Phase Two Environmental Site Assessment

3270 Sixth Line

Oakville, Ontario

Prepared For:

Argo (West Morrison Creek) Limited

2173 Turnberry Road

Burlington, ON

L7M 4P8

DS Project No: 17-508-100

Date: 2019-09-06

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Executive Summary

DS Consultants Ltd. (DS) was retained by Argo (West Morrison Creek) Limited (the "Client") to conduct a Phase Two Environmental Site Assessment (ESA) of the Property located at 3270 Sixth Line, Oakville, Ontario, herein referred to as the "Phase Two Property". DS understands that this Phase Two ESA may be used to support the filing of a Record of Site Condition (RSC) as part of the proposed redevelopment of the Phase Two Property for residential purposes.

It is the opinion of DS that the intended future property use (residential) constitutes a more sensitive property use, as defined under O.Reg. 153/04 (as amended). Given that the proposed change in property use is to a more sensitive property use, the filing of a Record of Site Condition (RSC) with the Ontario Ministry of Environment, Conservation and Parks (MECP) will be mandated under O.Reg. 153/04 (as amended).

The Phase Two ESA was completed to satisfy the intent of 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 is to confirm whether contaminants are present, and at what concentration are they present on the Phase Two Property, as related to the Areas of Potential Environmental Concern (APEC) identified in the Phase One ESA.

The Phase Two Property is a 12.58-hectare (31.08 acres) parcel of land situated within mixed residential and agricultural neighbourhood in the Town of Oakville, Ontario. The Phase Two Property is located approximately 1-kilometre (km) north of the intersection of Dundas Street West and Sixth Line and was vacant at the time of this investigation.

The Phase Two Property was historically operated as an agricultural field with a residential dwelling, from the late 1800s to the late 1900s. The southeast corner of the Property has been occupied by cellular communication tower (commercial use) from the early 2000s until approximately 2017 when the tower was demolished. A total of three (3) Potentially Contaminating Activities (PCAs) were identified in the Phase One ESA, which were considered to be contributing to three (3) APECs on the Phase Two Property. A summary of the APECs, associated PCAs, and contaminants of potential concern (COPC) identified is presented in the table below:

Table 1-1: Summary of APECs

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC-1	On-site	PCA#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications - Historical use of the Property for agricultural purposes	On Site	OC Pesticides	Soil and Ground water
APEC-2	Southeast portion of the Property	PCA#30 Importation of Fill Material of Unknown Quality - Inferred presence of fill material on-Site,	On Site	PHCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR	Soil
APEC-3	Within the vicinity of the historical communication tower on the southeast portion of the site.	PCA#28 Gasoline and Associated Products Storage in Fixed Tanks - Historical use of the portion of the Property for Roger Cell Tower	On Site	PHC (F1-F4), BTEX	Soil and Ground water

Based on the findings of the Phase One ESA it was concluded that a Phase Two ESA is warranted in order to assess the soil and groundwater conditions on the Phase Two Property.

The Phase Two ESA involved the advancement of thirteen (13) boreholes and twelve (12) test pits, which was completed between November 2017 and January 2018. The boreholes were advanced to a maximum depth of 5.0 metres below ground surface (mbgs) under the supervision of DS personnel. Groundwater monitoring wells were installed in six (6) of the boreholes to facilitate the collection of groundwater samples and the assessment of groundwater flow direction. The borehole locations were determined based on the findings of the Phase One ESA. All APECs were investigated with boreholes and/or monitoring wells in accordance with the requirements of O.Reg. 153/04 (as amended). Soil and groundwater samples were collected and submitted for analysis of all PCOCs, including metals and ORPs, PHCs, BTEX and OCPs.

The soil and groundwater analytical results were compared to the "Table 1: Full Depth Background Site Condition Standards" 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 1 SCS*)* for residential/parkland /institutional/industrial/commercial/community property use.

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

- A surficial layer of topsoil approximately 125 to 300 mm thick was encountered in boreholes BH17-1R to BH17-7R and BH17-1N to BH17-3N. Underlaying this is a fill layer in boreholes BH17-1T, BH17-2T, and BH17-3T extending approximately 1.5 to 3.1 mbgs or, in the remaining boreholes, a weathered/disturbed layer of native clayey silt approximately 0.4 to 0.8 mbgs. This was underlaid by a silty clay till which was found in all the boreholes, except BH17-1T & BH17-2T. This layer extended until bedrock. Shale bedrock was encountered in all boreholes and range between 1.5 to 4.6mbgs with corresponding elevations of 171.1 and 172.8 masl.
- A total of ten (10) groundwater monitoring events were completed between July 2017 and July 2018. The depth to groundwater was found to range between 2.75 to 5.08 mbgs on January 9, 2018, and between 2.18 to 3.75 mbgs on July 31, 2018. The groundwater flow direction was calculated to be southeasterly based on the July 31, 2018 groundwater level measurements. It is possible that the groundwater levels may vary seasonally. The groundwater levels may also be impacted by other factors such as historical infilling activities, subsurface utility trenches, and similar subsurface anomalies. The groundwater flow direction can only be confirmed through long term monitoring.
- Mixed fill containing varies aesthetic impacts including wood, construction debris, plastic, glass and concrete was observed in test pits TP3r, TP4r, TP5r, TP6r, TP7r, TP8r and TP10r. Faint petroleum-like odours were also observed in test pits TP3r and TP4r at depths ranging between 0-0.6 mbgs.
- PHC and BTEX impacts were identified in test pits TP3r and TP4r at depths ranging between 0-0.6 mbgs. All of the remaining soil samples analysed met the MECP Table 1 SCS.
- The PHC impacts in soil were remediated on November 26, 2018 through the bulk excavation and off-site disposal of the impacted soils in the vicinity of TP3r and TP4r. Approximately 18 cubic metres of soil was excavated and disposed of at a licensed

MECP facility. The confirmatory sampling conducted on November 26, 2018 verified that the remedial activities had been successful.

- Groundwater samples were collected from four (4) monitoring wells and submitted for analysis of metals and ORPs, PHCs, VOCs and OCPs. The results of the chemical analyses indicated that all samples met the MECP Table 1 SCS, with the exception of sample MW1D-17 which exceeded the Table 1 SCS for uranium. No anthropogenic source of uranium impacts in groundwater has been identified. This has been attributed to natural background conditions and is not considered to be contamination as defined under the EPA.
- Approximately 20 cubic metres of fill material was imported to the Property on November 28, 2018 to backfill the remedial excavation. Verification sampling conducted on November 27, 2018 indicated that the import fill meets the Applicable MECP Table 1 SCS.

Based on a review of the findings of this Phase Two ESA, DS presents the following conclusions and recommendations:

- The PHC impacts in soil were successfully remediated on November 26, 2018 through the bulk excavation and off-site disposal of the impacted soils in the vicinity of TP3r and TP4r. The remaining soils on-Site meet the applicable MECP Table 1 SCS.
- Uranium impacts were identified in groundwater sampled from monitoring well MW1D-17. The elevated levels of uranium are considered by the QP_{ESA} to be naturally occurring, and not contamination as defined in the Environmental Protection Act. As such, the groundwater the Phase Two Property is considered to meet the Table 1 SCS.
- All monitoring wells should be decommissioned in accordance with O.Reg. 903 when no longer required.

It is the opinion of the QP_{ESA} that the applicable SCS for the soil and groundwater at the Phase Two Property have been met as of the Certification Date of November 27, 2018. No further sub-surface investigation is required regarding the environmental quality of the soil and groundwater at the Phase Two Property. A Record of Site Condition may be filed for the Phase Two Property based on the findings of this investigation.

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1.0 Introduction

DS Consultants Ltd. (DS) was retained by Argo (West Morrison Creek) Limited to complete a Phase Two Environmental Site Assessment (ESA) of the Property located at 3270 Sixth Line, Oakville, Ontario, herein referred to as the "Phase Two Property" or "Site". It is DS's understanding that this Phase Two ESA has been requested for due diligence purposes in association with the proposed redevelopment of the Property. DS understands that this Phase Two ESA may be used to support the filing of a Record of Site Condition (RSC) as part of the proposed redevelopment of the Site for residential purposes.

It is the opinion of DS that the intended future property use (residential) constitutes a more sensitive property use, as defined under O.Reg. 153/04 (as amended). Given that the proposed change in property use is to a more sensitive property use, the filing of a Record of Site Condition (RSC) with the Ontario Ministry of Environment, Conservation and Parks (MECP) will be mandated under O.Reg. 153/04 (as amended).

The Phase Two ESA was completed to satisfy the intent of 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 is to confirm whether contaminants are present, and at what concentration are they present 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 12.58-hectare (31.08 acres) parcel of land situated within a mixed residential and agricultural neighbourhood in the Town of Oakville, Ontario. The Phase Two Property is located approximately 1km north of the intersection of Dundas Street West and Sixth Line and was vacant at the time of this investigation. A Site Location Plan is provided in Figure 1.

For the purposes of this report, Dundas Street West is assumed to be aligned in an east-west orientation, and Sixth Line in a north-south orientation. A Plan of Survey for the Property dated November 7, 2016 and prepared by J.D. Barnes Limited, an Ontario Land Surveyor, has been provided under Appendix A.

The Property was undeveloped and included no structures at the time of this investigation. The Property was previously developed with a residential house, three (3) detached storage sheds, and a cellular communication tower, all of which were located in the southeast corner of the Property and have been demolished.

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 of the Lot 16, Concession 1, North of Dundas Street, PART 1 20R13395 and Part 1 20R13449, Oakville, Regional Municipality of Halton	Legal Survey
Property Identification Number (PIN)	24929-0058 (LT) 24929-0192 (LT)	Legal Survey
Municipal Address	3270 Sixth Line, Oakville, Ontario	Town of Oakville
Zoning	Existing Development (ED)	Town of Oakville
Current Site Occupants	Emilia Marchetti	Client
Site Area	12.58 hectares (31.08 acres)	Legal Survey
Centroid UTM Coordinates	Northing: 4817843.04 Easting: 604576.64 Zone: 17T	Legal Survey

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
Mr. Kevin Singh	2173 Turnberry Road Burlington, ON, L7M 4P8	Email: kevin@argoland.com

1.3 Current and Proposed Future Use

The Phase Two Property is currently vacant. The last use of the property was considered to be commercial property use under O.Reg. 153/04 (as amended), due to the historical presence of a cellular communication tower on the Property. It is DS's understanding that the Client intends to redevelop the Site for residential use.

1.4 Applicable Site Condition Standards

The Phase Two Property is a vacant property located within the Town of Oakville, and the proposed future land use is residential. According to Conservation Halton, a wetland is located on the south adjacent property.

Under Section 41 of O.Reg. 153/04 (as amended), the Site is classified as "environmentally sensitive" if the pH of the surface soil (ground surface to 1.5 metres below ground surface) is less than 5 or greater than 9, if the subsurface soil (deeper than 1.5 mbgs) is less than 5 or

greater than 11, or if the Site is considered to be an area of natural significance or is adjacent to or contains land within 30 metres of an area of natural significance.

Based on a review of the Halton Region Official Plan and the Town of Oakville Official Plan, the Site is located within an area of natural significance (Natural Heritage Area). As such, the Phase Two Property is considered to be environmentally sensitive.

As a result, the soil and groundwater analytical results were compared to the "Table 1: Full Depth Background Site Condition Standards" 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 1 SCS*)* for residential/parkland /institutional/industrial/commercial/community property use.

2.0 Background Information

2.1 Physical Setting

2.1.1 Water Bodies and Areas of Natural Significance

A tributary of Morrison Creek is the closest body of water to the Phase Two Property, located along the northern boundary of the Property.

The Natural Heritage Areas database published by the Ministry of Natural Resources (MNR) was reviewed in order to identify the presence/absence of areas of natural significance including provincial parks, conservation reserves, areas of natural and scientific interest, wetlands, environmentally significant areas, habitats of threatened or endangered species, and wilderness areas. The Halton Region and Town of Oakville Official Plans, as well as Conservation Halton were also reviewed as part of this assessment.

A review of these databases indicated the Northern Bobwhite as an endangered within 1 km of the Site, according to the MNRF. The North Oakville-Milton East Wetland complex is present on the south adjacent property and on the southern boarder of the Property, according to the MNRF and Conservation Halton. According to the Halton Region Official Plan the Property is located within a Regional Natural Heritage System.

According to the MNRF, the Northern Bobwhite is a bird that prefers abandoned farm field and grassland areas, during the winter they are known to migrate to mildly forested areas. As the Property is located within a developed residential/agricultural neighborhood, it is not likely to provide a viable habitat for such species.

If required, an environmental specialist could be retained to undertake a site-specific ecological assessment, however at this time further assessment is not warranted.

2.1.2 Topography and Surface Water Draining Features

The Phase Two Property is located in an urban setting, at an elevation of 176 metres above sea level (masl). The topography of the Phase Two Property is generally flat, with a slight slope to the southeast towards Morrison Creek. The neighbouring property are generally at a similar elevation. There are no drainage features (e.g. ditches, swales, etc.) present on-Site. Surface water flow associated with precipitation events is anticipated infiltrate locally or run overland and drain into the tributary located on the south adjacent property.

2.2 Past Investigations

2.2.1 Previous Report Summary

DS reviewed the following environmental report prepared for the Property. The report was provided by the client to DS.

- *"Summary of Findings of Phase I Environmental Site Assessment, Part Lot 16, Concession 1, North of Dundas Street (Including 3270 Sixth Line), Oakville, Ontario (Marchetti Property)",* prepared for Argo Developments Corporation, prepared by Sirati & Partners Consultants Ltd., dated February 21, 2017 (SPCL 2017 Phase One Summary)*; and*
- *"Geotechnical Investigation, Proposes Residential Subdivision-3270 Sixth Line, Oakville, ON",* prepared for Argo Developments Corporation, prepared by DS Consultants, dated April 2, 2018 (DS 2018 Geotech Investigation)*;*

These reports were reviewed in order to assess 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. A summary of the pertinent details of the reports reviewed is provided below:

SPCL 2017 Phase One Summary

The SPCL 2017 Phase One ESA was conducted in general accordance with CSA document entitled "Phase I Environmental Site Assessment" (CSA Document Z768-01), dated November 2001 (reaffirmed 2006), and included a review of readily available historical records and reasonably ascertainable regulatory information, a Site Reconnaissance, interviews, evaluation of information, and reporting. The following pertinent information was noted by DS:

- The Phase One Property was previously used for both agricultural purposes until 1999 when a cell tower was built in the southeastern portion of the Site.

- First developed use of the Phase One Property was determined to be agricultural, when the crown patent was issued to William Freeman in 1908.
- Four potentially contaminating activities were identified:
  - Electrical transformers associated with the former cell tower;
  - Piles of debris located on the property;
  - Fill material of unknown quality was present on the Phase One Property; and
  - The property was used as an agricultural field for over 100 years, it is possible that pesticides were historically used.
- A historical watering well is located on the Phase One Property.

SPCL concluded that the portion of the property where the cell tower was previously located would require a Phase One ESA, a Phase Two ESA, and an RSC in accordance with O.Reg. 153/04 would be required if the property were to be redeveloped for residential purposes. SPCL also concluded that the watering well observed on the Phase One Property should be located and decommissioned in accordance with O.Reg. 903.

DS 2018 Geotechnical Investigation

The DS 2018 Geotechnical Investigation was conducted in order to investigate the subsurface conditions in order to provide preliminary recommendations pertaining to the geotechnical design of underground utilities. The investigation involved the advancement of thirteen (13) boreholes in November 2017. Upon borehole completion, six (6) monitoring wells were installed for purposes of groundwater level monitoring.

A 125 to 300mm thick layer of surficial topsoil was found on the Phase One Property. Underlaying this was a layer of fill material extending approximately 1.5 to 3.1 meters below ground surface (mbgs). Or, a layer of weathered/disturbed till was observed extending approximately 0.6 to 1.0 mbgs. This was underlain by a silty clay till which was underlaid by Shale Bedrock, which was encountered at depths ranging from 1.5 to 4.6 mbgs with corresponding elevations of 171.1 and 172.8 masl.

Groundwater was encountered in all of the monitoring wells advanced by DS on the Phase One Property. On January 24, 2018 groundwater levels ranged approximately 0.6 to 4.6 mbgs.

3.0 Scope of the Investigation

The scope of the Phase Two ESA was designed 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 private underground utility services prior to commencement of subsurface investigative operations;
- Preparation of a Sampling and Analysis Plan (SAP);
- Retained a MECP licenced driller to advance a total of thirteen (13) boreholes on the Phase Two Property, to depths ranging between 2.9 to 5.0 mbgs. Six (6) 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 an RKI Eagle 2 MultiGas Detector, and examined for visual and olfactory indications of soil impacts;
- Advanced twelve (12) test pits using an excavator to depths ranging from 1.3 to 2.7 mbgs.
- Submitted "worst case" soil samples collected from the boreholes and test pits 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	Included	Groundwater was identified as a media of potential impact in the Phase One ESA, based on the historical operations conducted on-Site.
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 thirteen (13) boreholes were advanced on the Phase Two Property, to a maximum depth of 5.0 mbgs. Twelve (12) test pits were advanced on the Phase Two Property to a maximum depth of 2.7 mbgs. Soil samples were collected and submitted for analysis of all relevant PCOCs.
Groundwater	A total of four (4) monitoring wells were selected for use in assessing the groundwater quality on the Phase Two Property. Representative groundwater samples were collected from each monitoring well and submitted for analysis of all relevant PCOCs.

3.3 Phase One Conceptual Site Model

A Conceptual Site Model was developed for the Phase One Property, located at 3270 Sixth Line, Oakville, Ontario. The Phase One Conceptual Site Model is presented in Drawings 3A, 3B, and 4 and visually depict the following:

- Any existing buildings and structures
- Water bodies located in whole, or in part, on the Phase One Study Area
- Areas of natural significance located in whole, or in part, on 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
- 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 and discussed in the Phase One ESA 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#40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	Historical use of the Property for agricultural purposes	Yes – APEC1
2	PCA#30: Importation of Fill Material of Unknown Quality	Fill material is anticipated in the vicinity of the historical residential home, storage buildings, and communication tower.	Yes – APEC 2
3	PCA#28: Gasoline and Associated Products Storage in Fixed Tanks	Historical presence of a generator used to service the historical communication tower.	Yes – APEC 3

3.3.2 Contaminants of Potential Concern

The following contaminants of potential concern were identified for the Phase One Property: PHC (F1-F4), BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR, and OCPs.

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.

Underground utilities were not identified at the Phase One Property. It is not anticipated that any historical utilities present would have the potential to act as preferential pathways for contaminant transport.

3.3.4 Geological and Hydrogeological Information

The topography of the Phase One Property is generally flat, with a surface elevation of 176 metres above sea level (masl). The topography within the Phase One Study Area generally slopes to the southeasterly, towards Morrison Creek, located approximately 1.5 km southeast of the Phase One Property. A tributary of Morrison Creek is the nearest body of water to the Phase One Property and is located on the north adjacent property

approximately. Based on a review of the MECP well records, the depth to groundwater in the vicinity of the Phase One Property is approximately 13.3-17.1 mbgs. The shallow groundwater flow direction within the Phase One Study Area is inferred to be southeasterly towards Morrison Creek.

The northern portion of the site is situated within a till moraine physiographic region, while the southern portion of the site is situated within a drumlinized till plain physiographic region. The surficial geology within the Phase One Study area is described as "clay to silt textured till derived from glaciolacustrine deposits or shale", and the bedrock is described as "shale, limestone, dolostone, and siltstone of the Queenston 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 3.0 to 10.0 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. 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. 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 Property, anticipated direction of local groundwater flow, and the potential environmental impact on the 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	Terra Firma Environmental Services Ltd. (Terra Firma), Toronto, Ontario
Drilling Dates	November 14 and 15, 2017
Drilling Equipment Used	CME55 Hollow and solid stem 2-inch split spoon soil sampling device
Measures taken to minimize the potential for cross contamination	◆ Soil sampling was conducted using a 50 mm stainless steel split spoon sampler. The split spoon sampler was brushed clean of soil, washed in municipal water containing phosphate free detergent, rinsed in municipal water, and then rinsed with distilled water for each sampling interval in order to reduce the potential for cross contamination; ◆ Soil samples were extracted from the interior of the sampler rather than from areas in contact with the sampler sidewalls;

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 frequency of every 0.6 m per 0.8 m from the ground surface to 3.1 mbgs, followed by one sample per 1.5 m to borehole termination depth.

