.02	<0.02
Ethylbenzene	0.05	<0.05	<0.05	<0.05
Toluene	0.2	<0.05	<0.05	<0.05
Xylenes (Total)	0.05	<0.05	<0.05	<0.05
F1 (C10-C16)	25	<10	<10	<10
F2 (C10-C16)	10	<10	<10	<10
F3 (C16-C34)	240	<50	<50	<50
F4 (C34-C50)	120	<50	<50	<50

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Table 5: Summary of PAHs in Soil

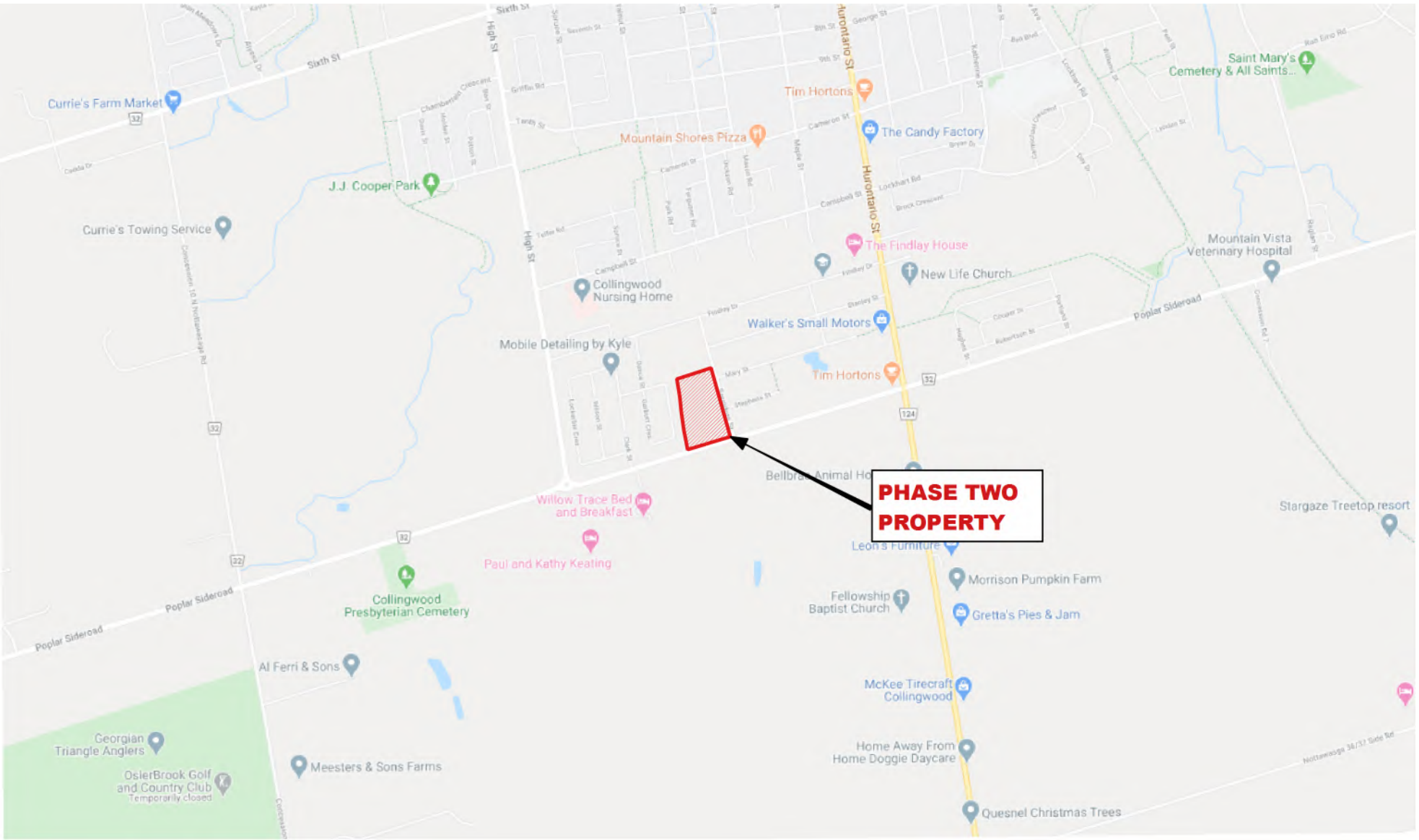
Parameter	MECP Table 8 SCS	BH20-1, GS1	BH20-2, GS1	BH20-3, GS1
Date of Collection		11-Mar-20		
Sampling Depth (mbgs)		0.5 - 0.6	0.4 - 0.5	0.45 - 0.55
Analytical Report Reference No.		CA14629-MAR20-009	-MAR20-010	-MAR20-012
Acenaphthene	0.072	<0.05	<0.05	<0.05
Acenaphthylene	0.093	<0.05	<0.05	<0.05
Anthracene	0.22	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.36	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.3	<0.05	<0.05	<0.05
Benzo(b+j)fluoranthene	0.47	<0.05	<0.05	<0.05
Benzo(ghi)perylene	0.68	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	0.48	<0.05	<0.05	<0.05
Chrysene	2.8	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	0.1	<0.06	<0.06	<0.06
Fluoranthene	0.69	<0.05	<0.05	<0.05
Fluorene	0.19	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	0.23	<0.1	<0.1	<0.1
Methylnaphthalene, 2-(1-)	0.59	<0.05	<0.05	<0.05
Naphthalene	0.09	<0.05	<0.05	<0.05
Phenanthrene	0.69	<0.05	<0.05	<0.05
Pyrene	1	<0.05	<0.05	<0.05

For Table Notes see **Notes for Soil Summary Tables,** included at the end of this Section.

Notes for Soil Summary Tables

	For soil analytical results, concentration exceeds the applicable Standards.
	For soil analytical results, laboratory detection limits exceed the applicable Standards.
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
masl	Meters above sea level
MECP Table 8 SCS	Generic Condition Standards in a Potable Groundwater Condition for Use within 30 m of a Water Body as contained in Table 8 of the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", published by the MECP on April 15, 2011.
mbgs	Meters below ground surface
PAH	Polyaromatic Hydrocarbon
PHC	Petroleum Hydrocarbon
Units	Units for all soil analyses are in µg/g (ppm) unless otherwise indicated

Figures



Legend

Approx Property Boundary

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
50 Saunders Street, Collingwood, ON

Title: **SITE LOCATION PLAN**

N

Client: LOTCO II LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	K.O	S.Y	April 2020
Rev: 0	Scale: As Shown	Project No.: 20-052-400	Figure No.: 1

Image/Map Source: *Google Street Map*

Legend

Approx Property Boundary

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
50 Saunders Street, Collingwood, ON