Table 4-2: Summary of Test Pitting Activities

Parameter	Details
Drilling Contractor	Provided by Client
Drilling Dates	January 18, 2018
Drilling Equipment Used	Excavator
Measures taken to minimize the potential for cross contamination	◆ Soil sampling was conducted using an excavator. ◆ Soil samples were extracted from the interior of the excavator bucket rather than from areas in contact with the sampler sidewalls; ◆ 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 an approximate frequency of every 0.8 m.

4.3 Soil Sampling

Soil samples were collected using a combination of split spoon samplers and via excavator. Discrete soil samples were collected by DS personnel using dedicated nitrile gloves.

A portion of each sample was placed in a resealable 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 5.1 and depicted visually in Figures 9 and 10.

4.4 Field Screening Measurements

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 4-3: Field Screening Equipment

Parameter	Details
Make and Model of Field Screening Instrument	RKI Eagle 2, Model 5101-P2 Serial Number: E2A292
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 RKI Eagle 2 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 is provided in the borehole logs, provided under Appendix C.

4.5 Groundwater Monitoring Well Installation

Monitoring wells were installed upon completion of six (6) of the boreholes advanced on the Phase Two Property. The monitoring wells were constructed of 51-millimetre (2-inch) inner diameter (ID) flush-threaded schedule 40 polyvinyl chloride (PVC) risers, equipped with a

1.5 m or 3.5m length of No. 10 slot PVC screen. The well screens were sealed at the bottom using a threaded cap and at the top with a lockable J-plug.

Silica sand was placed around and up to 0.6m above the well screen to act as a filter pack. Bentonite was placed from the ground surface to the top of the sand pack. The wells were completed with protective aboveground monument casings.

Details regarding the monitoring well construction can be found in Table 1, and on the borehole logs provided in Appendix C.

Disposable nitrile gloves were used to minimize the potential for cross-contamination during well installation. Dedicated equipment was used for well development and sampling for further minimize the risk of cross contamination.

The monitoring wells were developed on January 18, 2018. In accordance with DS SOPs for monitoring well development, the wells were developed by purging the monitoring wells dry and allowing them to recover three (3) times using dedicated inertial pumps comprised of Waterra polyethylene tubing and dedicated foot valves.

4.6 Groundwater Field Measurement of Water Quality Parameters

Field measurements of water quality parameters including temperature, specific conductivity, pH, turbidity, dissolved oxygen, oxidation-reduction potential and turbidity were not collected, due to the low yield and slow recovery of the monitoring wells.

During well development and purging, ground water samples were visually screened for turbidity, suspended solids, odour, or sheen. No sheen, free product or odour were observed in the wells.

4.7 Groundwater Sampling

Groundwater samples were collected a minimum of 24 hours after the development of the monitoring wells. The wells were purged using dedicated polyethylene bailers.

Samples were collected upon stabilization of the water quality parameters. Groundwater samples for metals analysis were field filtered using dedicated 0.45 micro in-line filters. The groundwater was transferred directly into laboratory supplied containers and preserved as appropriate using the containers supplied by the analytical laboratory. The samples were placed in coolers upon completion of sampling and stored on ice for storage, pending transport to the analytical laboratory. A formal chain of custody was maintained for all samples submitted to the laboratory.

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 and groundwater samples collected were submitted to AGAT Laboratories under chain of custody protocols. AGAT is an independent laboratory accredited by the Canadian Association for Laboratory Accreditation. AGAT 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

Excess water derived from well purging activities was stored in 20-L sealed plastic pails, and temporarily stored on site. Upon receipt of the analytical results it was determined that the purged groundwater meets the applicable Table 1 SCS. Based on this the purged groundwater was allowed to re-infiltrate adjacent to the monitoring wells.

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

The borehole and monitoring well locations were surveyed using a Sokkia GCX-2 GNSS RTK receiver, referenced to a local benchmark (ID #04519910058) with an elevation of 174 metres above sea level.

The ground surface elevations can be found on the borehole logs presented in Appendix C.

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 and groundwater 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 4-4: Summary of Sample Bottle Preservatives

Media	Parameter	Sample Container
Soil	PHCs F1 VOCs	40 mL methanol preserved glass vial with septum lid.
	PHCs F2-F4 metals and ORPs PAHs	120 mL or 250 mL unpreserved glass jar with Teflon™-lined lid.
Groundwater	PHCs F1 VOCs	40 mL glass vial with septum lid, containing sodium bisulphate preservative.
	PHCs F2-F4	250 mL amber glass bottle with sodium bisulphate preservative
	PAHs	250 mL amber glass bottle (unpreserved)
	Inorganics	500 mL high density polyethylene bottle (unpreserved)
Groundwater	Metals	125 mL high density polyethylene bottle containing nitric acid preservative
	Hexavalent Chromium	125 mL high density polyethylene bottle containing ammonium sulphate/ammonium hydroxide preservative
	Mercury	125 mL glass bottle containing hydrochloric acid preservative
	Cyanide	125 mL high density polyethylene bottle containing sodium hydroxide preservative

Groundwater samples were collected using dedicated equipment for each well. Groundwater samples collected for analysis of dissolved metals, mercury and hexavalent chromium were filtered in the field using a dedicated 0.45-micron in-line filter. 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 split spoon sampler was brushed clean of soil, washed in municipal water containing phosphate free detergent, rinsed in municipal water, and then rinsed with distilled water for each sampling interval in order to reduce the potential for cross contamination. Dedicated equipment was used for well development and sampling for further minimize the risk of cross contamination. Non-dedicated equipment (i.e. interface probe) was cleaned before initial use and between all measurement points with a solution of Alconox™ and distilled water. The Alconox™ solution was rinsed off using distilled water.

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. A laboratory prepared trip blank accompanied the groundwater samples during each sampling event and was submitted for laboratory analysis of VOCs.

All field screening devices (e.g. RKI Eagle 2) were 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 surficial layer of topsoil approximately 125 to 300 mm thick was encountered in boreholes BH17-1R to BH17-7R and BH17-1N to BH17-3N. Underlaying this is a fill layer in boreholes BH17-1T, BH17-2T, and BH17-3T extending approximately 1.5 to 3.1 mbgs or, in the remaining boreholes, a weathered/disturbed layer of native clayey silt approximately 0.4 to 0.8 mbgs. This was underlaid by a silty clay till which was found in all the boreholes, except BH17-1T & BH17-2T. This layer extended until bedrock. Shale bedrock was encountered in all boreholes and range between 1.5 to 4.6mbgs with corresponding elevations of 171.1 and 172.8 masl.

Table 5-1: Summary of Geologic Units Investigated

Geologic Unit	Inferred Thickness (m)	Top Elevation (masl)	Bottom Elevation (masl)	Properties
Topsoil	0.13-0.30	177.2	173.09	
Fill Material	0.79-3.1	174.87	171.3	Clayey silt to silty clay, trace to some organics, wood pieces, trace shale fragments
Clayey Silt	0.6-1.0	177.1	173.1	Some sand, reddish brown.
Silty Clay Till	0.5-3.8	176.4	171.1	Water bearing formation, some sand, trace gravel, occasional cobble/boulder
Shale Bedrock	-	172.8	-	Queenston Formation

5.2 Ground Water Elevations and Flow Direction

5.2.1 Rationale for Monitoring Well Location and Well Screen Intervals

A total of six (6) monitoring wells were installed on the Phase Two Property in order to assess the groundwater quality in relation to APEC-1 and APEC-3. The COPCs associated with these APECs were OCPs, PHCs, BTEX, Metals, As, Sb, Se, B- HWS, CN-, Chloride, Sodium, Cr (VI), and Hg. The monitoring wells were screened to intersect the first water bearing formation encountered, in order to allow for the assessment of LNAPL, and to provide information regarding the quality of the groundwater at the water table. The monitoring wells were screened within the silty clay till unit with bottom depths ranging from 2.9 to 5.5 mbgs. This unit is inferred to be an unconfined aquifer.

5.2.2 Results of Interface Probe Measurements

A total of ten (10) groundwater monitoring events were completed between July 2017 and July 2018. A summary of the groundwater level measurements is provided in Table 1. The groundwater level measurements were collected using a Solinst interface probe model 122. The depth to groundwater was found to range between 2.75 to 5.08 mbgs on January 9, 2018, and between 2.18 to 3.75 mbgs on July 31, 2018. There was no indication of DNAPL or LNAPL in the monitoring wells during any of the groundwater monitoring events.

5.2.3 Product Thickness and Free Flowing Product

No evidence of product was observed in the monitoring wells at the time of the investigation.

5.2.4 Groundwater Elevation

The groundwater elevation was calculated by subtracting the depth to groundwater from the surface elevation determined by the surface elevation survey conducted as part of this investigation. A summary of the groundwater elevations calculated is presented in Table 1. Generally, the groundwater elevation was found to range from 169.90. to 177.10 masl in the aquifer investigated.

5.2.5 Groundwater Flow Direction

The groundwater flow direction was interpreted using the groundwater elevations calculated for the monitoring wells installed on the Phase Two Property. Based on the groundwater elevations calculated, the groundwater flow direction is interpreted to be southeasterly towards an unnamed creek. The groundwater elevation contours and flow direction are presented on Figure 5.

5.2.6 Assessment of Potential for Temporal Variability in Groundwater Flow Direction

The shallow aquifer investigated is inferred to be an unconfined aquifer, based on the soil stratigraphy observed in the boreholes advanced on the Phase Two Property. It is possible that temporal variations in groundwater elevations may occur on the Phase Two Property in response to seasonal weather patterns.

In general, the depth to groundwater was found to fluctuate approximately 2 metres between winter and summer monitoring events.

Temporal variability in groundwater level has the ability to influence the groundwater flow direction. The degree of variation in groundwater levels on the Phase Two Property can only be confirmed with long-term monitoring.

5.2.7 Evaluation of Potential Interaction Between Buried Utilities and the Water Table

The Phase Two Property is currently undeveloped, no buried services are present. All historical buried utilities have been decommissioned.

5.3 Ground Water Hydraulic Gradients

5.3.1 Horizontal Hydraulic Gradient

The horizontal hydraulic gradient was calculated based on the groundwater levels recorded on July 31, 2018.

Table 5-2: Summary of Horizontal Hydraulic Gradient Calculations

Hydrogeological Unit	Calculated Horizontal Hydraulic Gradient
Overburden – (silty clay till)	Minimum:0.006 Average: 0.0061 Maximum:0.0066

5.3.2 Vertical Hydraulic Gradient

The vertical hydraulic gradient was calculated based on the groundwater levels recorded on July 31, 2018.

Table 5-3: Summary of Vertical Hydraulic Gradient Calculations

Monitoring Well Nest	Calculated Vertical Hydraulic Gradient
MW1S-17 MW1D-17	0.7546 (downward)

5.4 Fine-Medium Soil Texture

5.4.1 Rational for use of Fine-Medium Soil Texture Category

A total of four (4) grain size analyses were conducted as part of this investigation. The results of the grain size analyses indicate that more than two-thirds of the soils encountered are medium to fine textured.

5.4.2 Results of Grain Size Analysis

A summary of the soil samples analyzed, and the corresponding grain size results is presented in the table below:

Table 5-4: Summary of Grain Size Analyses

Sample	% Gravel	% Sand	% Silt	% Clay	Classification
BH17-1R SS2	3%	20%	57%	20%	Fine-textured
BH17-4R SS2	5%	15%	56%	56%	Fine-textured
BH17-1N SS2	12%	17%	49%	22%	Fine-textured
BH17-3R SS2	3%	19%	53%	25%	Fine-textured

5.4.3 Rational for the Number of Samples Collected and Analyzed

The grain size analyses were conducted for the purposes of this Phase Two ESA, in addition to a geotechnical investigation which was conducted concurrently. At least one sample was analyzed per stratigraphic unit encountered in order to characterize the various strata encountered.

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 an RKI Eagle-2 multi-gas detector in methane elimination mode. The CGD readings ranged between 2.3 and 15.4 ppm.

The soil samples were also screened for visual and olfactory indicators of impacts (e.g. staining, odours). Mixed fill containing varies aesthetic impacts including wood, construction debris, plastic, glass and concrete was observed in test pits TP3r, TP4r, TP5r, TP6r, TP7r, TP8r and TP10r. Faint petroleum-like odours were also observed in test pits TP3r and TP4r at depths ranging between 0-0.6 mbgs.

No staining, orders, sheening or evidences of LNAPL or DNAPL were present at the time of sampling.

5.6 Soil Quality

The results of the chemical analyses conducted are presented in Tables 5 through 8. A visual summary of the location of the sample locations is provided in Figures 6A through 6C. The laboratory certificates of analysis have been provided under Appendix D.

5.6.1 Metals and ORPs

A total of seventeen (17) samples, including three (3) field duplicates for QA/QC purposes were submitted for analysis of metals and ORPs. The results of the analyses are tabulated in Table 5 and presented on Figure 6A. The results of the analyses indicated that there were no exceedances of the Table 1 SCS.

5.6.2 Petroleum Hydrocarbons

A total of eleven (11) samples, including one (1) field duplicates for QA/QC purposes were submitted for analysis of PHCs (incl. BTEX). The results of the analyses are tabulated in Table 6 and presented on Figure 6B. The results of the analyses indicated the following exceedances of the Table 1 SCS:

Table 5-5: Summary of PHCs in Soil

Sample ID	Sample Depth (mbgs)	Parameter	Units	Table 1 SCS	Reported Value
TP3r GS1	0-0.4	Benzene	µg/g	0.02	**0.63**
		Toluene	µg/g	0.2	**3.8**

Sample ID	Sample Depth (mbgs)	Parameter	Units	Table 1 SCS	Reported Value
		Ethylbenzene	µg/g	0.05	**1.4**
		Xylene Mixture	µg/g	0.05	**7.7**
		F1 (C6 to C10)	µg/g	25	**61**
		F1 (C6 to C10) minus BTEX	µg/g	25	**47**
		F2 (C10 to C16)	µg/g	10	**27**
		F3 (C16 to C34)	µg/g	240	**270**
TP3r GS0Dup (Duplicate of TP3r GS1)	0-0.4	Benzene	µg/g	0.02	**0.81**
		Toluene	µg/g	0.2	**4.6**
		Ethylbenzene	µg/g	0.05	**1.5**
		Xylene Mixture	µg/g	0.05	**9.5**
		F1 (C6 to C10)	µg/g	25	**79**
		F1 (C6 to C10) minus BTEX	µg/g	25	**63**
		F2 (C10 to C16)	µg/g	10	**30**
		F3 (C16 to C34)	µg/g	240	**300**
TP4r GS1	0-0.6	Toluene	µg/g	0.2	**0.57**
		Ethylbenzene	µg/g	0.05	**0.16**
		Xylene Mixture	µg/g	0.05	**1.6**
		F1 (C6 to C10)	µg/g	25	**32**

5.6.3 Organochlorine Pesticides

A total of four (4) samples including one (1) field duplicate for QA/QC purposes were submitted for analysis of OCPs. The results of the analyses are tabulated in Table 7 and presented on Figure 6C. The results of the analyses indicated that there were no exceedances of the Table 1 SCS.

5.6.4 Polychlorinated Biphenyls

One (1) sample was submitted for analysis of PCBs. The results of the analyses are tabulated in Table 8 and presented on Figure 6C. The results of the analyses indicated that there were no exceedances of the Table 1 SCS.

5.6.5 Commentary on Soil Quality

The results of the soil chemical analysis conducted indicated that PHC (incl. BTEX) impacts are present on the Phase Two Property.

Soil impacted with PHCs were identified in test pit TP3R GS1 (benzene, toluene, ethylbenzene, xylene, PHC F1, PHC F2, and PHC F3) at a depth ranging from 0.0-0.4 mbgs. Impacts were also identified in test pit TP4r GS1 (toluene, ethylbenzene, xylene, PHC F1 and F2) from 0.0-0.6 mbgs.

The horizontal and vertical extent of the PHC impacts in soil was determined at the time of remedial excavation, completed on November 26, 2018. The horizontal extent of the PHC impacts in soil is depicted on Figures 8A and 8B. The vertical extent of the PHC impacts in soil is depicted on Figures 9A and 10A. The horizontal extent of the PHC impacts in soil was found to be contained within a 2 metre radius of TP3r and TP4r and found to extend to a maximum depth of 1.5 mbgs.

Additional details regarding the remedial activities are provided in Appendix E.

5.7 Ground Water Quality

The results of the chemical analyses conducted are presented in Tables 9 through 12. A visual summary of the location of the sample locations is provided in Figures 7A through 7D. The laboratory certificates of analysis have been provided under Appendix D.

5.7.1 Metals and ORPs

A total of six (6) samples, including one (1) field duplicate for QA/QC purposes were submitted for analysis of metals and ORPs. One (1) additional verification sample was collected from monitoring well MW1D-17 and submitted for analysis of uranium.

The results of the analyses are tabulated in Table 9 and presented on Figure 7A. The groundwater samples transferred into the metals, mercury, and hexavalent chromium bottles were field filtered using a 0.45-micron in-line filter. The results of the analyses indicated the following exceedances of the Table 1 SCS:

Table 5-6: Summary of Metals and ORPs Exceedances in Groundwater

Sample ID	Well Screen Interval (mbgs)	Parameter	Units	Table 1 SCS	Reported Value
MW1D-17 (Jan 23, 2018)	3.5-5.3	Uranium	µg/L	8.9	**21.4**
MW1D-17 (Feb 2, 2018)	3.5-5.3	Uranium	µg/L	8.9	**22.6**

All of the remaining samples analysed met the MECP Table 1 SCS.

5.7.2 Petroleum Hydrocarbons

A total of six (6) samples, including one (1) field duplicate for QA/QC purposes were submitted for analysis of PHCs (incl. BTEX). The results of the analyses are tabulated in Table 10 and presented on Figure 7B. All of the sample concentrations were reported as non-detectable.

5.7.3 Volatile Organic Compounds

A total of six (6) samples, including one (1) field duplicate for QA/QC purposes were submitted for analysis of VOCs. One (1) trip blank was also submitted for analysis as part of the QA/QC program. The results of the analyses are tabulated in Table 11 and presented on Figure 7C. All of the sample concentrations were reported as non-detectable.

5.7.4 Organochlorine Pesticides

A total of five (5) samples, including one (1) field duplicate for QA/QC purposes were submitted for analysis of OCPs. The results of the analyses are tabulated in Table 12 and presented on Figure 7D. All of the sample concentrations were reported as non-detectable.

5.7.5 Commentary on Groundwater Quality

All of the groundwater samples analysed met the MECP Table 1 SCS for all of the parameters analysed, with the exception of MW1D-17, which exceeded the Table 1 SCS for uranium.

No potential source of uranium was identified in the Phase One ESA in the vicinity of MW1D-17. This monitoring well is situated in an agricultural field, and fill material was not identified any of the boreholes advanced in the vicinity of MW1D-17 (BH17-1N and BH17-3R). The monitoring well screen is situated across the Queenston formation shale and the silty clay till. The silty clay till is of low hydraulic conductivity and is anticipated to retard downward contaminant migration.

The uranium concentration in the soil sample submitted from the boreholes BH17-1N and BH17-3R were both 0.6 µg/g, which is 0.1 µg/g above the laboratory detection limit, indicating that there is not a significant contaminant source present in the soil. Uranium is naturally occurring in soils and bedrock. Based on the lack of a potential source of contamination (no PCA identified relevant to uranium), the lack of contaminant mass in soil, and the low permeability soils on-site, it is the opinion of the QP_{ESA} that the elevated concentration of uranium in groundwater in MW1D-17 is naturally occurring, and not contamination, as defined under the Environmental Protection Act.

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 and groundwater 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 events. All soil and groundwater 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 and groundwater samples, and the use of a trip blank for each groundwater sampling event (when suitable). 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 5-7: Summary of QA/QC Results

Sample ID	QA/QC duplicate	Medium	Parameter Analyzed	QA/QC Result
BH17-1R SS1	BH-17-BR SS-1	Soil	Metals and ORPs	All results were within the analytical protocol criteria for RPD.
BH17-5R SS2	BH17-AR SS2	Soil	Metals and ORPs, OCPs	All results were within the analytical protocol criteria for RPD.
BH17-2T SS-2	BH17-AT SS-2	Soil	Metals and ORPs	All results were within the analytical protocol criteria for RPD.
BH17-3T SS-2	BH17-BT SS2	Soil	PHCs and BTEX	All results were within the analytical protocol criteria for RPD.
TP3r GS1	TP3r GS0Dup	Soil	PHCs and BTEX	All results were within the analytical protocol criteria for RPD.
TP10r GS1	TP10r GS0 Dup	Soil	PHCs and BTEX	All results were within the analytical protocol criteria for RPD.
MW17-1T	Dup-1	Groundwater	Metals and ORPs, PHCs, VOCs, OCPs	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.