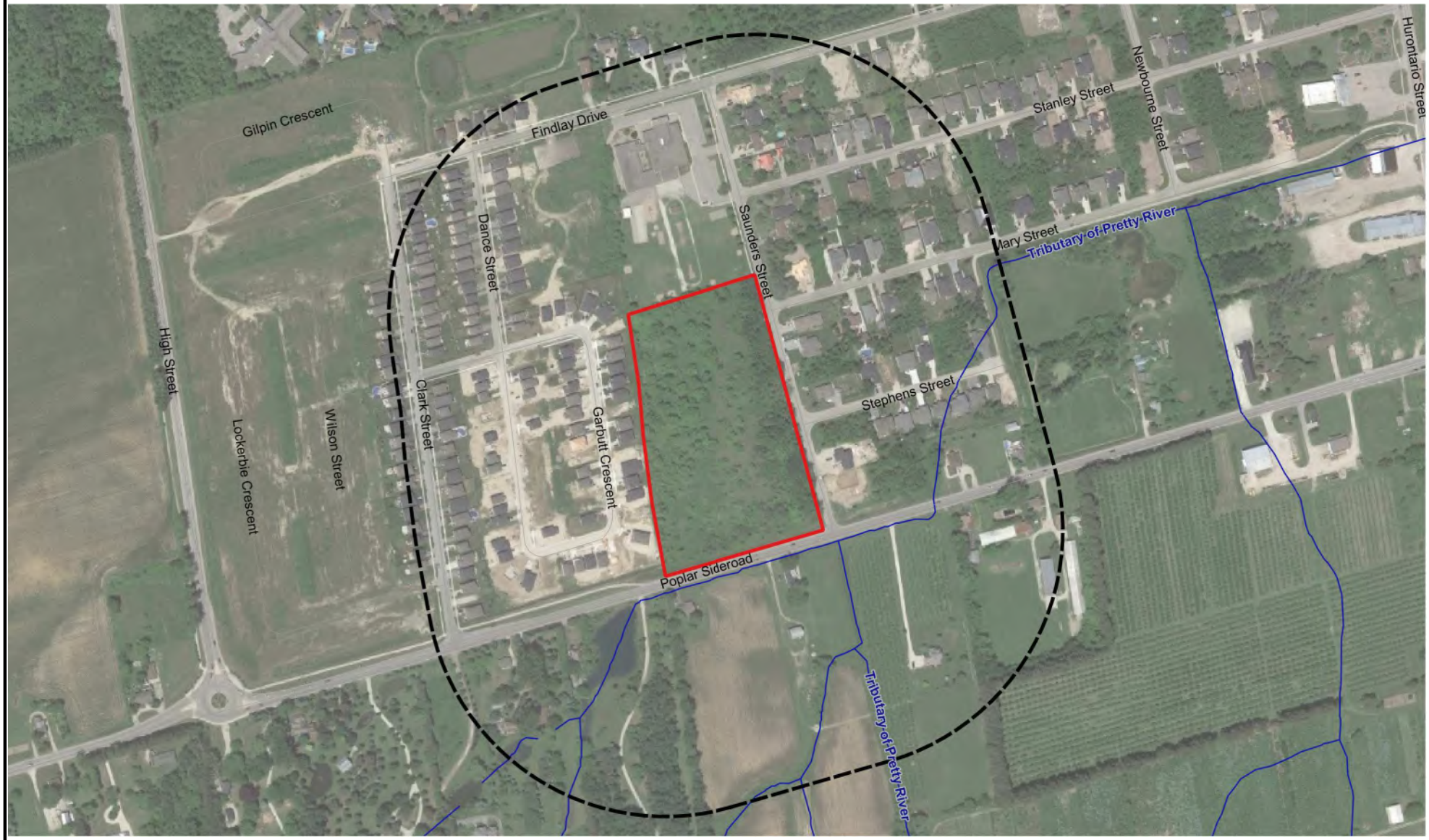
Title: **PHASE TWO PROPERTY SITE PLAN**

N

Client: LOTCO II LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	K.O	S.Y	April 2020
Rev: 0	Scale: As Shown	Project No.: 20-052-400	Figure No.: **2**

Image/Map Source: *Google Satellite Image*



Legend

- Approx Property Boundary
- 250m Buffer

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
50 Saunders Street, Collingwood, ON

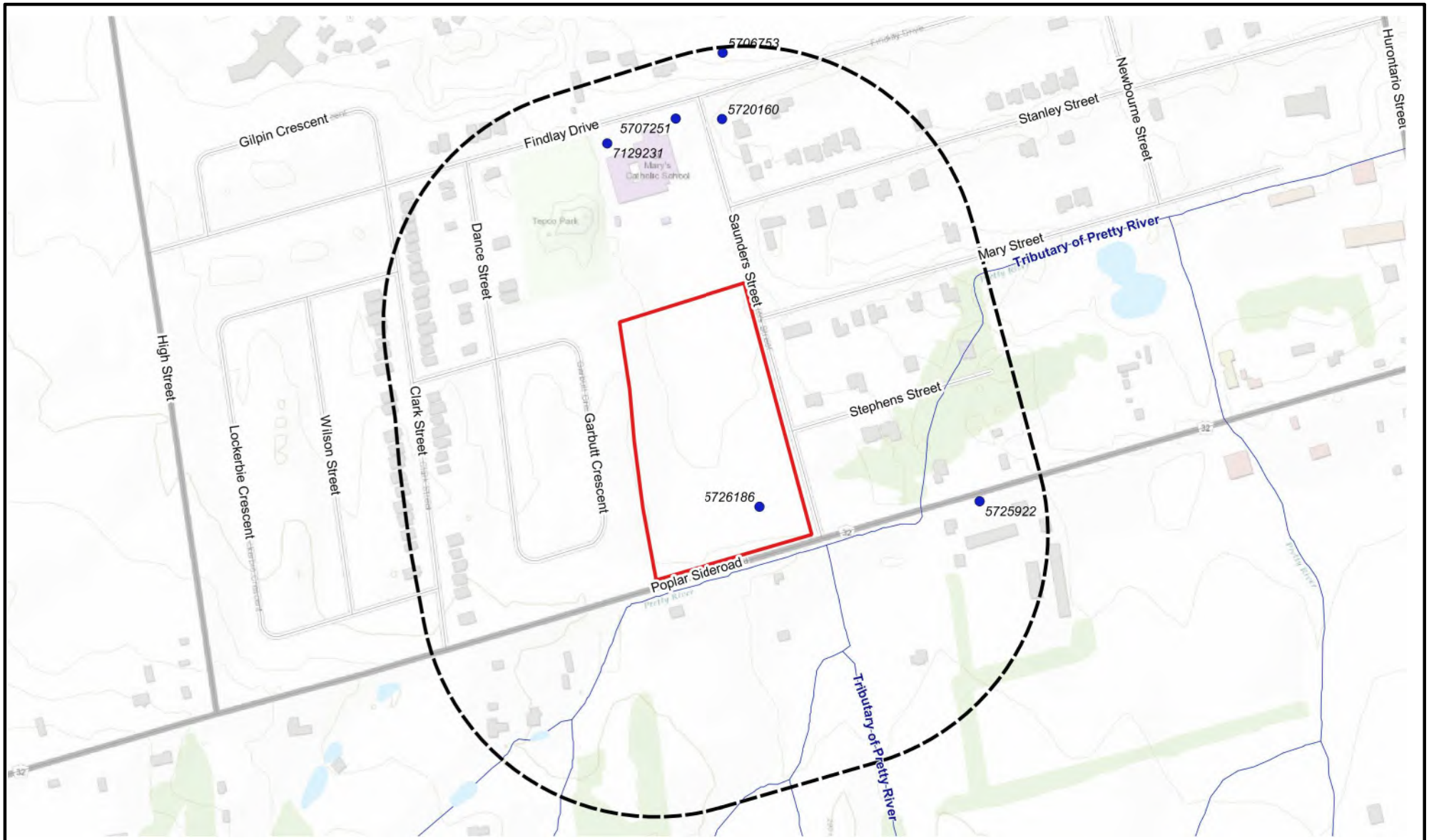
Title: **PHASE ONE STUDY AREA**

N

Client: LOTCO II LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	K.O	S.Y	April 2020
Rev: 0	Scale: As Shown	Project No.: 20-052-400	Figure No.: 3

Image/Map Source: *Google Satellite Image*



Legend

- Approx Property Boundary
- 250m Buffer
- Registered Water Well (MECP WWR)

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
50 Saunders Street, Collingwood, ON

Title: **PCA WITHIN PHASE ONE STUDY AREA**

N

Client: LOTCO II LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	K.O	S.Y	April 2020
Rev: 0	Scale: As Shown	Project No.: 20-052-400	Figure No.: 4

Image/Map Source: *Esri Topo Map*

Legend

- Approx Property Boundary
- Borehole Location
  (Depth - metres below ground surface (mbgs))

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
50 Saunders Street, Collingwood, ON

Title: **BOREHOLE LOCATION PLAN WITH APECs**

N

Client: LOTCO II LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	K.O	S.Y	April 2020
Rev: 0	Scale: As Shown	Project No.: 20-052-400	Figure No.: **5**

Image/Map Source: *Google Satellite Image*

Legend

- Approx Property Boundary
- Borehole Location
- Sample Met Applicable Standards (Depth - mbgs)

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
50 Saunders Street, Collingwood, ON

Title: **SOIL CHARACTERIZATION - METALS**

N

Client: LOTCO II LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	K.O	S.Y	April 2020
Rev: 0	Scale: As Shown	Project No.: 20-052-400	Figure No.: **6A**

Image/Map Source: *Google Satellite Image*

Legend

- Approx Property Boundary
- BH Location
- Sample Met Applicable Standards (Depth - mbgs)

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
50 Saunders Street, Collingwood, ON

Title: **SOIL CHARACTERIZATION - PHC + BTEX**

N

Client: LOTCO II LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	K.O	S.Y	April 2020
Rev: 0	Scale: As Shown	Project No.: 20-052-400	Figure No.: **6B**

Image/Map Source: *Google Satellite Image*

Legend

- Approx Property Boundary
- Borehole Location
- Sample Met Applicable Standards (Depth - mbgs)

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
50 Saunders Street, Collingwood, ON

Title: **SOIL CHARACTERIZATION - PAH**

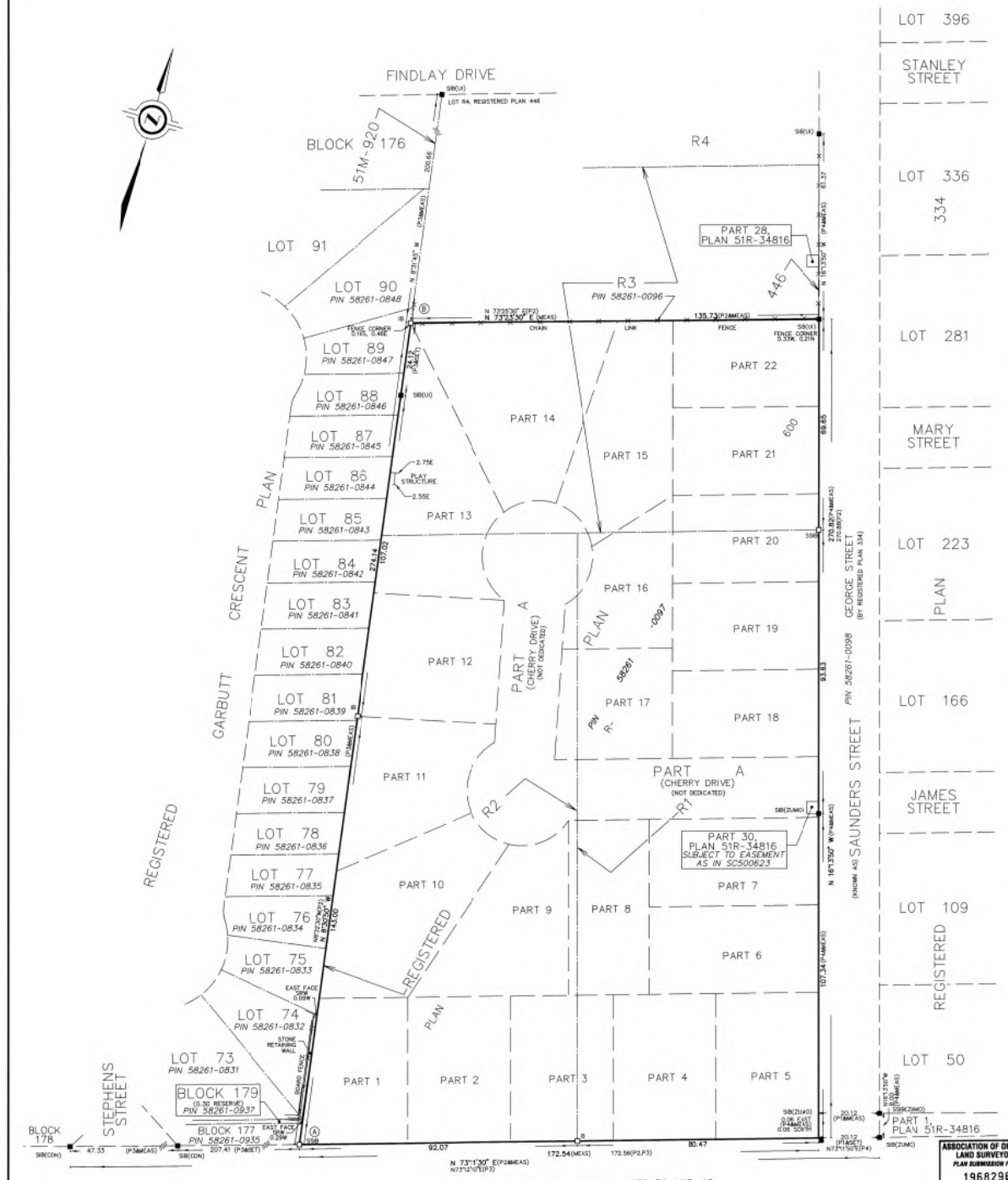
N

Client: LOTCO II LIMITED

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	K.O	S.Y	April 2020
Rev: 0	Scale: As Shown	Project No.: 20-052-400	Figure No.: **6C**

Image/Map Source: *Google Satellite Image*

Appendix A



PLAN OF SURVEY OF

LOTS R1, R2 AND PART OF R3 REGISTERED PLAN 446

GEOGRAPHIC TOWNSHIP OF NOTTAWASAGA
NOW IN THE
TOWN OF COLLINGWOOD
COUNTY OF SIMCOE

SCALE 1 : 750

25 0 10 20 30 40 50 metres

METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTES

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010.0).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999621.

FOR BEARING COMPARISONS, A ROTATION OF 00°31'50" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON PLAN 51M-920
A ROTATION OF 00°33'30" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON PLAN R-600.
A ROTATION OF 00°33'10" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON PLAN 51R-34816

ALL SET SSIB AND PB MONUMENTS WERE USED DUE TO LACK OF OVERBURDEN AND/OR PROXIMITY OF UNDERGROUND UTILITIES IN ACCORDANCE WITH SECTION 11 (4) OF O.REG. 525/91.

INTEGRATION DATA

OBSERVED REFERENCE POINTS (ORPs): UTM ZONE 17, NAD83 (CSRS) (2010.0).

COORDINATES TO URBAN ACCURACY PER SECTION 14 (2) OF O.REG 216/10.

POINT ID	EASTING	NORTHING
ORP (A)	561 797.39	4 925 137.22
ORP (B)	561 756.81	4 925 408.23

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
IB	DENOTES	IRON BAR
WIT	DENOTES	WITNESS
UI	DENOTES	UNIDENTIFIABLE
MEAS	DENOTES	MEASURED
JDB	DENOTES	J.D. BARNES LIMITED
CDN	DENOTES	CDN LAND SURVEYORS INC.
ZUMO	DENOTES	ZUBEK EMO & PATTEN LTD.
P1	DENOTES	REGISTERED PLAN 334
P2	DENOTES	PLAN 51R-600
P3	DENOTES	REGISTERED PLAN 51M-920
P4	DENOTES	PLAN 51R-34816
SRW	DENOTES	STONE RETAINING WALL

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON JUNE 20, 2016

June 22, 2016
DATE

JAMES A. NICOL
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
1968296
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29(3)

J.D. BARNES LIMITED
LAND INFORMATION SPECIALISTS
SURVEYING MAPPING GIS
365 BRYNE DRIVE, UNIT E, BARRIE, ON L4N 9T3
T: (705) 739-4770 F: (705) 739-6771 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
MIKE WALDOCK	JAN	16-11-505-00

FILE: G:\16-11-505\00\DRAWINGS\16-11-505-plans.dgn DATED: 06/20/2016

Appendix B

Project Number: 20-052-400 2020-03-04

Lotco II Limited
24 Executive Place
Kitchener, Ontario
N2P 2N4

Attention: Mr. Al Allendorf,
Sent via email: al@bostgroup.ca

RE: Sampling and Analysis Plan
Phase Two Environmental Site Assessment
50 Saunders Street, Collingwood, Ontario

Dear: Mr. Al Allendorf,

1. Introduction

DS Consultants Limited (DS) is pleased to present the Sampling and Analysis Plan (SAP) for the proposed Phase Two Environmental Site Assessment of 50 Saunders Street, Collingwood, Ontario, (the Site).The purpose of the proposed Phase Two ESA program is to assess the current subsurface environmental conditions in support of the proposed development of the Site.