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

With respect to subsection 47(3) of O. Reg 153/04 (as amended), all certificates of analysis or analytical reports pursuant to clause 47(2) (b) of the regulation comply with subsection 47(3). A certificate of analysis has been received for each sample submitted for analysis and have been provided (in full) in Appendix D.

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 and groundwater conditions at the Phase Two Property for the purpose of assessing whether the soil and groundwater at the Phase Property meets the applicable MECP SCS.

5.10 Phase Two Conceptual Site Model

A Phase Two Conceptual Site Model has been prepared for the Site based on the Phase One ESA, Phase Two ESA, and remediation activities. The Phase Two Conceptual Site Model has been provided under Appendix F.

6.0 Conclusions

This Phase Two ESA involved that advancement of thirteen (13) boreholes and twelve (12) test pits, the installation of six (6) monitoring wells on the Property, and the collection of soil and groundwater samples for analysis of the potential contaminants of concern, including: metals and ORPs, PHCs, BTEX and OCPs.

Mixed fill containing varies aesthetic impacts including wood, construction debris, plastic, glass and concrete was observed in test pits TP3r, TP4r, TP5r, TP6r, TP7r, TP8r and TP10r. Faint petroleum-like odours were also observed in test pits TP3r and TP4r at depths ranging between 0-0.6 mbgs.

PHC impacts were identified in the shallow fill material in the vicinity of test pits TP3r and TP4r. The impacted fill material was remediated through the excavation and off-site disposal

of the impacted fill. Post remediation confirmatory sampling was conducted on November 26, the results of which indicated that the remaining samples met the MECP Table 1 SCS.

All of the groundwater samples met the MECP Table 1 SCS, with the exception of MW1D-17, which exceeded the SCS for uranium. This has been attributed to natural background conditions and is not considered to be contamination as defined under the EPA.

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

- The PHC impacts in soil were successfully remediated on November 26, 2018 through the bulk excavation and off-site disposal of the impacted soils in the vicinity of TP3r and TP4r. The remaining soils on-Site meet the applicable MECP Table 1 SCS.
- Approximately 20 cubic metres of fill material was imported to the Property on November 28, 2018 to backfill the remedial excavation. Verification sampling conducted on November 27, 2018 indicated that the import fill meets the Applicable MECP Table 1 SCS.
- Uranium impacts were identified in groundwater sampled from monitoring well MW1D-17. The elevated levels of uranium are considered by the QP_{ESA} to be naturally occurring, and not contamination as defined in the Environmental Protection Act. As such, the groundwater the Phase Two Property is considered to meet the Table 1 SCS.
- All monitoring wells should be decommissioned in accordance with O.Reg. 903 when no longer required.

It is the opinion of the QP_{ESA} that the applicable SCS for the soil and groundwater at the Phase Two Property have been met as of the Certification Date of November 27, 2018. No further sub-surface investigation is required regarding the environmental quality of the soil and groundwater at the Phase Two Property. A Record of Site Condition may be filed for the Phase Two Property based on the findings of this investigation.

6.1 Qualifications of the Assessors

Ms. Aphrodite Koseos, B.Sc., EPt.

Ms. Koseos is an Environmental Technician with DS Consultants Ltd. Aphrodite holds a Bachelor of Science Degree from Simon Fraser University with a major in Environmental Science and a specialization in Earth Systems. Aphrodite is also registered as an environmental professional in training with ECO Canada. Aphrodite has had several years of experience in the environmental sector conducting Phase One and Phase Two Environmental Site Assessments.

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 eight years of environmental consulting experience and has conducted and/or managed over 100 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. 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 (Rick) Fioravanti, B.Sc., P.Geo., QP$_{ESA}$ 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

Aphrodite Koseos, B.Sc., EPt.
Environmental Technician

Patrick Fioravanti, B.Sc., P.Geo.,
Manager – Environmental Services

6.3 Limitations

This report was prepared for the sole use of Argo (West Morrison Creek) Limited and is intended to provide an assessment of the environmental condition on the property located at 3270 Sixth Line, Oakville, 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.
- Chapman, L.J. and Putnam, D.F. 2007. *The Physiography of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 228.
- 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*.

Figures

J:\-GIS\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 1 - Site Location Plan.qgs

Legend

Site Boundary

DS CONSULTANTS LTD.
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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **SITE LOCATION PLAN**

N

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: 1

Image/Map Source: *Google Street Map*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 2 – Phase One Property Site Plan.qgs

Legend

Site Boundary

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **PHASE ONE PROPERTY SITE PLAN**

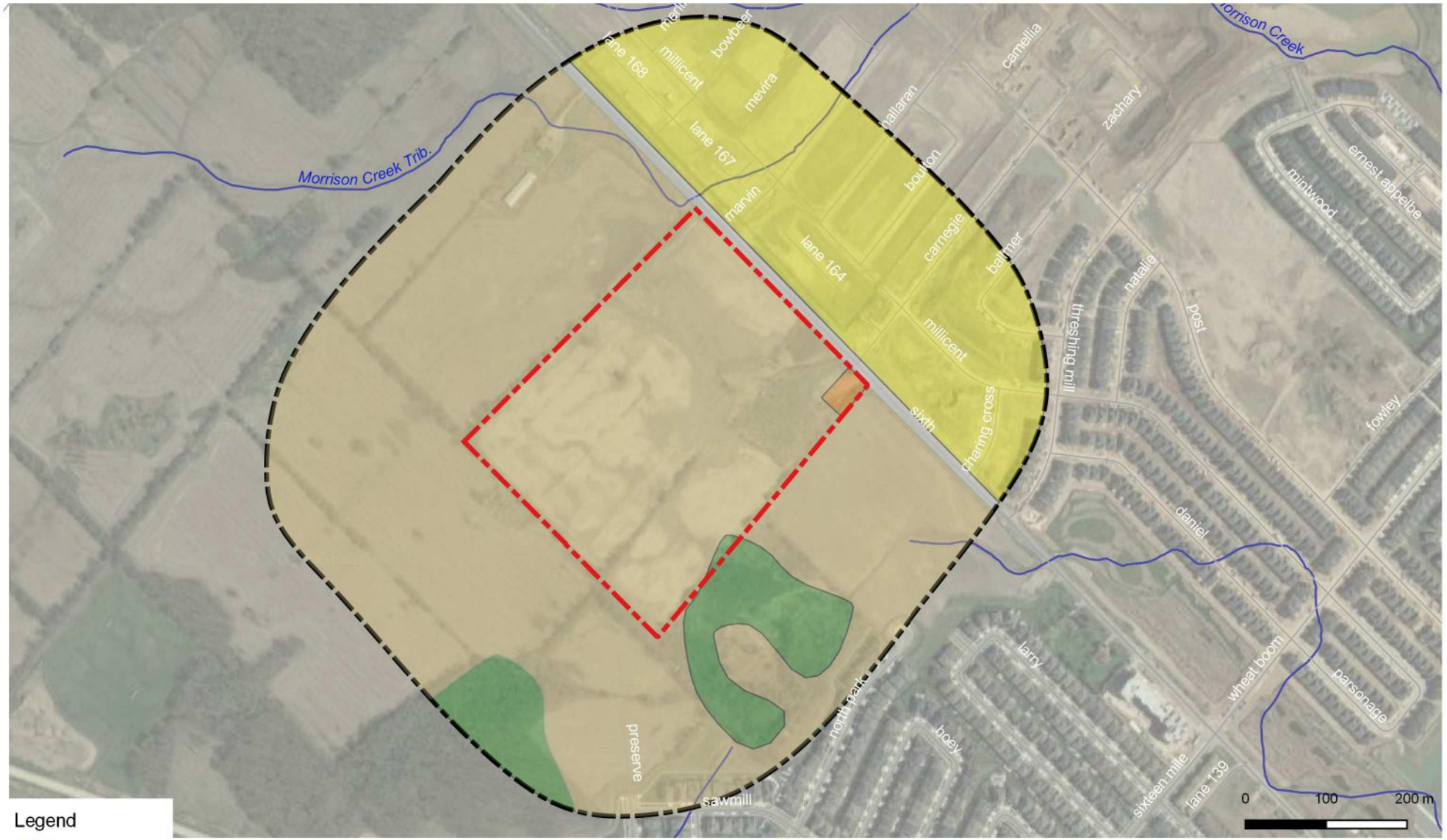
N

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: 2

Image/Map Source: *2018 Google Satellite Image and 2007 Satellite Image*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 3A – Phase One Study Area.qgs



Legend

- Site Boundary
- 250m Buffer
- Agricultural
- Commercial
- Residential
- Wooded Area

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **PHASE ONE STUDY AREA**

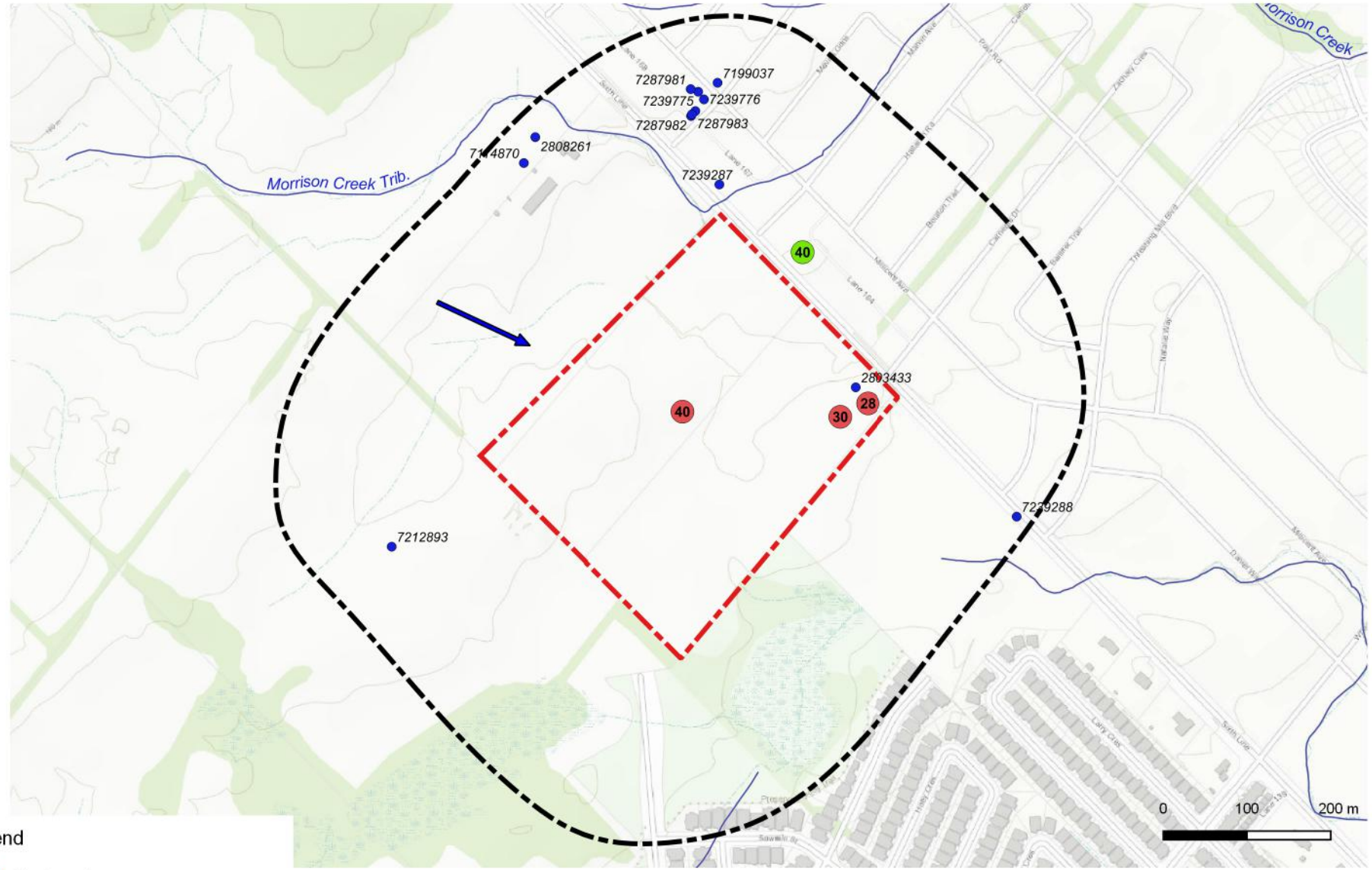
N

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **3A**

Image/Map Source: *Google Satellite Image*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 3B – PCA within Phase One Study Area.qgs



Legend

- Site Boundary
- 250m Buffer
- Registered Water Well (MECP WWR)
- PCA not contributing to APEC
- PCA contributing to APEC
- Groundwater Flow Direction

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

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

N

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **3B**

Image/Map Source: *Esri Topo Map*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 4 – Borehole Location Plan with APECs.qgs

Legend

- Site Boundary
- APEC-1 (Pesticides)
- APEC 2 (Fill)
- APEC 3 (Generator)
- Borehole (DS)
- Monitoring Well (DS)
- Monitoring Well (Burnside)
- Test Pit (DS)

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

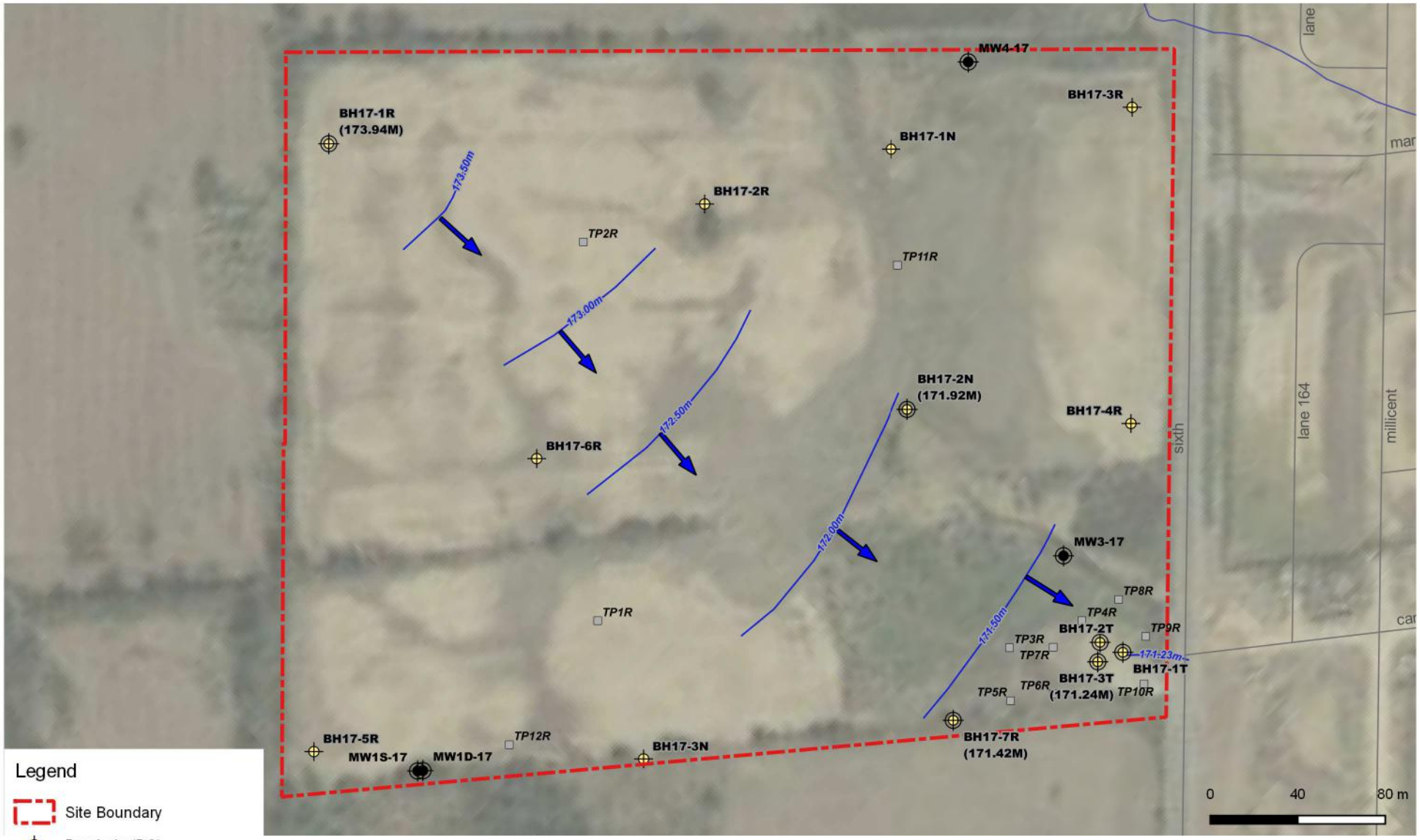
Title: BOREHOLE AND MONITORING WELL LOCATIONS WITH APECs

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: 4

Image/Map Source: *Google Satellite Image*

J:\-GIS\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 5 – GW Elevation Contours and Flow Direction.qgs



Legend

- Site Boundary
- Borehole (DS)
- Monitoring Well (DS)
- Monitoring Well (Burnside)
- Test Pit (DS)
- Groundwater Contour
- Inferred Groundwater Flow Direction

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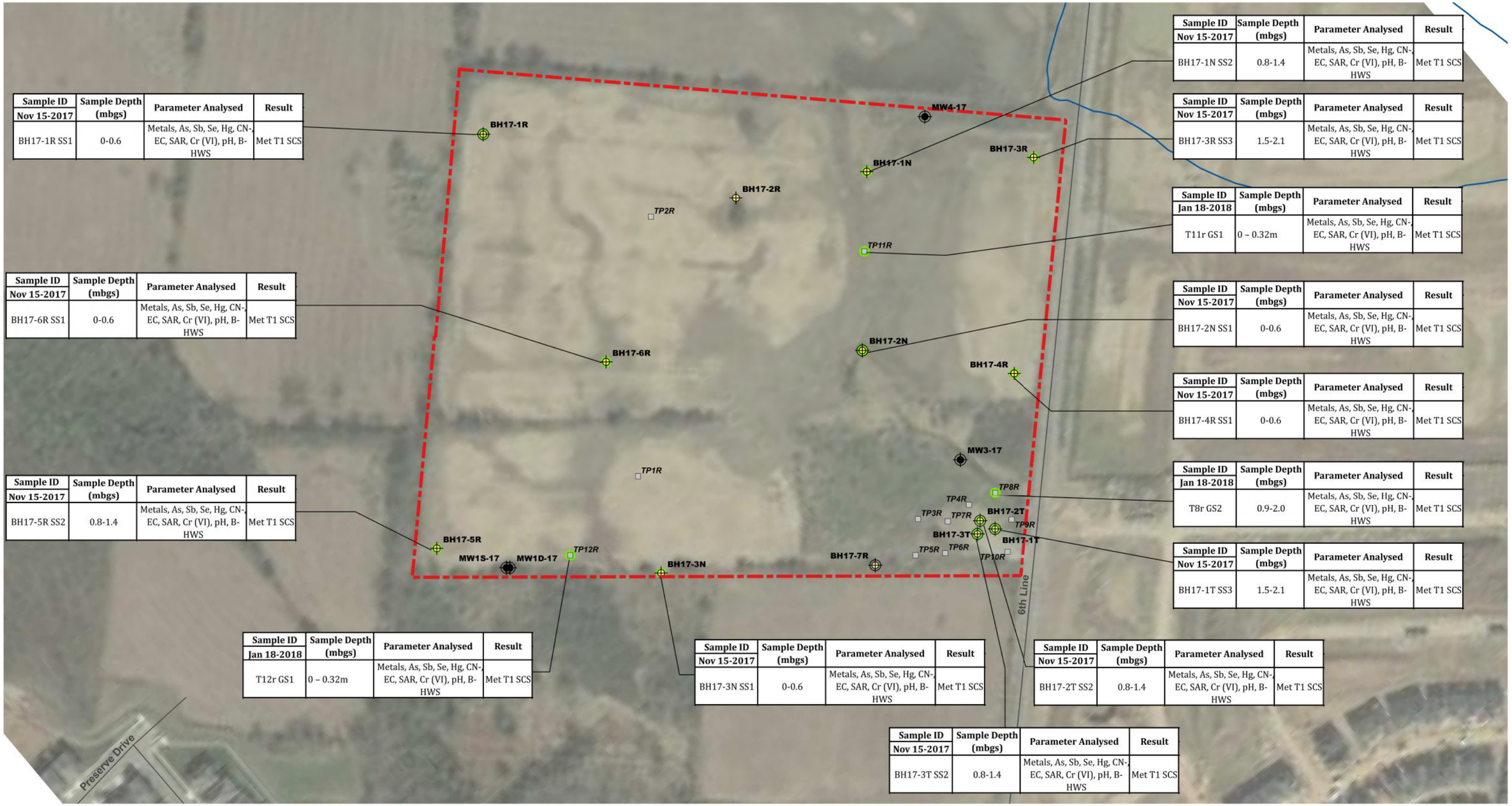
Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **GROUNDWATER ELEVATION CONTOURS AND FLOW DIRECTION**