The Phase Two ESA will involve intrusive investigation in the area determined in the Site visit to be an Area of Potential Environmental Concern (APECs, and will be completed in general accordance with O.Reg 153/04. Based on the findings of the field and laboratory analyses, a Phase Two ESA report will be prepared.

2. Background

Based on the Phase One Environmental Site Assessment completed by DS in November, 2019, it is DS's understanding that the Site is a 4.10 hectare (10.13 acre) parcel of land which is currently vacant. There is no indication that the Property was developed or used for any purpose previously. A total of one (1) potentially contaminating activity was identified on the Phase One Property which was considered to be contributing to an Area of Potential Environmental Concern (APEC) on the Phase Two Property. A summary of the APEC identified, the potential contaminants of concern, and the media potentially impacted is presented in Table 1 below:

Table 1: Areas of Potential Environmental Concern

PCA Item.	PCA Description (Per. Table 2, Schedule D of O.Reg. 153/04)	Description	Contributing to APEC (Y/N)
1	PCA-1: #46 - Rail Yards, Tracks, and Spurs	According to the 1860 County Atlas, Hamilton and Northwestern Railway was historically present along the border of the west adjacent property and the Phase One Property.	Yes – APEC-1 (western portion of Phase Two Property)

The contaminants of potential concern identified for the APEC presented in Table 3-3 above were identified as: Metals, PHCs (F1-F4), BTEX, PAHs in soil.

3. Site Investigation Program

The Site Investigation Program will be completed as follows:

- Public and private underground utilities and services will be cleared prior to commencement of intrusive investigation activities;
- A Health and Safety Plan will be prepared and all work will be executed safely;
- Three (3) boreholes will be advanced on the Phase Two Property, to an approximate maximum depth of 1.5 mbgs, or until sample refusal depth, or until groundwater is encountered, using a hand-held auger tool. The soil profile from each borehole will be logged in the field and samples will be screened for total organic vapours (TOV) with a photoionization detector (PID). The location of the boreholes will be selected to investigate the APEC identified during the Phase One ESA, as well as to delineate the horizontal and vertical extents of relevant parameters of concern; it is anticipated that bedrock will not be encountered during the completion of the field investigation.
- Groundwater was not identified as a media of concern by the Phase One ESA, thus groundwater monitoring is not included in the Phase Two ESA.
- Based on field screening and visual/olfactory observations, worst-case/representative soil samples from the boreholes will be submitted for laboratory testing of relevant parameters of concern;
- Soil samples will be submitted for chemical analysis by a CALA laboratory in accordance with the Ontario MOECC standards and requirements of O.Reg. 153/04 under the Environmental Protection Act.

All field equipment is to be calibrated at the start of each field day, in accordance with DS's Standard Operating Procedures (SOPs). Clean, disposable Nitrile™ gloves will be used at each sampling interval to reduce the risk of cross contamination. All non-dedicated equipment (e.g. hand-held auger tool.) will be decontaminated between each borehole. The equipment will be brushed free of debris, washed with phosphate-free detergent, and then rinsed with analyte free water.

The proposed analytical program is outlined below (proposed program subject to change as a result of site observations/findings). All soil sampling will be carried out in accordance with DS's SOPs.

Soils:

- Three (3) soil samples for analysis of metals, petroleum hydrocarbons (PHCs) (F1-F4) and BTEX, and for polycyclic aromatic hydrocarbons (PAHs). One (1) sample will be submitted for QA/QC purposes and analyzed for metals.

One quality control/quality assurance (QAQC) sample will be submitted for analysis per ten (10) samples analyzed in accordance with O.Reg. 153/04.

Following receipt of all of the results, a report in accordance with O.Reg. 153/04 will be prepared.

It is noted that if the Phase Two ESA reveals parameter concentrations greater than the applicable standards set out in *Ontario Regulation 153/04,* then additional work (i.e., supplemental delineation, additional drilling, sampling, analysis, and/or site remediation activities) will be deemed necessary prior to RSC filing, should an RSC be required. The costs for any additional work, if necessary, are beyond the current scope of work.

The SAP was created based on the request to complete a Phase Two ESA in support of the proposed redevelopment of the Site. The SAP was compiled to collect data to provide information on soil in the APEC.

Additional delineation may be required following the implementation of this SAP to meet the requirements of O.Reg. 153/04 which requires delineation of all areas where concentrations are above the applicable SCS such as in the following conditions:

- Unexpected contamination not previously discovered, or not related to the identified APEC, is discovered which will require further delineation to identify source(s); and
- If the sampling results indicate that the soil impacts are deeper than initially expected.

We trust that this Sampling and Analysis Plan meets the objectives of the Client. If further assistance is required on this matter please do not hesitate to contact the undersigned.

Yours Very Truly,

DS Consultants Ltd.

Scott Watson, B.A.T
Manager, Collingwood & Barrie

Appendix C

LOG OF BOREHOLE BH20-1

PROJECT: Phase Two ESA - 50 Saunders, Collingwood
CLIENT: Lotco II Ltd.
PROJECT LOCATION: Collingwood, Ontario
DATUM: Local
BH LOCATION: South-west Portion of the Site

DRILLING DATA
Method: Hand Auger
Diameter: 100mm
Date: Mar/11/2020

REF. NO.: 20-052-400
ENCL NO.: 2

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors: PID (ppm)	Soil Head Space Vapors: CGD (% LEL)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT (W_P w W_L) WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0.0	**TOPSOIL:** 300mm												
0.5	**SILTY SAND:** Brown, trace organics, saturated, loose		GS	1									HEX:55, IBL:0
1	compact at 1 m		GS	2									HEX:45, IBL:0
1.2	**END OF BOREHOLE** Notes: 1) water level in open hole 0.15 mbgs 2) No cave in GS= Grab Sample												

PID (ppm): 20 40 60 80
CGD (% LEL): 5 10 15 20
WATER CONTENT (%): 10 20 30

0~100 PPM AND 0~25% LEL-2016 20-052-400.GPJ DS.GDT 4/20/20

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

LOG OF BOREHOLE BH20-2

PROJECT: Phase Two ESA - 50 Saunders, Collingwood
CLIENT: Lotco II Ltd.
PROJECT LOCATION: Collingwood, Ontario
DATUM: Local
BH LOCATION: Western Portion of the Site

DRILLING DATA
Method: Hand Auger
Diameter: 100mm
Date: Mar/11/2020

REF. NO.: 20-052-400
ENCL NO.: 3

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors: PID (ppm) 20 40 60 80	Soil Head Space Vapors: CGD (% LEL) 5 10 15 20	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L; WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0.0	**TOPSOIL:** 300mm												
0.3	**SILTY SAND:** Brown, trace organics, saturated, loose		GS	1									HEX:45, IBL:0
1	compact at 0.9m												
			GS	2									HEX:40, IBL:0
1.5	**END OF BOREHOLE** Notes: 1) water level in open hole 0.15 mbgs 2) No cave in GS= Grab Sample												

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^{3}$, $\times^{3}$: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