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: 5

Image/Map Source: *Google Satellite Image*



Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-1R SS1	0-0.6	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-1N SS2	0.8-1.4	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-3R SS3	1.5-2.1	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Jan 18-2018	Sample Depth (mbgs)	Parameter Analysed	Result
T11r GS1	0 – 0.32m	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-6R SS1	0-0.6	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-2N SS1	0-0.6	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-4R SS1	0-0.6	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Jan 18-2018	Sample Depth (mbgs)	Parameter Analysed	Result
T8r GS2	0.9-2.0	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-1T SS3	1.5-2.1	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-5R SS2	0.8-1.4	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Jan 18-2018	Sample Depth (mbgs)	Parameter Analysed	Result
T12r GS1	0 – 0.32m	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-3N SS1	0-0.6	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-2T SS2	0.8-1.4	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Nov 15-2017	Sample Depth (mbgs)	Parameter Analysed	Result
BH17-3T SS2	0.8-1.4	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Legend

- Site Boundary
- Test Pit Location-DS
- Borehole Location - DS
- Monitoring Well Location - DS
- Monitoring Well - Burnside
- Sample Met T1 Standards

0 50 100 m

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

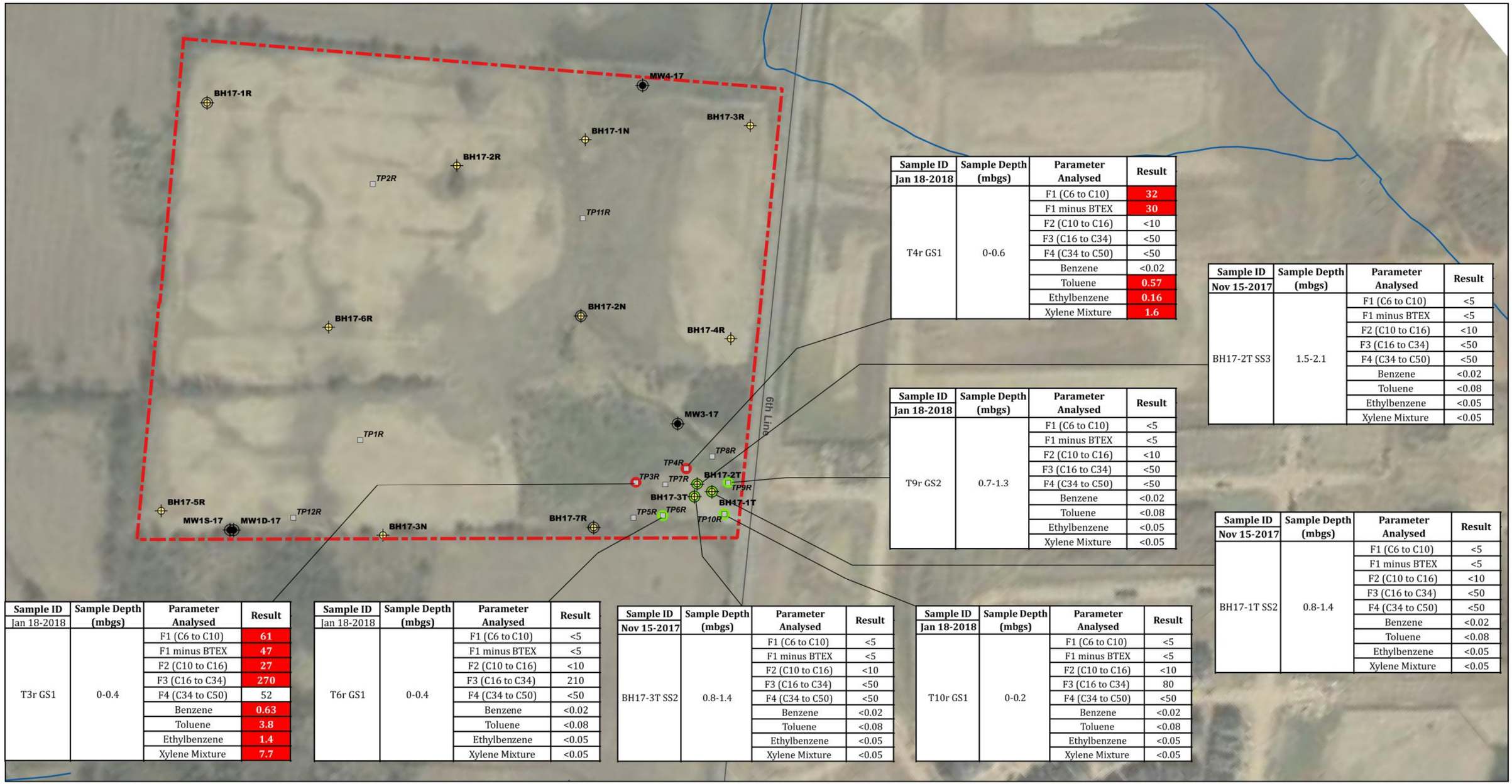
Title: **SOIL CHARACTERIZATION - METALS AND INORGANICS**

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
11x17	R.F	S.Y	October 2019
Rev. 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **6A**

Image/Map Source: *Google Satellite Image*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-GIS\Phase Two\October 2019\Figure 6A – Soil Characterization – M1.qgs



Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 18-2018			
T4r GS1	0-0.6	F1 (C6 to C10)	32
		F1 minus BTEX	30
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	<50
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	0.57
		Ethylbenzene	0.16
		Xylene Mixture	1.6

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Nov 15-2017			
BH17-2T SS3	1.5-2.1	F1 (C6 to C10)	<5
		F1 minus BTEX	<5
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	<50
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	<0.08
		Ethylbenzene	<0.05
		Xylene Mixture	<0.05

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 18-2018			
T9r GS2	0.7-1.3	F1 (C6 to C10)	<5
		F1 minus BTEX	<5
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	<50
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	<0.08
		Ethylbenzene	<0.05
		Xylene Mixture	<0.05

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Nov 15-2017			
BH17-1T SS2	0.8-1.4	F1 (C6 to C10)	<5
		F1 minus BTEX	<5
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	<50
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	<0.08
		Ethylbenzene	<0.05
		Xylene Mixture	<0.05

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 18-2018			
T3r GS1	0-0.4	F1 (C6 to C10)	61
		F1 minus BTEX	47
		F2 (C10 to C16)	27
		F3 (C16 to C34)	270
		F4 (C34 to C50)	52
		Benzene	0.63
		Toluene	3.8
		Ethylbenzene	1.4
		Xylene Mixture	7.7

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 18-2018			
T6r GS1	0-0.4	F1 (C6 to C10)	<5
		F1 minus BTEX	<5
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	210
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	<0.08
		Ethylbenzene	<0.05
		Xylene Mixture	<0.05

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Nov 15-2017			
BH17-3T SS2	0.8-1.4	F1 (C6 to C10)	<5
		F1 minus BTEX	<5
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	<50
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	<0.08
		Ethylbenzene	<0.05
		Xylene Mixture	<0.05

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 18-2018			
T10r GS1	0-0.2	F1 (C6 to C10)	<5
		F1 minus BTEX	<5
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	80
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	<0.08
		Ethylbenzene	<0.05
		Xylene Mixture	<0.05

Legend

- Site Boundary
- Test Pit Location-DS
- Borehole Location - DS
- Monitoring Well Location - DS
- Monitoring Well - Burnside
- Sample Met T1 Standards
- Sample Exceeds T1 Standards

0 50 100 m

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

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

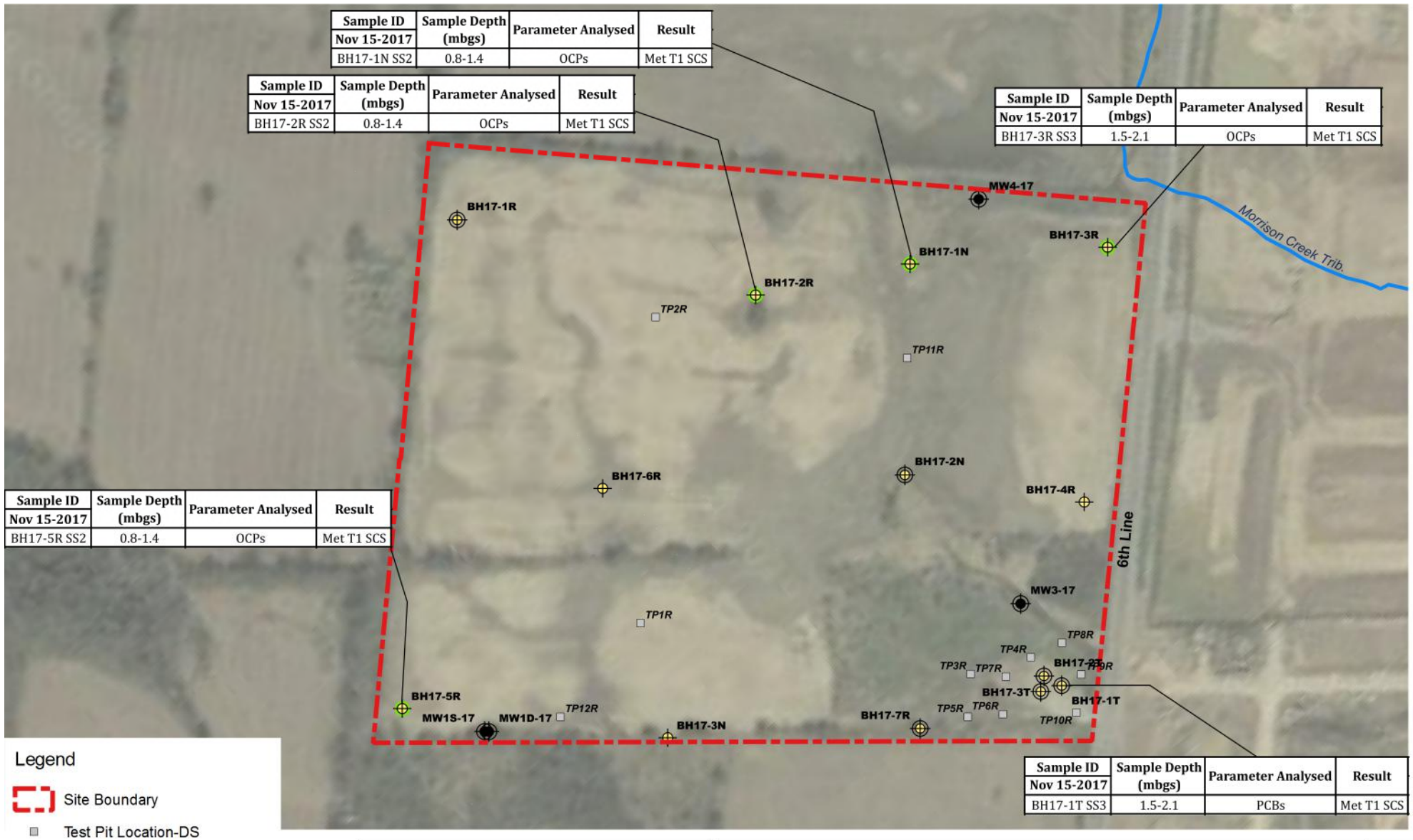
Client: ARGO DEVELOPMENT CORPORATION

Size: 11x17 | Rev. 0 | Approved By: R.F | Drawn By: S.Y | Date: October 2019 | Scale: As Shown | Project No.: 17-508-100 | Figure No.: **6B**

Image/Map Source: *Google Satellite Image*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 6B – Soil Characterization – PHCs.qgs

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 6C – Soil Characterization – OCPs and PCBs.qgs



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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

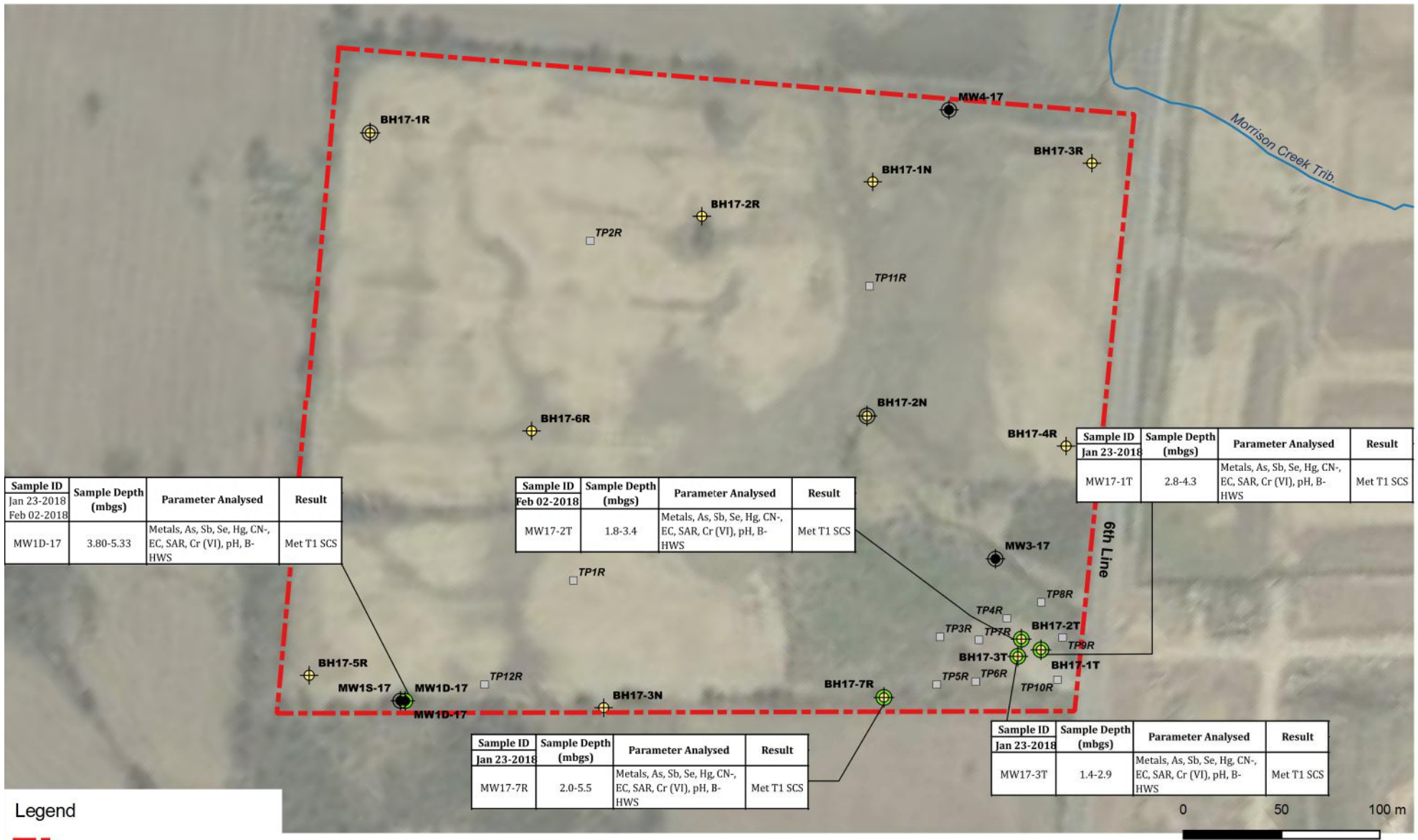
Title: **SOIL CHARACTERIZATION - OCPs AND PCBs**

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **6C**

Image/Map Source: *Google Satellite Image*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 7A – Groundwater Characterization – MI.qgs



Sample ID Jan 23-2018 Feb 02-2018	Sample Depth (mbgs)	Parameter Analysed	Result
MW1D-17	3.80-5.33	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Feb 02-2018	Sample Depth (mbgs)	Parameter Analysed	Result
MW17-2T	1.8-3.4	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Jan 23-2018	Sample Depth (mbgs)	Parameter Analysed	Result
MW17-1T	2.8-4.3	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Jan 23-2018	Sample Depth (mbgs)	Parameter Analysed	Result
MW17-7R	2.0-5.5	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Sample ID Jan 23-2018	Sample Depth (mbgs)	Parameter Analysed	Result
MW17-3T	1.4-2.9	Metals, As, Sb, Se, Hg, CN-, EC, SAR, Cr (VI), pH, B-HWS	Met T1 SCS

Legend

- Site Boundary
- Test Pit Location-DS
- Borehole Location - DS
- Monitoring Well Location - DS
- Monitoring Well - Burnside
- Sample Met Table 1 Standards

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

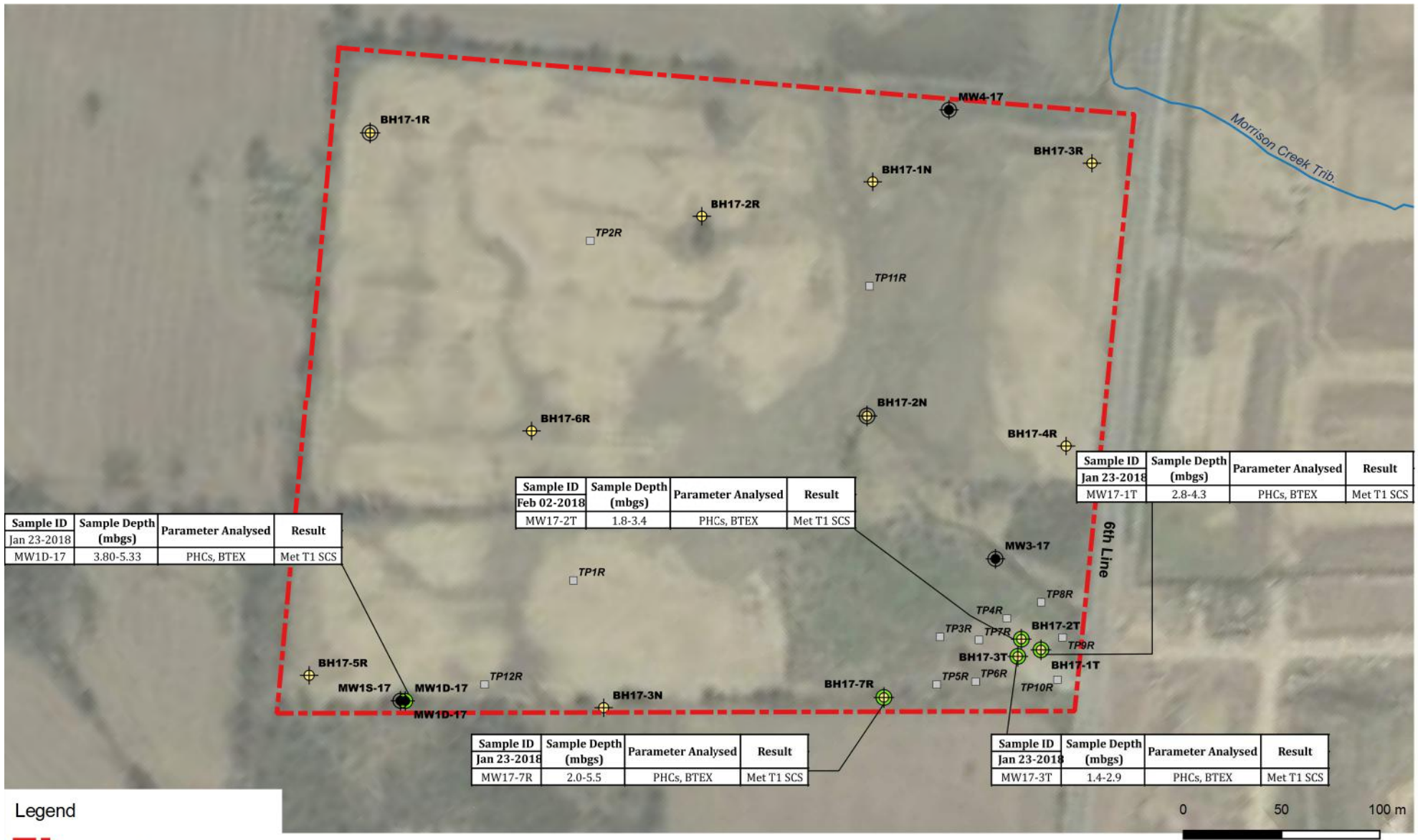
Title: **GROUNDWATER CHARACTERIZATION - METALS AND INORGANICS**

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **7A**

Image/Map Source: *Google Satellite Image*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 7B – Groundwater Characterization – PHCs.qgs



Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 23-2018			
MW1D-17	3.80-5.33	PHCs, BTEX	Met T1 SCS

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Feb 02-2018			
MW17-2T	1.8-3.4	PHCs, BTEX	Met T1 SCS

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 23-2018			
MW17-1T	2.8-4.3	PHCs, BTEX	Met T1 SCS

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 23-2018			
MW17-7R	2.0-5.5	PHCs, BTEX	Met T1 SCS

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 23-2018			
MW17-3T	1.4-2.9	PHCs, BTEX	Met T1 SCS

Legend

- Site Boundary
- Test Pit Location-DS
- Borehole Location - DS
- Monitoring Well Location - DS
- Monitoring Well - Burnside
- Sample Met Table 1 Standards

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

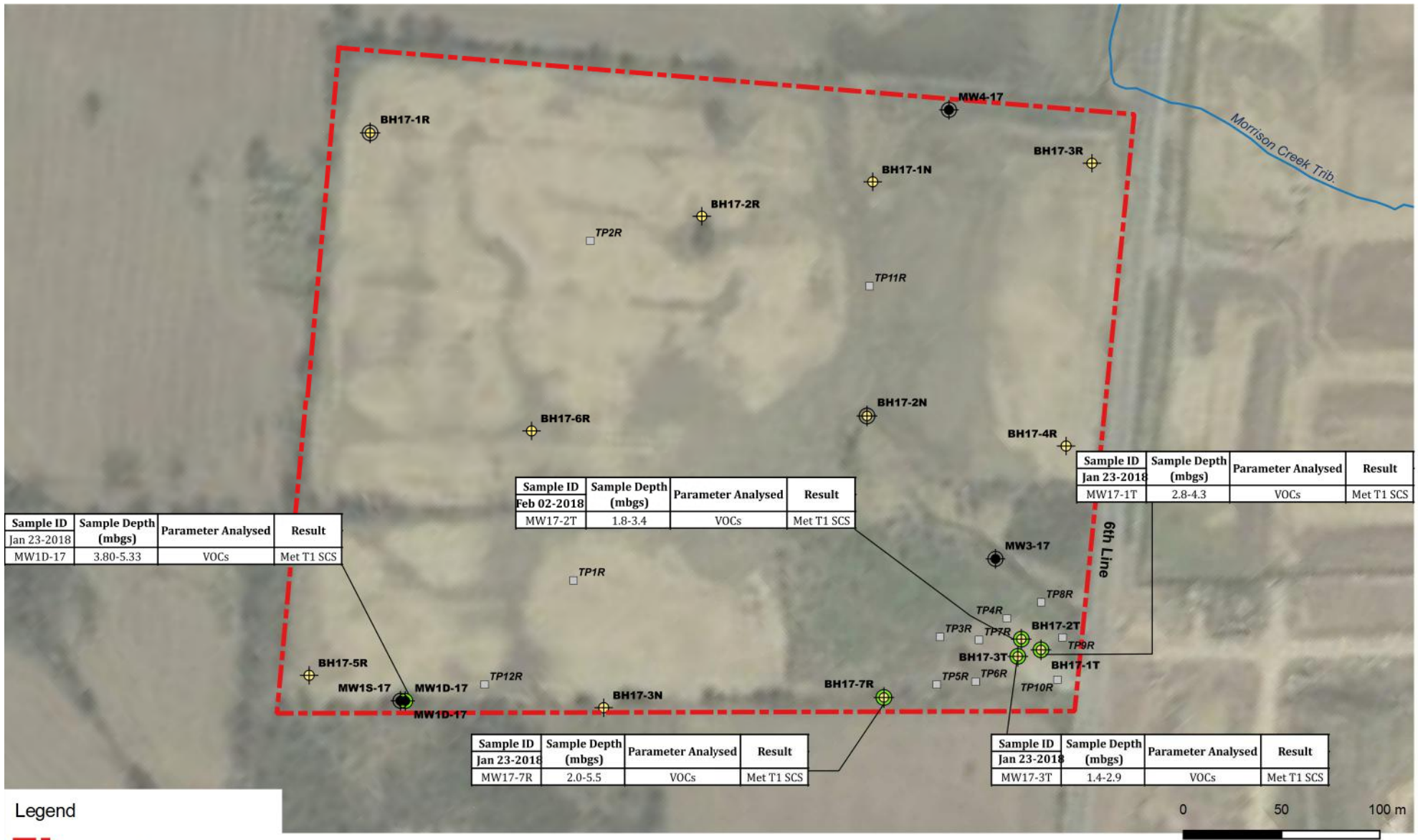
Title: **GROUNDWATER CHARACTERIZATION - PHCs + BTEX**

Client: ARGO DEVELOPMENT CORPORATION

Size	Approved By	Drawn By	Date
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **7B**

Image/Map Source: *Google Satellite Image*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 7C – Groundwater Characterization – VOCs.qgs



Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 23-2018 MW1D-17	3.80-5.33	VOCs	Met T1 SCS

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Feb 02-2018 MW17-2T	1.8-3.4	VOCs	Met T1 SCS

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 23-2018 MW17-1T	2.8-4.3	VOCs	Met T1 SCS

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 23-2018 MW17-7R	2.0-5.5	VOCs	Met T1 SCS

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 23-2018 MW17-3T	1.4-2.9	VOCs	Met T1 SCS

Legend

- Site Boundary
- Test Pit Location-DS
- Borehole Location - DS
- Monitoring Well Location - DS
- Monitoring Well - Burnside
- Sample Met Table 1 Standards

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

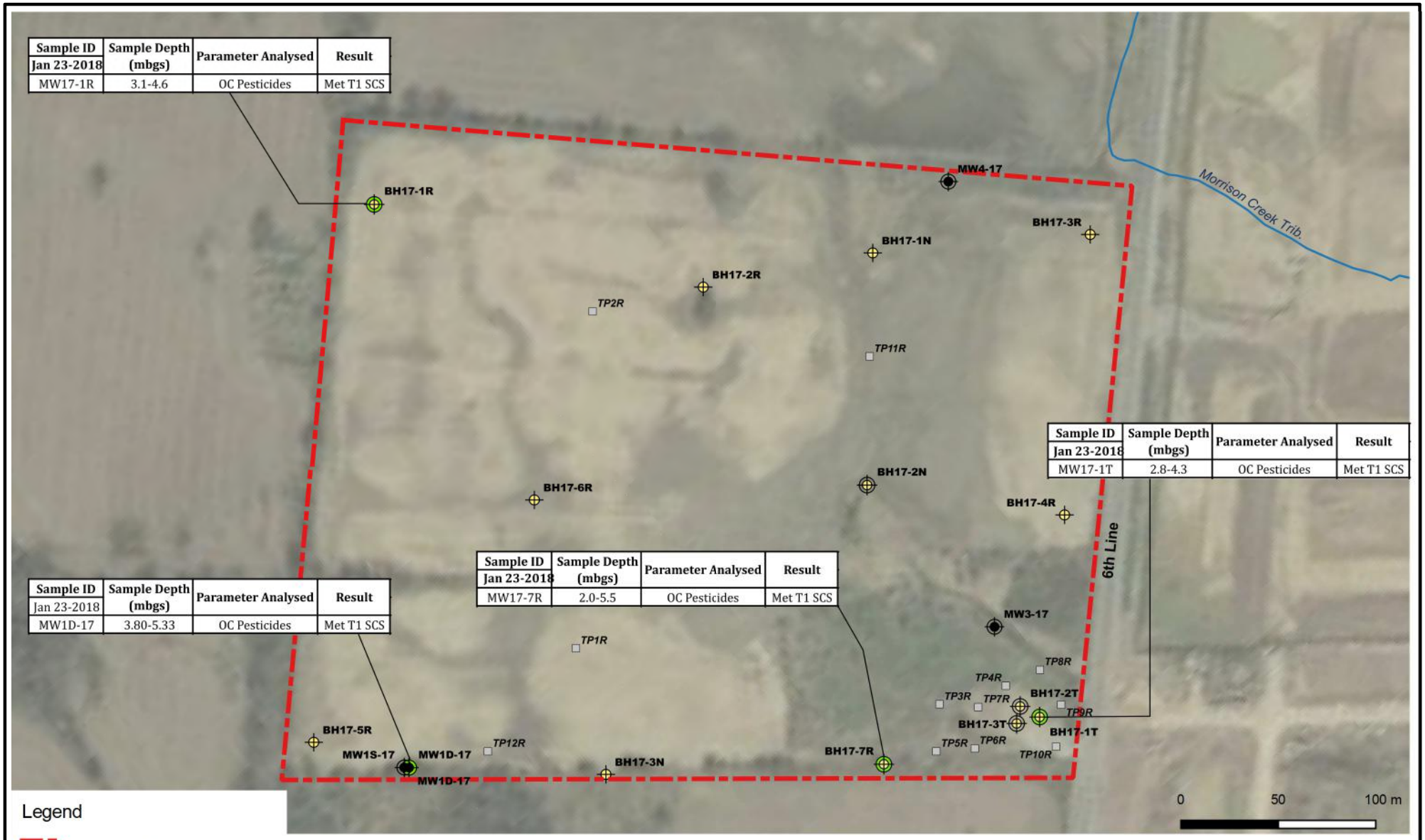
Title: **GROUNDWATER CHARACTERIZATION - VOCs**

Client: ARGO DEVELOPMENT CORPORATION

Size	Approved By	Drawn By	Date
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **7C**

Image/Map Source: *Google Satellite Image*

C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 7D – Groundwater Characterization – OCPs.qgs



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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **GROUNDWATER CHARACTERIZATION - OCPs**

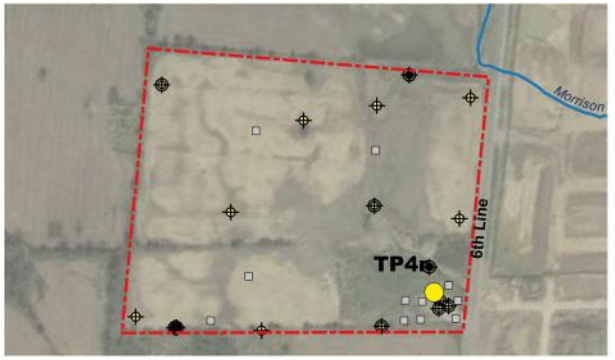
Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **7D**

Image/Map Source: *Google Satellite Image*

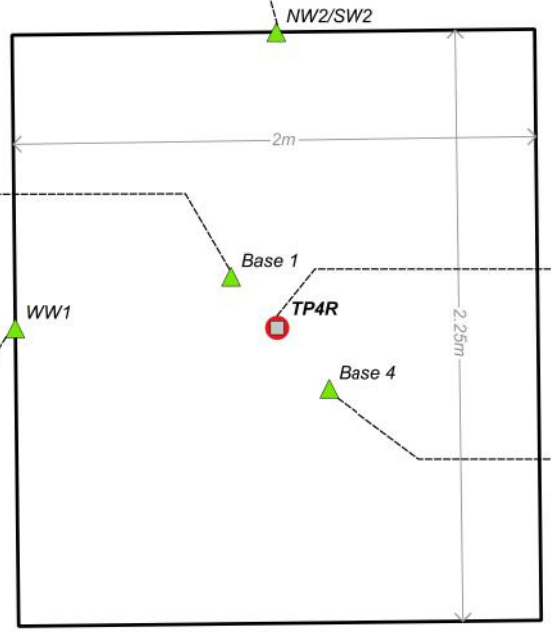
C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 8A- TP4r Confirmatory Soil Sample Location Plan.qgs

Date: Nov 26-2018			
Sample ID	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
NW2/ SW2	0.5-1.0	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05



Date: Nov 26-2018			
Sample ID	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
Base 1	1.5	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Date: Nov 26-2018			
Sample ID	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
WW1	0.5-1.0	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05



Sample ID Jan 18-2018	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
T4r GS1	0-0.6	F1 (C6 to C10)	**32**
		F1 minus BTEX	**30**
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	<50
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	**0.57**
		Ethylbenzene	**0.16**
		Xylene Mixture	**1.6**

Date: Nov 26-2018			
Sample ID	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
Base 4	1.5	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

0 0.5 1 m

Legend

- Site Boundary
- Test Pit Location-DS
- Sample Exceeds Applicable Standards
- Confirmatory Sample

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **TP1 CONFIRMATORY SOIL SAMPLE LOCATION PLAN**

Client: ARGO DEVELOPMENT CORPORATION

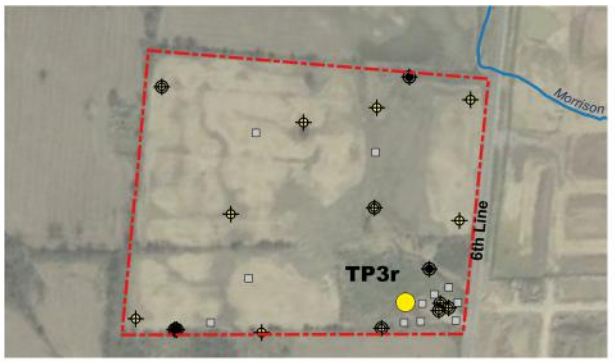
Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **8A**

Image/Map Source: *Google Satellite Image*

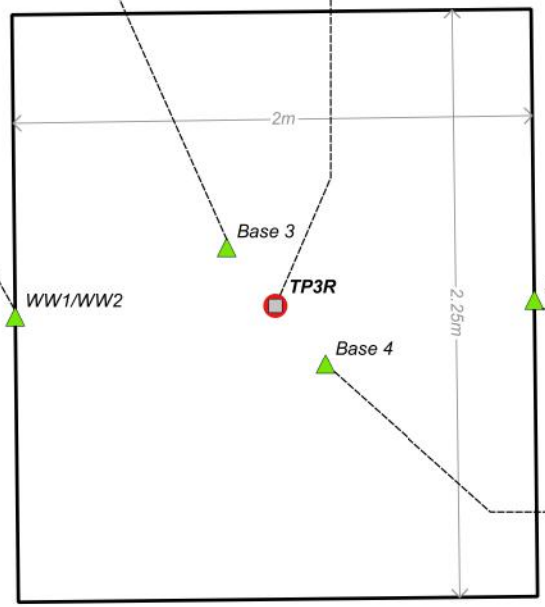
C:\0Sharon\17-508-20 Argo Marchetti, Oakville\1-QGIS\Phase Two\October 2019\Figure 8B- TP3r Confirmatory Soil Sample Location Plan.qgs

Date: Nov 26-2018			
Sample ID	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
Base 3	1.5	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Sample ID	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
Jan 18-2018			
T3r GS1	0-0.4	F1 (C6 to C10)	61
		F1 minus BTEX	47
		F2 (C10 to C16)	27
		F3 (C16 to C34)	270
		F4 (C34 to C50)	52
		Benzene	0.63
		Toluene	3.8
		Ethylbenzene	1.4
		Xylene Mixture	7.7



Date: Nov 26-2018			
Sample ID	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
WW1/ WW2	0.3-0.45	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05



Date: Nov 26-2018			
Sample ID	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
EW3	0.3-0.45	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Date: Nov 26-2018			
Sample ID	**Sample Depth (mbgs)**	**Parameter Analysed**	**Result**
Base 4	1.5	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

0 0.5 1 m

Legend

- Site Boundary
- Test Pit Location-DS
- Sample Exceeds Applicable Standards
- Confirmatory Sample

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **TP2 CONFIRMATORY SOIL SAMPLE LOCATION PLAN**

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev: 0	Scale: As Shown	Project No.: 17-508-100	Figure No.: **8A**

Image/Map Source: *Google Satellite Image*

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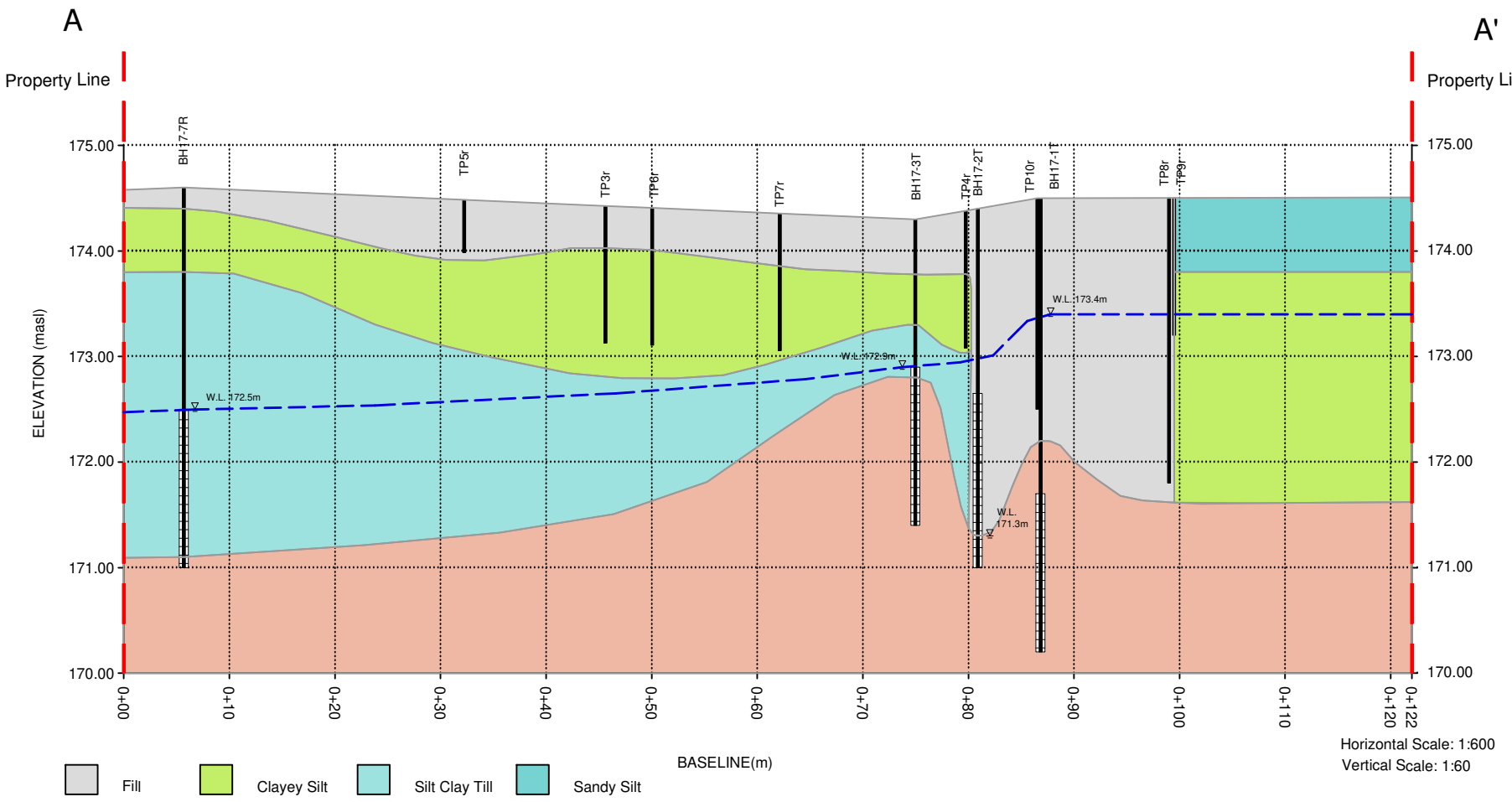