0~100 PPM AND 0~25% LEL-2016 20-052-400.GPJ DS.GDT 4/20/20

LOG OF BOREHOLE BH20-3

PROJECT: Phase Two ESA - 50 Saunders, Collingwood
CLIENT: Lotco II Ltd.
PROJECT LOCATION: Collingwood, Ontario
DATUM: Local
BH LOCATION: North-west Portion of the Site

DRILLING DATA
Method: Hand Auger
Diameter: 100mm
Date: Mar/11/2020

REF. NO.: 20-052-400
ENCL NO.: 4

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors: PID (ppm)	Soil Head Space Vapors: CGD (% LEL)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT; WATER CONTENT (%)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0.0	**TOPSOIL:** 250mm												
0.3	**SILTY SAND:** Brown, trace organics, moist, loose		GS	1									HEX:30, IBL:0
	saturated at 0.8m		GS	2									HEX:35, IBL:0
1			GS	3									HEX:35, IBL:0
1.4	**END OF BOREHOLE** Notes: 1) water level in open hole 0.81 mbgs 2) cave in at 1m upon completion GS= Grab Sample												

PID (ppm) scale: 20 40 60 80
CGD (% LEL) scale: 5 10 15 20
WATER CONTENT (%) scale: 10 20 30

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: + 3, × 3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

Appendix D

FINAL REPORT

CA14629-MAR20 R1

20-052-400

Prepared for

DS Consultants

FINAL REPORT

First Page

CLIENT DETAILS

Client	DS Consultants
Address	40 Bell Farm Road Unit 8 Barrie, Ontario L4M5L3. Canada
Contact	Matt Zammit
Telephone	289-456-9764
Facsimile	905-264-2685
Email	matt.zammit@dsconsultants.ca; rick.fioravanti@dsconsultants.(
Project	20-052-400
Order Number	
Samples	Soil (4)

LABORATORY DETAILS

Project Specialist	Brad Moore Hon. B.Sc
Laboratory	SGS Canada Inc.
Address	185 Concession St., Lakefield ON, K0L 2H0
Telephone	705-652-2143
Facsimile	705-652-6365
Email	brad.moore@sgs.com
SGS Reference	CA14629-MAR20
Received	03/13/2020
Approved	03/20/2020
Report Number	CA14629-MAR20 R1
Date Reported	03/20/2020

COMMENTS

CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.

Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met.

nC6 and nC10 response factors within 30% of response factor for toluene: YES

nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES

C50 response factors within 70% of nC10 + nC16 + nC34 average: YES

Linearity is within 15%: YES

F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

Temperature of Sample upon Receipt: 7 degrees C
Cooling Agent Present:yes
Custody Seal Present:Yes

Chain of Custody Number:012396

SIGNATORIES

Brad Moore Hon. B.Sc

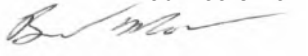


TABLE OF CONTENTS

Client: DS Consultants
Project: 20-052-400
Project Manager: Matt Zammit
Samplers: Matt Zammit

PACKAGE: **REG153 - BTEX** (SOIL)

L1 = REG153 / SOIL / COARSE - TABLE 2 - Residential/Parkland - UNDEFINED

			Sample Number	9	10	12	
			Sample Name	BH 20-1, GS1	BH 20-2, GS1	BH 20-3, GS1	
			Sample Matrix	Soil	Soil	Soil	
			Sample Date	11/03/2020	11/03/2020	11/03/2020	
Parameter	**Units**	**RL**	**L1**	**Result**	**Result**	**Result**	
BTEX							
Benzene	µg/g	0.02	0.21	< 0.02	< 0.02	< 0.02	
Ethylbenzene	µg/g	0.05	1.1	< 0.05	< 0.05	< 0.05	
Toluene	µg/g	0.05	2.3	< 0.05	< 0.05	< 0.05	
Xylene (total)	µg/g	0.05	3.1	< 0.05	< 0.05	< 0.05	
m/p-xylene	µg/g	0.05		< 0.05	< 0.05	< 0.05	
o-xylene	µg/g	0.05		< 0.05	< 0.05	< 0.05	

PACKAGE: **REG153 - Hydrides** (SOIL)

L1 = REG153 / SOIL / COARSE - TABLE 2 - Residential/Parkland - UNDEFINED

			Sample Number	9	10	11	12	
			Sample Name	BH 20-1, GS1	BH 20-2, GS1	BH 20-2, GS1 DUP	BH 20-3, GS1	
			Sample Matrix	Soil	Soil	Soil	Soil	
			Sample Date	11/03/2020	11/03/2020	11/03/2020	11/03/2020	
Parameter	**Units**	**RL**	**L1**	**Result**	**Result**	**Result**	**Result**	
Hydrides								
Antimony	µg/g	0.8	7.5	< 0.8	< 0.8	< 0.8	< 0.8	
Arsenic	µg/g	0.5	18	2.7	1.8	1.6	1.3	
Selenium	µg/g	0.7	2.4	< 0.7	< 0.7	< 0.7	< 0.7	

Client: DS Consultants
Project: 20-052-400
Project Manager: Matt Zammit
Samplers: Matt Zammit

PACKAGE: **REG153 - Metals and Inorganics** (SOIL)

L1 = REG153 / SOIL / COARSE - TABLE 2 - Residential/Parkland - UNDEFINED

	Sample Number	9	10	11	12		
	Sample Name	BH 20-1, GS1	BH 20-2, GS1	BH 20-2, GS1 DUP	BH 20-3, GS1		
	Sample Matrix	Soil	Soil	Soil	Soil		
	Sample Date	11/03/2020	11/03/2020	11/03/2020	11/03/2020		
Parameter	**Units**	**RL**	**L1**	**Result**	**Result**	**Result**	**Result**
Metals and Inorganics							
Moisture Content	%	-		20.0	19.2	20.6	17.9
Barium	µg/g	0.1	390	22	12	10	11
Beryllium	µg/g	0.02	4	0.22	0.12	0.12	0.10
Boron	µg/g	1	120	3	2	2	3
Cadmium	µg/g	0.02	1.2	0.06	0.04	0.03	0.03
Chromium	µg/g	0.5	160	9.2	6.7	6.2	5.1
Cobalt	µg/g	0.01	22	2.9	2.2	2.0	1.4
Copper	µg/g	0.1	140	8.5	5.1	4.4	3.8
Lead	µg/g	0.1	120	4.6	4.2	3.4	1.8
Molybdenum	µg/g	0.1	6.9	0.3	0.1	< 0.1	< 0.1
Nickel	µg/g	0.5	100	7.9	4.9	4.4	4.7
Silver	µg/g	0.05	20	< 0.05	< 0.05	< 0.05	< 0.05
Thallium	µg/g	0.02	1	0.04	0.02	0.02	< 0.02
Uranium	µg/g	0.002	23	0.32	0.26	0.25	0.38
Vanadium	µg/g	3	86	15	10	9	9
Zinc	µg/g	0.7	340	12	9.1	8.4	6.1
Water Soluble Boron	µg/g	0.5	1.5	< 0.5	< 0.5	< 0.5	< 0.5

Client: DS Consultants
Project: 20-052-400
Project Manager: Matt Zammit
Samplers: Matt Zammit

PACKAGE: **REG153 - Other (ORP)** (SOIL)