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **GEOLOGICAL CROSS SECTION A-A'**

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev.	Scale:	Project No:	Figure No.
	As Shown	17-508-100	9

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 18-2018			
T3r GS1	0-0.4	F1 (C6 to C10)	61
		F1 minus BTEX	47
		F2 (C10 to C16)	27
		F3 (C16 to C34)	270
		F4 (C34 to C50)	52
		Benzene	0.63
		Toluene	3.8
		Ethylbenzene	1.4
		Xylene Mixture	7.7

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 18-2018			
T4r GS1	0-0.6	F1 (C6 to C10)	32
		F1 minus BTEX	30
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	<50
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	0.57
		Ethylbenzene	0.16
		Xylene Mixture	1.6

Date: Nov 26-2018			
Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
WW1/ WW2	0.3-0.45	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Date: Nov 26-2018			
Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
EW3	0.3-0.45	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

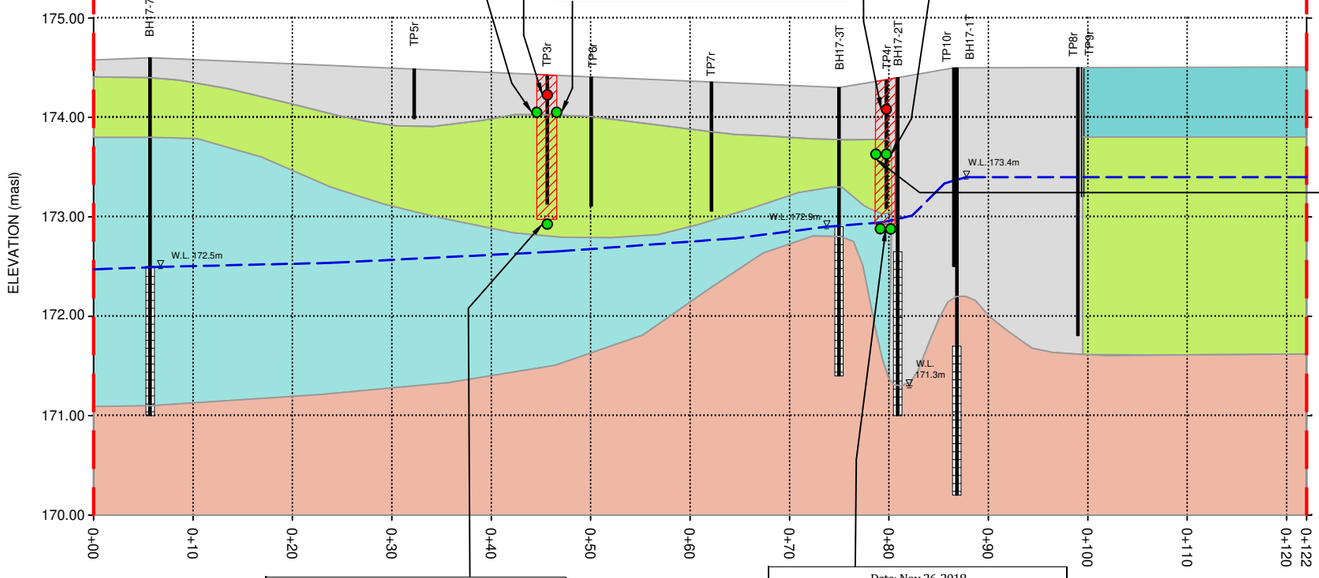
Date: Nov 26-2018			
Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
NW2/ SW2	0.5-1.0	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

A

A'

Property Line

Property Line



Date: Nov 26-2018			
Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
WW1	0.5-1.0	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Date: Nov 26-2018			
Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Base 3/ Base 4	1.5	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Date: Nov 26-2018			
Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Base 1/ Base 4	1.5	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Horizontal Scale: 1:600
Vertical Scale: 1:60

- Fill
- Clayey Silt
- Silt Clay Till
- Sandy Silt

- Potentiometric Surface (June 24, 2018)
- Estimated Extent of PHCs + BTEX Impact in Soil
- Met Applicable Standards
- Exceeds Applicable Standards

Well

Screen

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Client: ARGO DEVELOPMENT CORPORATION

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **CROSS SECTION A-A' WITH PHCs AND BTEX IMPACTS IN SOIL (PRE-REMEDIATION)**

Size:	Approved By:	Drawn By:	Date:
11 X 17	R.F	S.Y	September 2019
Rev.	Scale: As Shown	Project No: 17-508-100	Figure No. 9A

Path:j:\-gis\17-508-20 argo marchetti, oakville\7-misc\cad\geological cross section - marchetti.dwg

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 18-2018			
T3r GS1	0-0.4	F1 (C6 to C10)	61
		F1 minus BTEX	47
		F2 (C10 to C16)	27
		F3 (C16 to C34)	270
		F4 (C34 to C50)	52
		Benzene	0.63
		Toluene	3.8
		Ethylbenzene	1.4
		Xylene Mixture	7.7

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Jan 18-2018			
T4r GS1	0-0.6	F1 (C6 to C10)	32
		F1 minus BTEX	30
		F2 (C10 to C16)	<10
		F3 (C16 to C34)	<50
		F4 (C34 to C50)	<50
		Benzene	<0.02
		Toluene	0.57
		Ethylbenzene	0.16
		Xylene Mixture	1.6

Date: Nov 26-2018

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
WW1/ WW2	0.3-0.45	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Date: Nov 26-2018

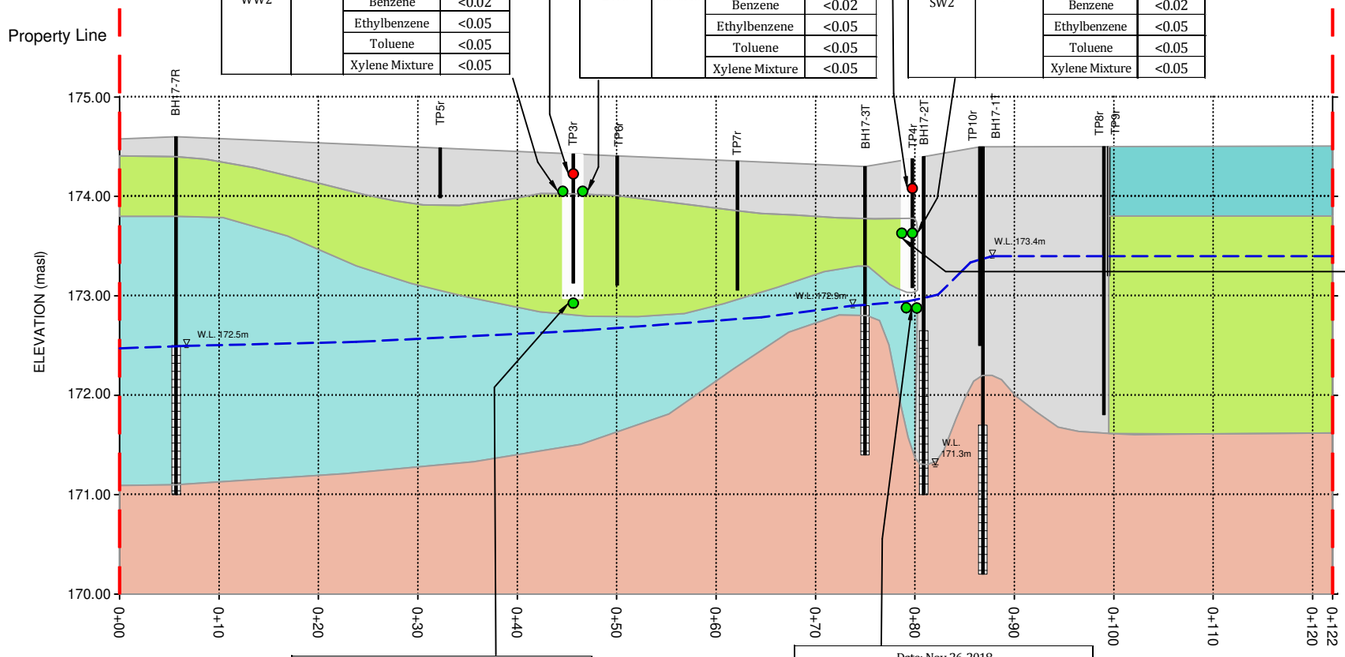
Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
EW3	0.3-0.45	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Date: Nov 26-2018

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
NW2/ SW2	0.5-1.0	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

A

A'



Date: Nov 26-2018

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
WW1	0.5-1.0	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Date: Nov 26-2018

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Base 3/ Base 4	1.5	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Date: Nov 26-2018

Sample ID	Sample Depth (mbgs)	Parameter Analysed	Result
Base 1/ Base 4	1.5	PHC F1-BTEX	<5
		PHC F2	<10
		PHC F3	<50
		PHC F4	<50
		Benzene	<0.02
		Ethylbenzene	<0.05
		Toluene	<0.05
		Xylene Mixture	<0.05

Horizontal Scale: 1:600
Vertical Scale: 1:60

- Fill
- Clayey Silt
- Silt Clay Till
- Sandy Silt

- Potentiometric Surface (June 24, 2018)
- Met Applicable Standards
- Exceeds Applicable Standards

Well
Screen

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Client: ARGO DEVELOPMENT CORPORATION

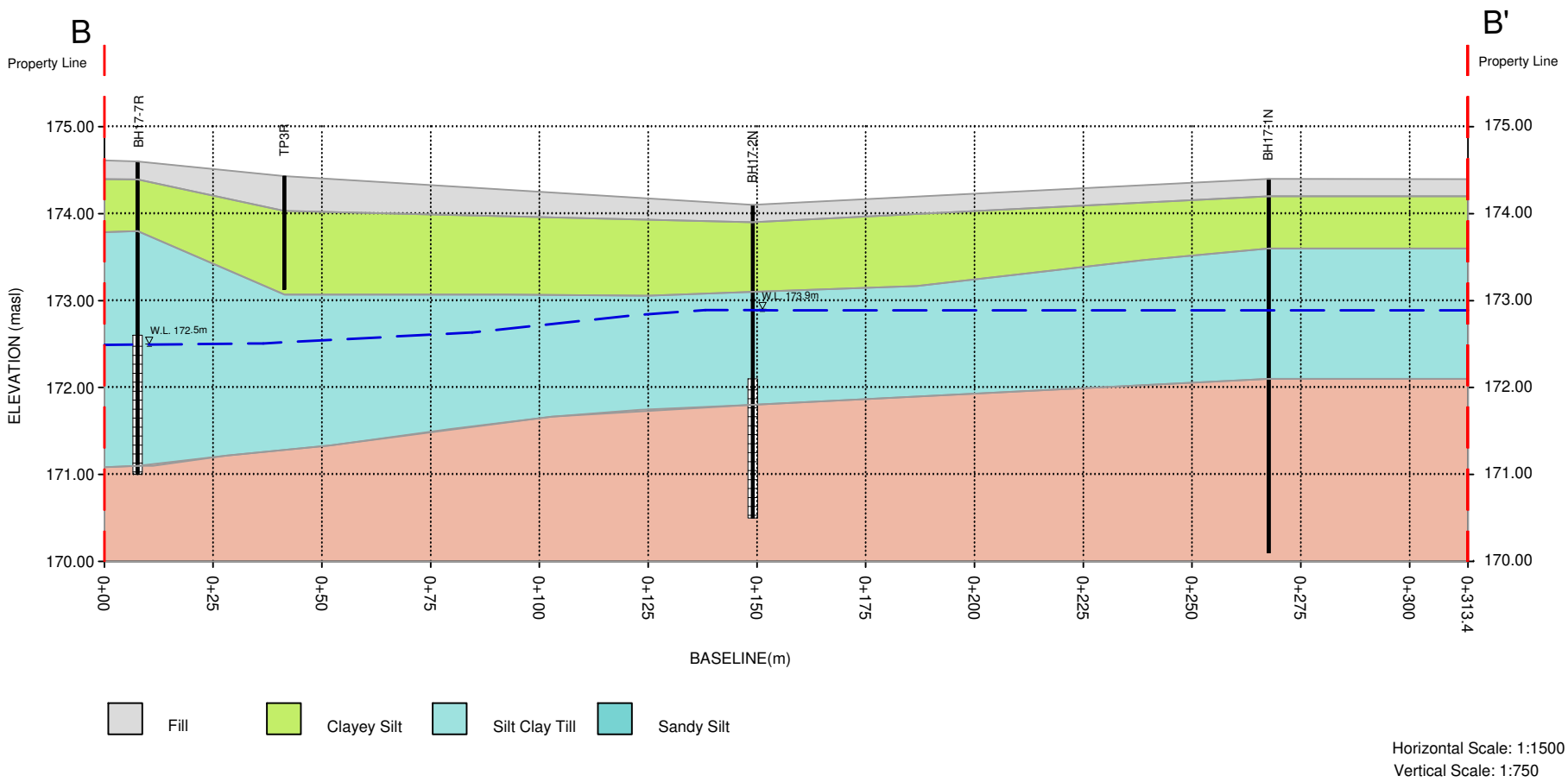
Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **CROSS SECTION A-A' WITH PHCs AND BTEX IMPACTS IN SOIL (POST-REMEDIATION)**

Size:	Approved By:	Drawn By:	Date:
11 X 17	R.F	S.Y	September 2019
Rev.	Scale: As Shown	Project No: 17-508-100	Figure No. 9B

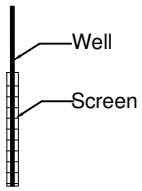
Path:j:\-gis\17-508-20 argo marchetti, oakville\7-misc\cad\geological cross section - marchetti.dwg

Path:c:\0sharon\17-508-20 argo marchetti, oakville\7-misc\cad\geological cross section - marchetti.dwg



Horizontal Scale: 1:1500
Vertical Scale: 1:750

Potentiometric Surface
(June 24, 2018)



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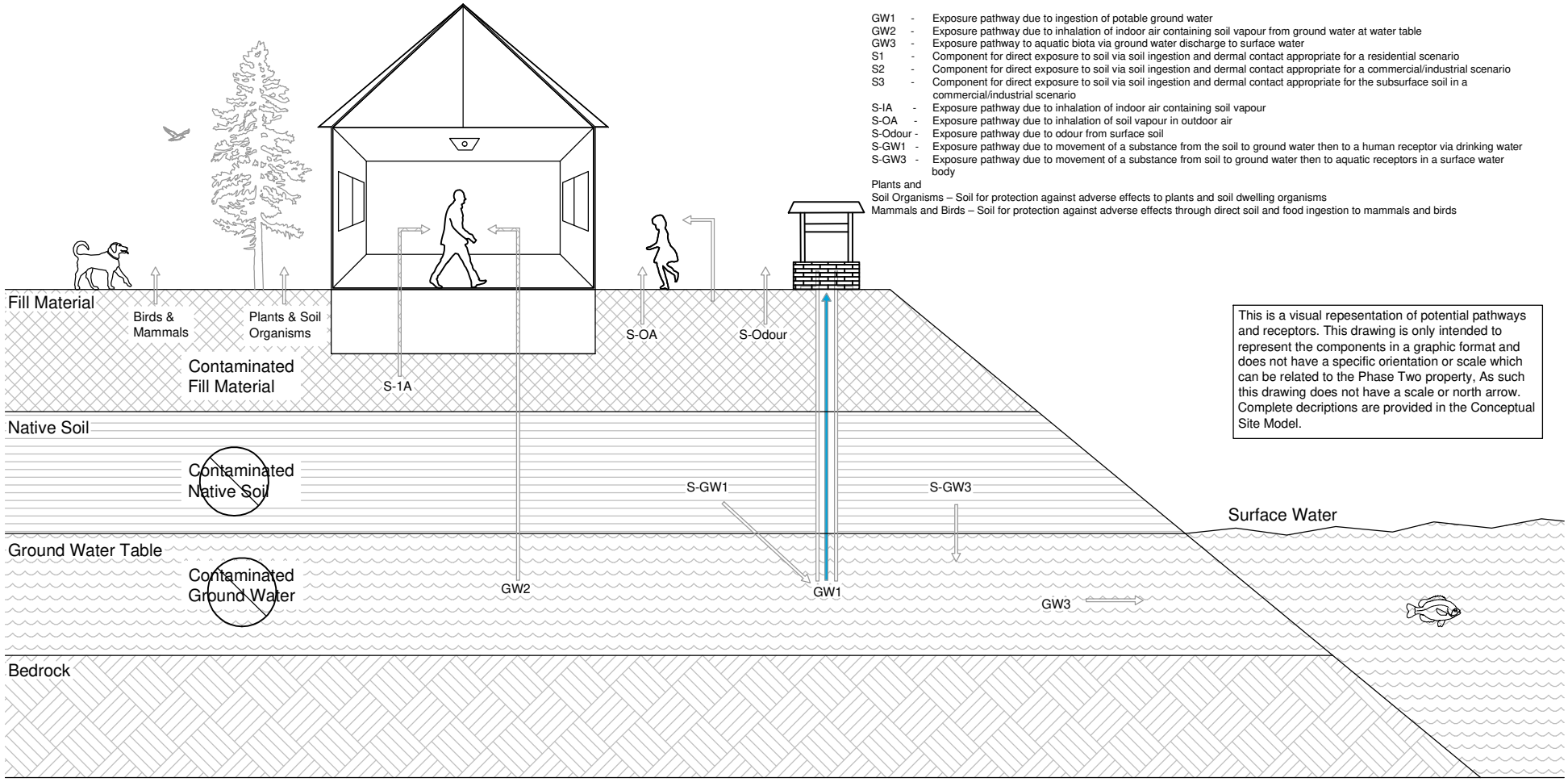
Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **GEOLOGICAL CROSS SECTION B-B'**

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev.	Scale:	Project No:	Figure No.
	As Shown	17-508-100	**10**

Path:j:\-gis\17-508-20 argo marchetti, oakville\7-misc\cad\figure 11 - contaminant transport diagram.dwg



Not Identified

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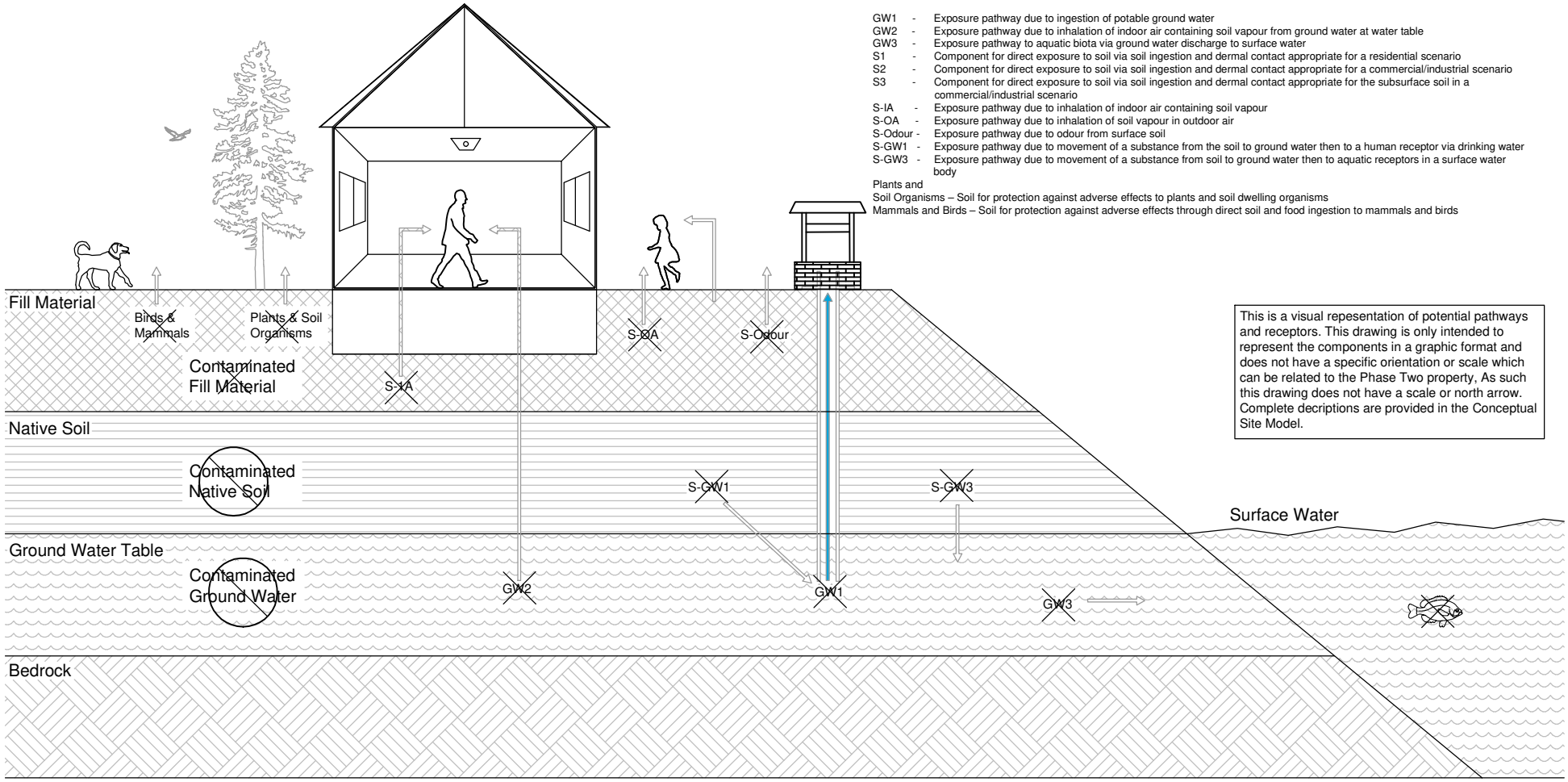
Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **CONTAMINATION TRANSPORT DIAGRAM (PRE-REMEDIATION)**