L1 = REG153 / SOIL / COARSE - TABLE 2 - Residential/Parkland - UNDEFINED

	Sample Number	9	10	11	12		
	Sample Name	BH 20-1, GS1	BH 20-2, GS1	BH 20-2, GS1 DUP	BH 20-3, GS1		
	Sample Matrix	Soil	Soil	Soil	Soil		
	Sample Date	11/03/2020	11/03/2020	11/03/2020	11/03/2020		
Parameter	**Units**	**RL**	**L1**	**Result**	**Result**	**Result**	**Result**
Other (ORP)							
Mercury	µg/g	0.05	0.27	< 0.05	< 0.05	< 0.05	< 0.05
Sodium Adsorption Ratio	---	0.2	5	0.5	< 0.2	< 0.2	< 0.2
SAR Calcium	mg/L	0.09		20.3	8.1	4.2	21.3
SAR Magnesium	mg/L	0.02		3.2	4.8	0.85	1.3
SAR Sodium	mg/L	0.15		8.8	0.57	0.33	0.40
Conductivity	mS/cm	0.002	0.7	0.16	0.05	0.05	0.09
pH	pH Units	0.05		7.35	7.16	7.08	7.82
Chromium VI	µg/g	0.2	8	< 0.2	0.3	0.2	< 0.2
Free Cyanide	µg/g	0.05	0.051	< 0.05	< 0.05	< 0.05	< 0.05

Client: DS Consultants

Project: 20-052-400

Project Manager: Matt Zammit

Samplers: Matt Zammit

PACKAGE: **REG153 - PAHs** (SOIL)

L1 = REG153 / SOIL / COARSE - TABLE 2 - Residential/Parkland - UNDEFINED

	Sample Number	9	10	12		
	Sample Name	BH 20-1, GS1	BH 20-2, GS1	BH 20-3, GS1		
	Sample Matrix	Soil	Soil	Soil		
	Sample Date	11/03/2020	11/03/2020	11/03/2020		
Parameter	**Units**	**RL**	**L1**	**Result**	**Result**	**Result**
PAHs						
Acenaphthene	µg/g	0.05	7.9	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/g	0.05	0.15	< 0.05	< 0.05	< 0.05
Anthracene	µg/g	0.05	0.67	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/g	0.05	0.5	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	µg/g	0.05	0.3	< 0.05	< 0.05	< 0.05
Benzo(b+j)fluoranthene	µg/g	0.05	0.78	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	µg/g	0.1	6.6	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	µg/g	0.05	0.78	< 0.05	< 0.05	< 0.05
Chrysene	µg/g	0.05	7	< 0.05	< 0.05	< 0.05
Dibenzo(a,h)anthracene	µg/g	0.06	0.1	< 0.06	< 0.06	< 0.06
Fluoranthene	µg/g	0.05	0.69	< 0.05	< 0.05	< 0.05
Fluorene	µg/g	0.05	62	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.1	0.38	< 0.1	< 0.1	< 0.1
1-Methylnaphthalene	µg/g	0.05		< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/g	0.05		< 0.05	< 0.05	< 0.05
Methylnaphthalene, 2-(1-)	µg/g	0.05	0.99	< 0.05	< 0.05	< 0.05
Naphthalene	µg/g	0.05	0.6	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/g	0.05	6.2	< 0.05	< 0.05	< 0.05
Pyrene	µg/g	0.05	78	< 0.05	< 0.05	< 0.05

Client: DS Consultants
Project: 20-052-400
Project Manager: Matt Zammit
Samplers: Matt Zammit

PACKAGE: **REG153 - PHCs** (SOIL)

L1 = REG153 / SOIL / COARSE - TABLE 2 - Residential/Parkland - UNDEFINED

			Sample Number	9	10	12
			Sample Name	BH 20-1, GS1	BH 20-2, GS1	BH 20-3, GS1
			Sample Matrix	Soil	Soil	Soil
			Sample Date	11/03/2020	11/03/2020	11/03/2020
Parameter	**Units**	**RL**	**L1**	**Result**	**Result**	**Result**
PHCs						
F1 (C6-C10)	µg/g	10	55	< 10	< 10	< 10
F1-BTEX (C6-C10)	µg/g	10		< 10	< 10	< 10
F2 (C10-C16)	µg/g	10	98	< 10	< 10	< 10
F3 (C16-C34)	µg/g	50	300	< 50	< 50	< 50
F4 (C34-C50)	µg/g	50	2800	< 50	< 50	< 50
Chromatogram returned to baseline at nC50	Yes / No	-		YES	YES	YES

PACKAGE: **REG153 - SVOC Surrogates** (SOIL)

L1 = REG153 / SOIL / COARSE - TABLE 2 - Residential/Parkland - UNDEFINED

			Sample Number	9	10	12
			Sample Name	BH 20-1, GS1	BH 20-2, GS1	BH 20-3, GS1
			Sample Matrix	Soil	Soil	Soil
			Sample Date	11/03/2020	11/03/2020	11/03/2020
Parameter	**Units**	**RL**	**L1**	**Result**	**Result**	**Result**
SVOC Surrogates						
Surr Nitrobenzene-d5	Surr Rec %	-		82	67	80
Surr 2-Fluorobiphenyl	Surr Rec %	-		81	56	89
Surr 4-Terphenyl-d14	Surr Rec %	-		88	54	89
Surr 2-Fluorophenol	Surr Rec %	-		78	75	81
Surr Phenol-d6	Surr Rec %	-		81	72	83

EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated

QC SUMMARY

Conductivity

Method: EPA 6010/SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Conductivity	EWL0240-MAR20	mS/cm	0.002	<0.002	0	10	99	90	110	NA		

Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Free Cyanide	SKA5062-MAR20	µg/g	0.05	<0.05	ND	20	104	80	120	111	75	125

Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-IENVISKA-LAK-AN-012

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chromium VI	SKA5071-MAR20	ug/g	0.2	<0.2	ND	20	102	80	120	103	75	125

QC SUMMARY

Mercury by CVAAS

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Mercury	EMS0092-MAR20	µg/g	0.05	<0.05	ND	20	98	80	120	97	70	130

Metals in aqueous samples - ICP-OES

Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-IENVISPE-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
SAR Calcium	ESG0042-MAR20	mg/L	0.09	<0.09	4	20	103	80	120	120	70	130
SAR Magnesium	ESG0042-MAR20	mg/L	0.02	<0.02	18	20	102	80	120	124	70	130
SAR Sodium	ESG0042-MAR20	mg/L	0.15	<0.15	5	20	101	80	120	128	70	130

QC SUMMARY

Metals in Soil - Aqua-regia/ICP-MS

Method: EPA 3050/EPA 200.8 | Internal ref.: ME-CA-[ENVISPE-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Silver	EMS0092-MAR20	ug/g	0.05	<0.05	7	20	108	70	130	93	70	130
Arsenic	EMS0092-MAR20	µg/g	0.5	<0.5	2	20	98	70	130	99	70	130
Barium	EMS0092-MAR20	ug/g	0.1	<0.1	2	20	101	70	130	92	70	130
Beryllium	EMS0092-MAR20	µg/g	0.02	<0.02	1	20	97	70	130	97	70	130
Boron	EMS0092-MAR20	µg/g	1	<1	3	20	107	70	130	85	70	130
Cadmium	EMS0092-MAR20	µg/g	0.02	<0.02	1	20	104	70	130	110	70	130
Cobalt	EMS0092-MAR20	µg/g	0.01	<0.01	2	20	103	70	130	104	70	130
Chromium	EMS0092-MAR20	µg/g	0.5	<0.5	12	20	103	70	130	87	70	130
Copper	EMS0092-MAR20	µg/g	0.1	<0.1	0	20	105	70	130	92	70	130
Molybdenum	EMS0092-MAR20	µg/g	0.1	<0.1	20	20	107	70	130	102	70	130
Nickel	EMS0092-MAR20	ug/g	0.5	<0.5	4	20	101	70	130	91	70	130
Lead	EMS0092-MAR20	ug/g	0.1	<0.1	1	20	106	70	130	101	70	130
Antimony	EMS0092-MAR20	µg/g	0.8	<0.8	ND	20	104	70	130	109	70	130
Selenium	EMS0092-MAR20	µg/g	0.7	<0.7	1	20	103	70	130	100	70	130
Thallium	EMS0092-MAR20	µg/g	0.02	<0.02	10	20	105	70	130	99	70	130
Uranium	EMS0092-MAR20	µg/g	0.002	<0.002	0	20	101	70	130	95	70	130
Vanadium	EMS0092-MAR20	µg/g	3	<3	2	20	102	70	130	109	70	130
Zinc	EMS0092-MAR20	µg/g	0.7	<0.7	3	20	101	70	130	103	70	130