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev.	Scale: N.T.S	Project No: 17-508-100	Figure No. **11A**

Path:j:\-gis\17-508-20 argo marchetti, oakville\7-misc\cad\figure 11 - contaminant transport diagram.dwg



Not Identified

Pathway Not Present

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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
3270 Sixth Line, Oakville, ON

Title: **CONTAMINATION TRANSPORT DIAGRAM (POST-REMEDIATION)**

Client: ARGO DEVELOPMENT CORPORATION

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	R.F	S.Y	October 2019
Rev.	Scale: N.T.S	Project No: 17-508-100	Figure No. **11B**

Tables

Table 1: Summary of Monitoring Well Installation and Groundwater Data

Well ID			BH17-1T	BH17-2T	BH17-3T	BH17-2N	BH17-7R	BH17-1R	MW3-17	MW4-17	MW1S-17	MW1D-17
Installed By:			DS	DS	DS	DS	DS	DS	Burnside	Burnside	Burnside	Burnside
Installation Date:			15-Nov-17	15-Nov-17	15-Nov-17	15-Nov-17	15-Nov-17	14-Nov-17	23-Jun-17	13-Jun-17	12-Jun-17	20-Jun-17
Well Status:			Active	Active	Active	Active	Active	Active	Active	Active	Active	Active
Inner Diameter		(mm)	50	50	50	50	50	50	50	50	50	50
Surface Elevation		(masl)	174.48	177.44	174.33	174.10	174.60	177.20	174.54	177.17	175.04	174.98
Bottom of Concrete Seal/Top of Bentonite Seal		mbgs	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
		masl	174.18	177.14	174.03	173.80	174.30	176.90	174.24	176.87	174.74	174.68
Bottom of Bentonite Seal/Top of Sand Pack		mbgs	2.10	1.50	1.20	1.50	1.50	2.50	1.83	2.74	1.37	3.65
		masl	172.38	175.94	173.13	172.60	173.10	174.70	172.71	174.43	173.67	171.33
Top of Well Screen		mbgs	2.80	1.80	1.40	2.00	2.00	3.10	2.25	3.10	1.70	3.80
		masl	171.68	175.64	172.93	172.10	172.60	174.10	172.29	174.07	173.34	171.18
Well Screen Length		m	1.50	1.60	1.50	1.50	3.50	1.50	0.80	0.70	0.59	1.53
Bottom of Well Screen		mbgs	4.30	3.40	2.90	3.50	5.50	4.60	3.05	3.81	2.29	5.33
		masl	170.18	174.04	171.13	170.30	168.80	172.30	171.19	173.06	172.45	169.35
GW												
26-Jul-17	Depth to GW	mbgs	Not constructed yet						2.34	2.22	Dry	3.30
	GW Elevation	masl							172.20	174.95	-	171.68
16-Nov-17	Depth to GW	mbgs	Dry	3.12	Dry	Dry	Dry	Dry	Dry	2.85	Dry	4.96
	GW Elevation	masl	-	174.32	-	-	-	-	-	174.32	-	170.02
23/24-Nov-17	Depth to GW	mbgs	2.82	2.00	2.18	2.53	Dry	4.49	3.01	1.99	2.25	4.66
	GW Elevation	masl	171.66	175.44	172.15	171.57	-	172.71	171.53	175.18	172.79	170.32
09-Jan-18	Depth to GW	mbgs	3.28	3.14	Dry	Dry	Dry	4.57	Dry	2.75	Dry	5.08
	GW Elevation	masl	171.20	174.30	-	-	-	172.63	-	174.42	-	169.90
18-Jan-18	Depth to GW	mbgs	2.23	NM	1.37	2.47	2.51	4.60	NM	NM	NM	NM
	GW Elevation	masl	172.25	NM	172.96	171.63	172.09	172.60	NM	NM	NM	NM
24-Jan-18	Depth to GW	mbgs	1.10	NM	0.56	1.16	2.13	4.60	NM	NM	NM	NM
	GW Elevation	masl	173.38	NM	173.77	172.94	172.47	172.60	NM	NM	NM	NM
25-Jan-18	Depth to GW	mbgs	NM	NM	NM	NM	1.54	4.48	2.44	1.35	2.24	3.62
	GW Elevation	masl	NM	NM	NM	NM	173.06	172.72	172.10	175.82	172.80	171.36
28-Feb-18	Depth to GW	mbgs	0.85	-0.06	0.17	0.24	0.72	2.43	0.95	0.57	2.15	1.71
	GW Elevation	masl	173.63	177.50	174.16	173.86	173.88	174.77	173.59	176.60	172.89	173.27
19-Apr-18	Depth to GW	mbgs	0.59	-0.10	NM	NM	0.38	1.75	0.67	0.07	0.79	1.35
	GW Elevation	masl	173.89	177.54	NM	NM	174.22	175.45	173.87	177.10	174.25	173.63
31-Jul-18	Depth to GW	mbgs	3.25	2.83	2.69	2.18	3.18	3.26	2.76	2.24	2.18	3.75
	GW Elevation	masl	171.23	174.61	171.64	171.92	171.42	173.94	171.78	174.93	172.86	171.23

Table 2: Summary of Soil Samples Submitted for Chemical Analysis

Borehole ID	Sample No.	Sample Depth (mbgs)	Soil Description	Parameter Analyzed	APEC Investigated / Rationale
BH17-1R	SS-1	0.0-0.6	Clayey silt	Metals and Inorganics	Assess background soil conditions
BH17-BR SS-1	Duplicate of BH-17-1R SS-1	0.0-0.6	Clayey silt	Metals and Inorganics	Assess background soil conditions
BH17-3R	SS-3	1.5-2.1	Silty Clay Till	Metals and Inorganics, OCPs	APEC-1
BH17-4R	SS-1	0.0-0.61	Clayey silt	Metals and Inorganics	Assess background soil conditions
BH17-5R	SS-2	0.75-1.35	Silty Clay Till	Metals and Inorganics, OCPs, PCBs	APEC-1
BH17-AR SS-2	Duplicate of BH17-5R SS-2	0.75-1.35	Silty Clay Till	Metals and Inorganics, OCPs, PCBs	APEC-1
BH17-6R	SS-1	0-0.6	Clayey silt	Metals and Inorganics	Assess background soil conditions
BH17-1T	SS-2	0.75-1.35	Fill	PHCs and BTEX	APEC-3
	SS-3	1.5-2.1	Fill	Metals and Inorganics, OCPs, PCBs	APEC-2
BH17-2T	SS-2	0.75-1.35	Fill	Metals and inorganics	APEC-2
	SS-3	1.5-2.1	Fill	PHCs and BTEX	APEC-3
BH17-AT SS2	Duplicate of BH17-2T SS-2	0.75-1.35	Fill	Metals and Inorganics	APEC-2
BH17-3T	SS-2	0.75-1.35	Fill/Silty Clay Till	Metals and Inorganics, PHCs and BTEX	APEC-2, APEC-3
BH17-BT SS2	Duplicate of BH17-3T-SS-2	0.75-1.35	Fill/Silty Clay Till	PHCs and BTEX	APEC-3
BH17-1N	SS-2	0.75-1.35	Silty Clay Till	Metals and Inorganics, OCPs, PCBs	APEC-1
BH17-2N	SS-1	0.0-0.6	Clayey silt	Metals and Inorganics	Assess background soil conditions
BH17-3N	SS-1	0.0-0.6	Clayey silt	Metals and Inorganics	Assess background soil conditions
TP3r	GS1	0-0.4	Fill	PHCs and BTEX	APEC-2, APEC-3
TP3r	GS0Dup	0-0.4	Fill	PHCs and BTEX	Duplicate of TP3r GS1
TP4r	GS1	0-0.6	Fill	PHCs and BTEX	APEC-2, APEC-3
TP6r	GS1	0-0.4	Fill	PHCs and BTEX	APEC-2, APEC-3
TP8r	GS2	0.9-2.0	Fill	Metals and Inorganics	APEC-2, APEC-3
TP9r	GS2	0.7-1.3	Fill	PHCs and BTEX	APEC-2, APEC-3
TP10r	GS1	0-0.2	Fill	PHCs and BTEX	APEC-2, APEC-3
TP10r	GS0Dup	0-0.2	Fill	PHCs and BTEX	Duplicate of TP10r GS1
TP11r	GS1	0-0.5	Fill	Metals and Inorganics	APEC-2, APEC-3

Table 2: Summary of Soil Samples Submitted for Chemical Analysis

Borehole ID	Sample No.	Sample Depth (mbgs)	Soil Description	Parameter Analyzed	APEC Investigated / Rationale
TP12r	GS1	0-0.5	Fill	Metals and Inorganics	APEC-2, APEC-3

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

Table 3: Summary of Groundwater Samples Submitted for Chemical Analysis

Well ID	Well Screen Interval (masl)			Sample Date	Parameter Analyzed	APEC Investigated
BH17-1T	170.18	-	171.68	23-Jan-18	Metals and inorganics, PHCs. VOCs, OCPs	APEC-1, APEC-3
DUP-1 (BH17-1T)	170.18	-	171.68	23-Jan-18	Metals and inorganics, PHCs. VOCs, OCPs	APEC-1, APEC-3
BH17-2T	174.04	-	175.64	02-Feb-18	Metals and inorganics, PHCs. VOCs	APEC-3
BH17-3T	171.13	-	172.93	23-Jan-18	Metals and inorganics, PHCs. VOCs	APEC-3
BH17-2N	170.30	-	172.10	Not Sampled	N/A	N/A
BH17-7R	168.80	-	172.60	23-Jan-18	Metals and inorganics, PHCs. VOCs, OCPs	APEC-1, APEC-3
BH17-1R	172.30	-	174.10	Not Sampled	N/A	N/A
MW3-17	171.19	-	172.29	Not Sampled	N/A	N/A
MW4-17	173.06	-	174.07	Not Sampled	N/A	N/A
MW1S-17	172.45	-	173.34	Not Sampled	N/A	N/A
MW1D-17	169.35	-	171.18	23-Jan-18	Metals and inorganics, PHCs. VOCs	APEC-3
				02-Feb-18	Uranium	N/A

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

Table 4: Summary of APECs Investigated

APEC	Description	PCOCs	Media	Borehole Within APEC	Samples Analysed	Parameter Analyzed
APEC-1	PCA#40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	OC Pesticides	Soil	BH17-3R	SS-3	OCPs
				BH17-5R	SS-2	OCPs
				BH17-AR	SS-2	OCPs
				BH17-1T	SS-3	OCPs
			Groundwater	MW17-1T	-	OCPs
				DUP-1	-	OCPs
				MW 1D-17	-	OCPs
				MW17-7R	-	OCPs
				MW17-1R	-	OCPs
APEC-2	PCA# 30 - Importation of Fill Material of Unknown Quality	Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR, PHCs, BTEX	Soil	BH17-1T	SS-2	PHCs and BTEX
					SS-3	M&I
				BH17-2T	SS-2	M&I
					SS-3	PHCs and BTEX
				BH17-AT	SS-2	M&I
				BH17-3T	SS-2	M&I, PHCs and BTEX
				BH17-BT	SS-2	PHCs and BTEX
				TP3r	GS1	PHCs and BTEX
					GS0Dup	PHCs and BTEX
				TP4r	GS1	PHCs and BTEX
				TP6r	GS1	PHCs and BTEX
				TP8r	GS2	M&I
				TP9r	GS2	PHCs and BTEX
				TP10r	GS1	PHCs and BTEX
					GS0Dup	PHCs and BTEX
				TP11r	GS1	M&I
				TP12r	GS1	M&I

Table 4: Summary of APECs Investigated

APEC	Description	PCOCs	Media	Borehole Within APEC	Samples Analysed	Parameter Analyzed
APEC-3	Historical use of the Property for a Rogers Communication Tower with backup generator	PHCs and BTEX	Soil	BH17-1T	SS2	PHCs and BTEX
				BH17-2T	SS3	PHCs and BTEX
				BH17-3T	SS-2	PHCs and BTEX
				BH17-BT	SS-2	PHCs and BTEX
				TP3r	GS1	PHCs and BTEX
					GS0Dup	PHCs and BTEX
				TP4r	GS1	PHCs and BTEX
				TP6r	GS1	PHCs and BTEX
				TP9r	GS2	PHCs and BTEX
				TP10r	GS1	PHCs and BTEX
					GS0Dup	PHCs and BTEX
			Groundwater	BH17-1T	-	PHCs and VOCs
				BH17-2T	-	PHCs and VOCs
				BH17-3T	-	PHCs and VOCs

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

Table 5: Summary of Metals and Inorganics in Soil

Parameter	MECP Table 1 SCS	BH-17-1R SS-1	BH-17-BR SS-1 (BH-17-1R SS-1)	BH-17-3R SS-3	BH-17-4R SS-1	BH-17-5R SS-2	BH-17-AR SS-2 (BH-17-5R SS-2)
Date of Collection		15-Nov-2017	15-Nov-2017	15-Nov-2017	15-Nov-2017	15-Nov-2017	15-Nov-2017
Date Reported		30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017
Sampling Depth (mbgs)		0.0 - 0.6	0.0 - 0.6	1.5 - 2.1	0.0 - 0.6	0.75 - 1.35	0.75-1.37
Analytical Report Reference No.		8924500	8924516	8924502	8924504	8924505	8924508
Antimony	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	18	6	6	6	6	5	5
Barium	220	80	77	109	90	93	89
Beryllium	2.5	0.7	0.6	0.6	0.8	0.6	0.6
Boron	36	6	8	11	6	10	9
Boron (Hot Water Soluble)	NA	0.12	0.15	0.68	0.16	0.12	0.12
Cadmium	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	70	24	23	23	24	21	21
Cobalt	21	13.3	13.6	15.2	13	13.4	13
Copper	92	30	23	37	25	35	36
Lead	120	16	14	15	16	13	13
Molybdenum	2	0.5	<0.5	0.8	<0.5	0.7	0.6
Nickel	82	27	24	29	29	26	24
Selenium	1.5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	1	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	2.5	0.5	0.5	1.1	<0.5	0.6	0.6
Vanadium	86	31	30	28	31	27	27
Zinc	290	62	61	63	64	58	59
Chromium VI	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity	0.57	0.212	0.199	0.201	0.249	0.123	0.123
Sodium Adsorption Ratio	2.4	0.095	0.201	0.581	0.207	0.087	0.084
pH, 2:1 CaCl2 Extraction		7.59	7.49	7.79	7.36	7.67	7.62

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

Table 5: Summary of Metals and Inorganics in Soil

Parameter	MECP Table 1 SCS	BH-17-6R SS-1	BH-17-1N SS-2	BH-17-2N SS-1	BH-17-1T SS-3	BH-17-2T SS-2	BH-17-AT SS-2 (BH-17-2T SS-2)
Date of Collection		15-Nov-2017	15-Nov-2017	15-Nov-2017	15-Nov-2017	15-Nov-2017	15-Nov-2017
Date Reported		30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017
Sampling Depth (mbgs)		0.0-0.6	0.75-1.35	0.0-0.6	1.5-2.1	0.75-1.35	0.75-1.35
Analytical Report Reference No.		8924509	8924510	8924511	8924521	8924522	8924745
Antimony	1.3	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	18	6	6	6	6	5	4
Barium	220	100	111	120	163	90	109
Beryllium	2.5	0.7	0.6	0.7	0.7	0.6	0.7
Boron	36	6	8	<5	16	14	<5
Boron (Hot Water Soluble)	NA	<0.10	0.15	0.23	0.22	0.4	0.26
Cadmium	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	70	29	24	26	25	22	25
Cobalt	21	13.7	13.7	15.7	15.7	11.9	11.1
Copper	92	25	27	14	8	18	13
Lead	120	16	22	18	17	16	16
Molybdenum	2	<0.5	0.6	0.5	1	0.8	0.6
Nickel	82	28	28	22	30	23	22
Selenium	1.5	0.5	0.4	0.8	0.9	<0.4	0.5
Silver	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	1	<0.4	<0.4	<0.4	0.7	<0.4	<0.4
Uranium	2.5	0.6	0.6	1.3	0.6	<0.5	1.1
Vanadium	86	35	31	37	29	23	28
Zinc	290	65	63	76	63	88	75
Chromium VI	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity	0.57	0.331	0.28	0.382	0.18	0.252	0.32
Sodium Adsorption Ratio	2.4	0.091	1.46	2.15	0.295	0.192	0.153
pH, 2:1 CaCl2 Extraction		7.07	7.57	6.97	7.34	7.62	7.27

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

Table 5: Summary of Metals and Inorganics in Soil

Parameter	MECP Table 1 SCS	BH-17-3T SS-2	BH-17-3N SS-1	TP8r GS2	TP11r GS1	TP12r GS1
Date of Collection		15-Nov-2017	15-Nov-2017	22-Jan-2018	22-Jan-2018	22-Jan-2018
Date Reported		30-Nov-2017	30-Nov-2017	31-Jan-2018	31-Jan-2018	31-Jan-2018
Sampling Depth (mbgs)		0.75 - 1.35	0.0-0.6	0.9-2.0	0.0-0.5	0.0-0.5
Analytical Report Reference No.		8924738	8932678	9028451	9028452	9028454
Antimony	1.3	<0.8	<0.8	1.2	<0.8	<0.8
Arsenic	18	5	5	7	4	5
Barium	220	105	89	99	88	66
Beryllium	2.5	0.6	0.7	0.7	0.8	0.6
Boron	36	10	5	7	<5	6
Boron (Hot Water Soluble)	NA	0.34	0.12	0.47	0.81	0.11
Cadmium	1.2	1.2	<0.5	0.8	<0.5	<0.5
Chromium	70	21	27	17	19	18
Cobalt	21	12.4	12.8	11.3	8.3	11.7
Copper	92	21	35	35	18	27
Lead	120	14	18	61	19	13
Molybdenum	2	0.6	0.7	0.8	<0.5	<0.5
Nickel	82	25	35	19	20	25
Selenium	1.5	<0.4	<0.4	0.6	0.6	0.4
Silver	0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	1	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	2.5	<0.5	0.5	0.7	1	<0.5
Vanadium	86	26	26	24	23	20
Zinc	290	232	81	274	87	62
Chromium VI	0.66	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	0.051	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	0.27	<0.10	<0.10	0.13	<0.10	<0.10
Electrical Conductivity	0.57	0.184	0.164	0.258	0.231	0.168
Sodium Adsorption Ratio	2.4	0.217	0.18	0.116	1.82	0.115
pH, 2:1 CaCl2 Extraction		7.6	7.38	7.24	6.41	7.26