QC SUMMARY

Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 I Internal ref.: ME-CA-[ENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F1 (C6-C10)	GCM0250-MAR20	µg/g	10	<10	ND	30	94	80	120	94	60	140

Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 I Internal ref.: ME-CA-[ENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F2 (C10-C16)	GCM0185-MAR20	µg/g	10	<10	ND	30	117	80	120	101	60	140
F3 (C16-C34)	GCM0185-MAR20	µg/g	50	<50	ND	30	117	80	120	101	60	140
F4 (C34-C50)	GCM0185-MAR20	µg/g	50	<50	ND	30	117	80	120	101	60	140

QC SUMMARY

pH

Method: SM 4500 I Internal ref.: ME-CA-[ENV]EWL-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
pH	ARD0051-MAR20	pH Units	0.05		0	20	100	80	120			

QC SUMMARY

Semi-Volatile Organics

Method: EPA 3541/8270D | Internal ref.: ME-CA-[ENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1-Methylnaphthalene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	79	50	140	76	50	140
2-Methylnaphthalene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	76	50	140	73	50	140
Acenaphthene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	86	50	140	83	50	140
Acenaphthylene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	84	50	140	81	50	140
Anthracene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	85	50	140	81	50	140
Benzo(a)anthracene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	80	50	140	76	50	140
Benzo(a)pyrene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	84	50	140	80	50	140
Benzo(b+j)fluoranthene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	78	50	140	75	50	140
Benzo(ghi)perylene	GCM0220-MAR20	µg/g	0.1	< 0.1	ND	40	78	50	140	69	50	140
Benzo(k)fluoranthene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	80	50	140	77	50	140
Chrysene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	83	50	140	79	50	140
Dibenzo(a,h)anthracene	GCM0220-MAR20	µg/g	0.06	< 0.06	ND	40	78	50	140	72	50	140
Fluoranthene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	88	50	140	83	50	140
Fluorene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	87	50	140	83	50	140
Indeno(1,2,3-cd)pyrene	GCM0220-MAR20	µg/g	0.1	< 0.1	ND	40	78	50	140	71	50	140
Naphthalene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	84	50	140	81	50	140
Phenanthrene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	88	50	140	83	50	140
Pyrene	GCM0220-MAR20	µg/g	0.05	< 0.05	ND	40	90	50	140	85	50	140

QC SUMMARY

Volatile Organics

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Benzene	GCM0249-MAR20	µg/g	0.02	< 0.02	ND	50	91	60	130	88	50	140
Ethylbenzene	GCM0249-MAR20	µg/g	0.05	< 0.05	ND	50	93	60	130	90	50	140
m/p-xylene	GCM0249-MAR20	µg/g	0.05	< 0.05	ND	50	93	60	130	90	50	140
o-xylene	GCM0249-MAR20	µg/g	0.05	< 0.05	ND	50	95	60	130	93	50	140
Toluene	GCM0249-MAR20	µg/g	0.05	< 0.05	ND	50	92	60	130	90	50	140

Water Soluble Boron

Method: O.Reg. 153/04 | Internal ref.: ME-CA-IENVI SPE-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Water Soluble Boron	ESG0036-MAR20	µg/g	0.5	<0.5	ND	20	101	80	120	109	70	130

QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

LEGEND

FOOTNOTES

NSS	Insufficient sample for analysis.
RL	Reporting Limit.
↑	Reporting limit raised.
↓	Reporting limit lowered.
NA	The sample was not analysed for this analyte
ND	Non Detect

Samples analysed as received. Solid samples expressed on a dry weight basis. “Temperature Upon Receipt” is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act” published by the Ministry and dated March 9, 2004 as amended.

-- End of Analytical Report --

Request for Laboratory Services and CHAIN OF CUSTODY

SGS Environment, Health & Safety - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

No: 012396 Page 1 of 1

Laboratory Information Section - Lab use only

Received By: Oleg Mozhiv
Received Date: 3/13/20 (mm/dd/yy)
Received Time: 15:40 (hr : min)
Received By (signature):
Custody Seal Present: Yes ☑ No ☐
Custody Seal Intact: Yes ☑ No ☐
Cooling Agent Present: Yes ☑ No ☐ Type: ice pack
Temperature Upon Receipt (°C): 7.7.7
LAB LIMS #: CA14629-MAR20

REPORT INFORMATION

Company: DS Consultants
Contact: Matt Zammit
Address: 40 Bell Farm Rd Unit 8, Barrie ON
Phone: 289-456-9764
Fax:
Email: Matt.Zammit@DSconsultants.ca

INVOICE INFORMATION

☑ (same as Report Information)
Company:
Contact: Pavola (Accounting)
Address:
Phone:
Email:

Quotation #:
Project #: 20-052-400
P.O. #:
Site Location/ID:

TURNAROUND TIME (TAT) REQUIRED

☑ Regular TAT (5-7days)
TAT's are quoted in business days (exclude statutory holidays & weekends).
Samples received after 6pm or on weekends: TAT begins next business day

RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days
PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date:
NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

REGULATIONS

Regulation 153/04: ☐ Table 1 ☑ Res/Park ☑ Table 2 ☐ Ind/Com ☐ Table 3 ☐ Agri/Other ☐ Table ____ Soil Texture: ☐ Coarse ☐ Medium ☐ Fine

Other Regulations: ☐ Reg 347/558 (3 Day min TAT) ☐ PWQO ☐ MMER ☐ CCME ☐ Other: ☐ MISA

Sewer By-Law: ☐ Sanitary ☐ Storm Municipality:

RECORD OF SITE CONDITION (RSC) ☐ YES ☐ NO

ANALYSIS REQUESTED

	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	# OF BOTTLES	MATRIX	Field Filtered (Y/N)	M&I: Metals & Inorganics (incl CrVI, CN,Hg pH,(B(HWS),EC,SAR-soil) (Cl, Na-water)	M&I: Full Metals Suite (ICP metals plus B(HWS-soil only) Hg, CrVI	M&I: ICP Metals only (Sb,As,Ba,Be,B,Cd,Cr,Co,Cu,Pb,Mo,Ni, Se,Ag,Ti,U,V,Zn	SVOC: PAHs only	SVOC: SVOCs (all incl PAHs, ABNs, CPs	PCB: PCBs Total ☐ Aroclor ☐	PHC: F1-F4 + BTEX	PHC: F1-F4 only (no BTEX	VOC: VOCs (all incl BTEX	VOC: BTEX only	Pest: Pesticides (Organochlorine or specify other	Other (please specify)	Sewer Use: (Specify pkg:	Water Characterization Pkg ☐ Extended ☐ General	TCLP (Specify TCLP tests ☐M&I ☐VOC ☐PCB ☐B(a)P ☐ABN ☐Ignit.	COMMENTS:
1	BH 20-1, GS1	March 11th/20	2pm	5			X			X			X									
2	BH 20-2, GS1	"	"	5			X			X			X									
3	BH 20-2, GS1 DUP	"	"	1			X															
4	BH 20-3, GS#1	"	"	5			X			X			X									
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Observations/Comments/Special Instructions

Sampled By (NAME): Matt Zammit
Signature: [signature]
Date: 03/11/20 (mm/dd/yy)

Relinquished by (NAME):
Signature:
Date: / / (mm/dd/yy)

Pink Copy - Client
Yellow & White Copy - SGS

Revision #: 1.2
Date of Issue: 09 Sept, 2019

Appendix E

Phase Two Conceptual Site Model

This Phase Two Conceptual Site Model was developed through a synthesis of the information obtained through the completion of the Phase One ESA, and the data collected as part of the Phase Two ESA.

I. Description and Assessment of:

A. Areas where potentially contaminating activity has occurred

A total of one PCA was identified in the Phase One ESA as contributing to an APEC. A summary of the PCA considered to be contributing to APECs on the Phase Two Property is provided in the table below.

PCA Item.	PCA Description (Per. Table 2, Schedule D of O.Reg. 153/04)	Description
1	PCA-1: #46 - Rail Yards, Tracks, and Spurs	According to the 1860 County Atlas, Hamilton and Northwestern Railway was historically present along the border of the west adjacent property and the Phase One Property.

B. Areas of potential environmental concern

One APEC was identified to be present on the Phase Two Property through the completion of the Phase One ESA. The APEC was associated with the Hamilton and Northwestern Railway, which was historically present along the border of the west adjacent property and the Phase One Property. The APEC encompassed the western portion of the Phase Two ESA.

C. Any subsurface structures and utilities on, in or under the Phase Two Property that may affect contaminant distribution and transport

The Phase Two Property is currently undeveloped, no buried services are present.

II. Description of, and as appropriate, figures illustrating, the physical setting of the Phase Two Property and any areas under it including:

A. Stratigraphy from ground surface to the deepest aquifer or aquitard investigated

A layer of topsoil approximately 250 to 300 mm in thickness was encountered in all of the boreholes advanced. Silty sand was encountered below the topsoil and extended to the termination depth in all three of the boreholes advanced. Bedrock was not encountered

within any of the boreholes, which were terminated at depths ranging between 1.2 to 1.5 mbgs.

It is also noted that the term "topsoil" used to describe the soil stratigraphy refers generally to the upper layers of soils that have been weathered over time, and does not imply topsoil imported to the Site. No evidence of importation was noted during the classification of any soils, and all appeared to be native to the Site. Additionally, the Phase One ESA did not identify importation of fill to the Site as a PCA.

The borehole locations are depicted on Figure 4.

B. Hydrogeological Characteristics, including aquifers, aquitards and, in each hydrostratigraphic unit where one or more contaminants is present at concentrations above the applicable site condition standards, lateral and vertical gradients

Soils were noted as saturated from between 0.3 to 0.8 mbgs in all three boreholes advanced. These data are suggestive of an unconfined aquifer, and are in line with the findings of PML (2017). However, more information would be required to definitively ascertain this and these data should not be relied upon for hydrogeological characterization purposes.

Groundwater was not identified as a media of concern by the Phase One ESA, thus no groundwater monitoring was completed at the Site.

C. Depth to bedrock

Based on a review of MECP Well Records, the bedrock in the Phase Two Study Area is anticipated to be encountered at an approximate depth range of 8.8 to 12.8 metres below ground surface (mbgs)

D. Approximate depth to water table

Groundwater was not monitored as part of this investigation.

E. Any respect in which section 41 or 43.1 of the regulation applies to the property

The pH values measured were within the acceptable limits for non-sensitive sites. There are no areas of natural significance on the Phase Two Property, or within 30 m of the Phase Two

Property. As such the Phase Two Property is not considered to be environmentally sensitive as defined by Section 41.

F. <u>Areas where soil has been brought from another property and placed on, in or under the Phase Two Property</u>

The Phase One ESA, and Phase Two ESA did not identify any indications of any imported soils.

G. <u>Approximate locations, if known, of any proposed buildings and other structures</u>

There was no indication of the Site being developed based on the records reviewed as part of the Phase One ESA. The Property was also noted as vacant for the duration of the Phase Two ESA.

It is DS's understanding that the Client intends to develop the Site for residential use, namely sub-divisions.

III. Where a contaminant is present on, in or under the Phase Two Property at a concentration greater than the applicable site condition standard, identification of

A. <u>Each area where a contaminant is present on, in or under the Phase Two Property at a concentration greater than the applicable SCS</u>

All contaminants of potential environmental concern met the applicable SCS (MECP Table 8).

B. <u>The contaminants associated with each of the areas</u>

All contaminants of potential environmental concern met the applicable SCS (MECP Table 8).

C. <u>Medium that contaminants were identified in</u>

Soil was the only media identified as being of environmental concern by the Phase One ESA. All of the analyzed contaminants of potential environmental concern met the applicable SCS (MECP Table 8).

D. <u>Description and assessment of what is know about each of the areas</u>

All contaminants of potential environmental concern met the applicable SCS (MECP Table 8).

E. Distribution in which the areas of each contaminant is present in the area at a concentration greater than the applicable SCS, for each medium in which the contaminant is present, together with figures showing the distribution

All contaminants of potential environmental concern met the applicable SCS (MECP Table 8).

F. Anything know about the reason for the discharge of the contaminants present on, in or under the Phase Two Property at a concentrations greater than the applicable SCS

All contaminants of potential environmental concern met the applicable SCS (MECP Table 8).

G. Anything known about migration of the contaminants present on, in or under the phase two property at a concentration greater than the applicable SCS away from any area of potential environmental concern, including the identification of any preferential pathways

All contaminants of potential environmental concern met the applicable SCS (MECP Table 8).

H. Climatic or meteorological conditions that may have influenced distribution and migration of the contaminants, such as temporal fluctuations in groundwater levels

All contaminants of potential environmental concern met the applicable SCS (MECP Table 8) in soil. Groundwater was not identified as being a media of environmental concern. Additionally, the Site was observed to be in a natural condition at the time of the Phase Two ESA. Therefore it is the opinion of the QP that the meteorological and climatic conditions have had minimal influence on the migration of contaminants on the Phase Two Property.

I. Information concerning soil vapour intrusion of the contaminants into buildings

No volatile parameters were identified at concentrations greater than the applicable SCS. Additionally, no buildings were present on the Phase Two Property. Therefore vapour intrusion is not considered to be an exposure pathway at this time.

IV. Where contaminants on, in or under the Phase Two Property are present at concentrations greater than the applicable SCS, one or more cross-sections showing

- **A. <u>The lateral and vertical distribution of a contaminant in each area where the contaminants are present at concentrations greater than the applicable SCS in soil, groundwater and sediment</u>**
- **B. <u>Approximate depth to water table</u>**
- **C. <u>Stratigraphy from ground surface to the deepest aquifer or aquitard investigated</u>**
- **D. <u>Any subsurface structures and utilities that may affect contaminants distribution and transport</u>**

Not Applicable - all contaminants of potential environmental concern met the applicable SCS (MECP Table 8).

V. For each area where a contaminant is present on, in or under the property at a concentration greater than the applicable SCS for the contaminant, a diagram identifying, with narrative explanatory notes

- **A. The release mechanisms**
- **B. Contaminant transport pathway**
- **C. The human and ecological receptors located on, in or under the phase two property**
- **D. Receptor exposure points**
- **E. Routes of exposure**

Not Applicable - all contaminants of potential environmental concern met the applicable SCS (MECP Table 8).

VI. If a non-standard delineation was conducted in accordance with section 7.1 of this Schedule as part of preparing the phase two environmental site assessment report, provide a narrative description of how the non-standard delineation satisfies the requirements in that section.

VII. If the exemption set out in paragraph 1, 1.1 or 2 of section 49.1 of the regulation is being relied upon, provide a statement as to the reliance upon the exemption and a narrative description of the rationale for relying upon

the exemption, which may be based on information gathered during the site investigation.

VIII. If the exemption set out in paragraph 3 of section 49.1 of the regulation is being relied upon, provide,
i. a statement as to the reliance upon the exemption,
ii. a narrative description of the rationale for relying upon the exemption, which may be based on information gathered during the site investigation, and
iii. one or more cross-sections and one or more figures in plan view of the phase two property that demonstrate, through identification of sample locations, sample depths and contaminant concentrations, the distribution of the contaminant in question laterally and vertically and the range of concentrations of that contaminant on, in or under the phase two property.

Not Applicable - all contaminants of potential environmental concern met the applicable SCS (MECP Table 8).