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

Table 6: Summary of PHCs and BTEX in Soil

Parameter	MECP Table 1 SCS	BH-17-1T-SS-2	BH-17-2T-SS-3	BH-17-3T-SS-2	BH-17-BT-SS-2 (BH-17-3T-SS-2)	TP3r GS1
Date of Collection		15-Nov-2017	15-Nov-2017	15-Nov-2017	15-Nov-2017	18-Jan-2018
Date Reported		30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017	31-Jan-2018
Sampling Depth (mbgs)		0.75 - 1.35	1.5 - 2.1	0.75 - 1.35	0.75 - 1.35	0.0-0.4
Analytical Report Reference No.		8924520	8924730	8924738	8924747	9028448
Benzene	0.02	<0.02	<0.02	<0.02	<0.02	**0.63**
Toluene	0.2	<0.08	<0.08	<0.08	<0.08	**3.8**
Ethylbenzene	0.05	<0.05	<0.05	<0.05	<0.05	**1.4**
Xylene Mixture	0.05	<0.05	<0.05	<0.05	<0.05	**7.7**
F1 (C6 to C10)	25	<5	<5	<5	<5	**61**
F1 (C6 to C10) minus BTEX	25	<5	<5	<5	<5	**47**
F2 (C10 to C16)	10	<10	<10	<10	<10	**27**
F3 (C16 to C34)	240	<50	<50	<50	<50	**270**
F4 (C34 to C50)	120	<50	<50	<50	<50	52

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

Table 6: Summary of PHCs and BTEX in Soil

Parameter	MECP Table 1 SCS	TP3r GS0Dup	TP4r GS1	TP6r GS1	TP9r GS2	TP10r GS1
Date of Collection		18-Jan-2018	18-Jan-2018	18-Jan-2018	18-Jan-2018	18-Jan-2018
Date Reported		31-Jan-2018	31-Jan-2018	31-Jan-2018	31-Jan-2018	31-Jan-2018
Sampling Depth (mbgs)		0.0-0.4	0.0-0.6	0.0-0.4	0.7-1.3	0.0-0.2
Analytical Report Reference No.		9028453	9028449	9028450	9028447	9028445
Benzene	0.02	**0.81**	<0.02	<0.02	<0.02	<0.02
Toluene	0.2	**4.6**	**0.57**	<0.08	<0.08	<0.08
Ethylbenzene	0.05	**1.5**	**0.16**	<0.05	<0.05	<0.05
Xylene Mixture	0.05	**9.5**	**1.6**	<0.05	<0.05	<0.05
F1 (C6 to C10)	25	**79**	**32**	<5	<5	<5
F1 (C6 to C10) minus BTEX	25	**63**	**30**	<5	<5	<5
F2 (C10 to C16)	10	**30**	<10	<10	<10	<10
F3 (C16 to C34)	240	**300**	<50	210	<50	<50
F4 (C34 to C50)	120	51	<50	<50	<50	<50

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

Table 6: Summary of PHCs and BTEX in Soil

Parameter	MECP Table 1 SCS	TP10r GS0 Dup
Date of Collection		18-Jan-2018
Date Reported		31-Jan-2018
Sampling Depth (mbgs)		0.0-0.2
Analytical Report Reference No.		9028446
Benzene	0.02	<0.02
Toluene	0.2	<0.08
Ethylbenzene	0.05	<0.05
Xylene Mixture	0.05	<0.05
F1 (C6 to C10)	25	<5
F1 (C6 to C10) minus BTEX	25	<5
F2 (C10 to C16)	10	<10
F3 (C16 to C34)	240	80
F4 (C34 to C50)	120	<50

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

Table 7: Summary of OCPs in Soil

Parameter	MECP Table 1 SCS	BH-17-3R SS-3	BH-17-5R SS-2	BH-17-AR SS-2 (BH-17-5R SS-2)	BH-17-1N SS-2
Date of Collection		15-Nov-2017	15-Nov-2017	15-Nov-2017	15-Nov-2017
Date Reported		30-Nov-2017	30-Nov-2017	30-Nov-2017	30-Nov-2017
Sample Depth (mbgs)		1.5-2.1	0.75 - 1.35	0.75 - 1.35	0.75 - 1.35
Analytical Report Reference No.		8924502	8924505	8924508	8924510
Hexachloroethane	0.01	<0.01	<0.01	<0.01	<0.01
Gamma-Hexachlorocyclohexane	0.01	<0.005	<0.005	<0.005	<0.005
Heptachlor	0.05	<0.005	<0.005	<0.005	<0.005
Aldrin	0.05	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	0.05	<0.005	<0.005	<0.005	<0.005
Endosulfan	0.04	<0.005	<0.005	<0.005	<0.005
Chlordane	0.05	<0.007	<0.007	<0.007	<0.007
DDE	0.05	<0.007	<0.007	<0.007	<0.007
DDD	0.05	<0.007	<0.007	<0.007	<0.007
DDT	1.4	<0.007	<0.007	<0.007	<0.007
Dieldrin	0.05	<0.005	<0.005	<0.005	<0.005
Endrin	0.04	<0.005	<0.005	<0.005	<0.005
Methoxychlor	0.05	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	0.01	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	0.01	<0.01	<0.01	<0.01	<0.01

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

Table 8: Summary of PCBs in Soil

Parameter	MECP Table 1 SCS	BH-17-1T SS-3
Date of Collection		15-Nov-2017
Date Reported		30-Nov-2017
Samaple Depth(mbgs)		1.5-2.3
Analytical Report Reference No.		8924521
Aroclor 1242		<0.1
Aroclor 1248		<0.1
Aroclor 1254		<0.1
Aroclor 1260		<0.1
Polychlorinated Biphenyls	0.3	<0.1

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

Table 9: Summary of Metals and Inorganics in Groundwater

Parameter	MECP Table 1 SCS	MW 17 - 1T	DUP-1	MW 17 - 3T	MW 1D - 17	MW1D-17	MW 17 - 7R	MW17-2t
Date of Collection		23-Jan-18	23-Jan-18	23-Jan-18	23-Jan-18	2-Feb-18	23-Jan-18	2-Feb-18
Date Reported		1-Feb-18	1-Feb-18	1-Feb-18	1-Feb-18	8-Feb-18	1-Feb-18	8-Feb-18
Screen Interval (mbgs)		2.8-4.3	2.8-4.3	1.4-2.9	3.8-5.3	3.8-5.3	2.0-3.5	1.8-3.4
Analytical Report Reference No.		9028692	9028698	9028693	9028694	9043568	9028695	9043569
Antimony	1.5	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0
Arsenic	13	<1.0	<1.0	<1.0	<1.0	-	<1.0	2
Barium	610	60	59	39.4	88.9	-	78	97.5
Beryllium	0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5
Boron	1700	51.6	55.2	123	194	-	42.4	65.4
Cadmium	0.5	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
Chromium	11	<2.0	<2.0	<2.0	<2.0	-	<2.0	<2.0
Cobalt	3.8	<0.5	<0.5	<0.5	<0.5	-	<0.5	0.5
Copper	5	1.9	1.8	1.6	<1.0	-	1.2	5
Lead	1.9	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5
Molybdenum	23	1.2	1.2	1.3	9.3	-	2.4	4.1
Nickel	14	1.1	1	<1.0	<1.0	-	<1.0	2
Selenium	5	<1.0	1.2	<1.0	3.1	-	<1.0	1.5
Silver	0.3	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
Thallium	0.5	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3
Uranium	8.9	4.4	4.6	2.7	**21.4***	**22.6***	1.9	2.1
Vanadium	3.9	0.9	1	<0.4	0.8	-	0.6	1.5
Zinc	160	<5.0	<5.0	<5.0	<5.0	-	<5.0	7.1
Mercury	0.1	<0.02	<0.02	<0.02	<0.02	-	<0.02	<0.02
Chromium VI	25	<5	<5	<5	<5	-	<5	<5
Cyanide	5	<2	<2	<2	<2	-	<2	<2
Sodium	490000	19200	19300	19700	11500	-	13300	11300
Chloride	790000	14500	13600	12800	14500	-	12000	11200

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

Table 10: Summary of PHCs in Groundwater

Parameter	MECP Table # SCS	MW 17 - 1T	DUP-1	MW 17 - 3T	MW 1D - 17	MW 17 - 7R	MW17-2t
Date of Collection		23-Jan-18	23-Jan-18	23-Jan-18	23-Jan-18	23-Jan-18	2-Feb-18
Date Reported		1-Feb-18	1-Feb-18	1-Feb-18	8-Feb-18	1-Feb-18	8-Feb-18
Screen Interval (mbgs)		2.8-4.3	2.8-4.3	1.4-2.9	3.8-5.3	2.0-3.5	1.8-3.4
Analytical Report Reference No.		9028692	9028698	9028693	9028694	9028695	9043569
Benzene	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	0.8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylenes (Total)	72	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
F1 (C6 to C10)	420	<25	<25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	420	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	150	<100	<100	<100	<100	<100	<100
F3 (C16 to C34)	500	<100	<100	<100	<100	<100	<100
F4 (C34 to C50)	500	<100	<100	<100	<100	<100	<100

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

Table 11: Summary of VOCs in Groundwater

Parameter	MECP Table 1 SCS	MW 17 - 1T	DUP-1	MW 17 - 3T	MW 1D - 17	MW 17 - 7R	MW17-2t
Date of Collection		23-Jan-18	23-Jan-18	23-Jan-18	23-Jan-18	23-Jan-18	2-Feb-18
Date Reported		1-Feb-18	1-Feb-18	1-Feb-18	1-Feb-18	1-Feb-18	1-Feb-18
Screen Interval (mbgs)		2.8-4.3	2.0-3.5	1.4-2.9	3.8-5.3	2.0-3.5	1.8-3.4
Analytical Report Reference No.		9028692	9028698	9028693	9028694	9028695	9043569
Acetone	2700	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bromomethane	0.89	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Carbon Tetrachloride	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloroform	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
cis- 1,2-Dichloroethylene	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibromochloromethane	2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichlorobenzene, 1,2-	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichlorobenzene, 1,3-	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichlorobenzene, 1,4-	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichlorodifluoromethane	590	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloroethane, 1,1-	0.5	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dichloroethane, 1,2-	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloroethylene, 1,1-	0.5	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dichloropropane, 1,2-	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloropropene, 1,3-	0.5	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Methyl Ethyl Ketone	400	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl Isobutyl Ketone	640	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether	15	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methylene Chloride	5	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
n-Hexane	5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethane, 1,1,1,2-	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethane, 1,1,2,2-	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	0.8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
trans- 1,2-Dichloroethylene	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethane, 1,1,1-	0.5	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Trichloroethane, 1,1,2-	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	150	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	0.5	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Xylene Mixture	72	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at

Table 11: Summary of VOCs in Groundwater

Parameter	MECP Table 1 SCS	Field Blank
Date of Collection		23-Jan-18
Date Reported		1-Feb-18
Screen Interval (mbgs)		N/A
Analytical Report Reference No.		9028697
Acetone	2700	<1.0
Benzene	0.5	<0.20
Bromodichloromethane	2	<0.20
Bromoform	5	<0.10
Bromomethane	0.89	<0.20
Carbon Tetrachloride	0.2	<0.20
Chlorobenzene	0.5	<0.10
Chloroform	2	<0.20
cis- 1,2-Dichloroethylene	1.6	<0.20
Dibromochloromethane	2	<0.10
Dichlorobenzene, 1,2-	0.5	<0.10
Dichlorobenzene, 1,3-	0.5	<0.10
Dichlorobenzene, 1,4-	0.5	<0.10
Dichlorodifluoromethane	590	<0.20
Dichloroethane, 1,1-	0.5	<0.30
Dichloroethane, 1,2-	0.5	<0.20
Dichloroethylene, 1,1-	0.5	<0.30
Dichloropropane, 1,2-	0.5	<0.20
Dichloropropene, 1,3-	0.5	<0.30
Ethylbenzene	0.5	<0.10
Ethylene Dibromide	0.2	<0.10
Methyl Ethyl Ketone	400	<1.0
Methyl Isobutyl Ketone	640	<1.0
Methyl tert-butyl ether	15	<0.20
Methylene Chloride	5	<0.30
n-Hexane	5	<0.20
Styrene	0.5	<0.10
Tetrachloroethane, 1,1,1,2-	1.1	<0.10
Tetrachloroethane, 1,1,2,2-	0.5	<0.10
Tetrachloroethylene	0.5	<0.20
Toluene	0.8	<0.20
trans- 1,2-Dichloroethylene	1.6	<0.20
Trichloroethane, 1,1,1-	0.5	<0.30
Trichloroethane, 1,1,2-	0.5	<0.20
Trichloroethylene	0.5	<0.20
Trichlorofluoromethane	150	<0.40
Vinyl Chloride	0.5	<0.17
Xylene Mixture	72	<0.20

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

Table 12: Summary of OCPs in Groundwater

Parameter	MECP Table 1 SCS	MW 17 - 1T	DUP-1	MW 1D - 17	MW 17 - 7R	MW 17 - 1R
Date of Collection		23-Jan-18	23-Jan-18	23-Jan-18	23-Jan-18	23-Jan-18
Date Reported		1-Feb-18	1-Feb-18	1-Feb-18	1-Feb-18	1-Feb-18
Screen Interval (mbgs)		2.8-4.3	2.8-4.3	3.8-5.3	2.0-3.5	3.1-4.6
Analytical Report Reference No.		9028692	9028698	9028694	9028695	9028696
Gamma-Hexachlorocyclohexane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aldrin	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane	0.06	<0.04	<0.04	<0.04	<0.04	<0.04
DDE	10	<0.01	<0.01	<0.01	<0.01	<0.01
DDD	1.8	<0.05	<0.05	<0.05	<0.05	<0.05
DDT	0.05	<0.04	<0.04	<0.04	<0.04	<0.04
Dieldrin	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
Endrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	0.05	<0.04	<0.04	<0.04	<0.04	<0.04
Hexachlorobenzene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

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

Table 13: Summary of Maximum Concentrations in Soil

	Parameter	Standard	Maximum Concentration	Location
Metals and ORPs	Antimony	1.3	1.2	TP8r GS2
	Arsenic	18	7	TP8r GS2
	Barium	220	163	BH-17-1T SS-3
	Beryllium	2.5	0.8	BH-17-4R SS-1
	Boron	36	16	BH-17-1T SS-3
	Boron (Hot Water Soluble)	NA	0.81	TP11r GS1
	Cadmium	1.2	1.2	BH-17-3T SS-2
	Chromium	70	29	BH-17-6R SS-1
	Cobalt	21	15.7	BH-17-2N SS-1
	Copper	92	37	BH-17-3R SS-3
	Lead	120	61	TP8r GS2
	Molybdenum	2	1	BH-17-1T SS-3
	Nickel	82	35	BH-17-3N SS-1
	Selenium	1.5	0.9	BH-17-1T SS-3
	Silver	0.5	<0.2	All Samples
	Thallium	1	0.7	BH-17-1T SS-3
	Uranium	2.5	1.3	BH-17-2N SS-1
	Vanadium	86	37	BH-17-2N SS-1
	Zinc	290	274	TP8r GS2
	Chromium VI	0.66	<0.2	All Samples
	Cyanide	0.051	<0.040	All Samples
	Mercury	0.27	0.13	TP8r GS2
	Electrical Conductivity	0.57	0.382	BH-17-2N SS-1
	Sodium Adsorption Ratio	2.4	2.15	BH-17-2N SS-1
	pH, 2:1 CaCl2 Extraction	5-9	7.79	BH-17-3R SS-3
PHCs	Benzene	0.02	**0.81**	TP3r GS0Dup
	Toluene	0.2	**4.6**	TP3r GS0Dup
	Ethylbenzene	0.05	**1.5**	TP3r GS0Dup
	Xylene Mixture	0.05	**9.5**	TP3r GS0Dup
	F1 (C6 to C10)	25	**79**	TP3r GS0Dup
	F1 (C6 to C10) minus BTEX	25	**63**	TP3r GS0Dup
	F2 (C10 to C16)	10	**30**	TP3r GS0Dup
	F3 (C16 to C34)	240	**300**	TP3r GS0Dup

Table 13: Summary of Maximum Concentrations in Soil

Parameter		Standard	Maximum Concentration	Location
OCPs	Hexachloroethane	0.01	<0.01	All Samples
	Gamma-Hexachlorocyclohexane	0.01	<0.005	All Samples
	Heptachlor	0.05	<0.005	All Samples
	Aldrin	0.05	<0.005	All Samples
	Heptachlor Epoxide	0.05	<0.005	All Samples
	Endosulfan	0.04	<0.005	All Samples
	Chlordane	0.05	<0.007	All Samples
	DDE	0.05	<0.007	All Samples
	DDD	0.05	<0.007	All Samples
	DDT	1.4	<0.007	All Samples
	Dieldrin	0.05	<0.005	All Samples
	Endrin	0.04	<0.005	All Samples
	Methoxychlor	0.05	<0.005	All Samples
	Hexachlorobenzene	0.01	<0.005	All Samples
	Hexachlorobutadiene	0.01	<0.01	All Samples

Table 14: Summary of Maximum Concentrations in Groundwater

Parameter		Standard	Maximum Concentration	Location
Metals and ORPs	Antimony	1.5	<1.0	All Samples
	Arsenic	13	2	MW17-2t
	Barium	610	97.5	MW17-2t
	Beryllium	0.5	<0.5	All Samples
	Boron	1700	194	MW 1D - 17
	Cadmium	0.5	<0.2	All Samples
	Chromium	11	<2.0	All Samples
	Cobalt	3.8	0.5	MW17-2t
	Copper	5	5	MW17-2t
	Lead	1.9	<0.5	All Samples
	Molybdenum	23	9.3	MW 1D - 17
	Nickel	14	2	MW17-2t
	Selenium	5	3.1	MW 1D - 17
	Silver	0.3	<0.2	All Samples
	Thallium	0.5	<0.3	All Samples
	Uranium	8.9	**22.6***	MW1D-17
	Vanadium	3.9	1.5	MW17-2t
	Zinc	160	7.1	MW17-2t
	Mercury	0.1	<0.02	All Samples
	Chromium VI	25	<5	All Samples
	Cyanide	5	<2	All Samples
	Sodium	490000	19700	MW 17 - 3T
	Chloride	790000	14500	MW 17 - 1T
PHCs	Benzene	0.5	<0.20	All Samples
	Ethylbenzene	0.5	<0.10	All Samples
	Toluene	0.8	<0.20	All Samples
	Xylenes (Total)	72	<0.20	All Samples
	F1 (C6 to C10)	420	<25	All Samples
	F1 (C6 to C10) minus BTEX	420	<25	All Samples
	F2 (C10 to C16)	150	<100	All Samples
	F4 (C34 to C50)	500	<100	All Samples
VOCs	Acetone	2700	<1.0	All Samples
	Benzene	0.5	<0.20	All Samples
	Bromodichloromethane	2	<0.20	All Samples
	Bromoform	5	<0.10	All Samples
	Bromomethane	0.89	<0.20	All Samples
	Carbon Tetrachloride	0.2	<0.20	All Samples
	Chlorobenzene	0.5	<0.10	All Samples
	Chloroform	2	<0.20	All Samples
	cis- 1,2-Dichloroethylene	1.6	<0.20	All Samples
	Dibromochloromethane	2	<0.10	All Samples
	Dichlorobenzene, 1,2-	0.5	<0.10	All Samples
	Dichlorobenzene, 1,3-	0.5	<0.10	All Samples
	Dichlorobenzene, 1,4-	0.5	<0.10	All Samples
	Dichlorodifluoromethane	590	<0.20	All Samples

Table 14: Summary of Maximum Concentrations in Groundwater

Parameter		Standard	Maximum Concentration	Location
VOCs	Dichloroethane, 1,1-	0.5	<0.30	All Samples
	Dichloroethane, 1,2-	0.5	<0.20	All Samples
	Dichloroethylene, 1,1-	0.5	<0.30	All Samples
	Dichloropropane, 1,2-	0.5	<0.20	All Samples
	Dichloropropene, 1,3-	0.5	<0.30	All Samples
	Ethylbenzene	0.5	<0.10	All Samples
	Ethylene Dibromide	0.2	<0.10	All Samples
	Methyl Ethyl Ketone	400	<1.0	All Samples
	Methyl Isobutyl Ketone	640	<1.0	All Samples
	Methyl tert-butyl ether	15	<0.20	All Samples
	Methylene Chloride	5	<0.30	All Samples
	n-Hexane	5	<0.20	All Samples
	Styrene	0.5	<0.10	All Samples
	Tetrachloroethane, 1,1,1,2-	1.1	<0.10	All Samples
	Tetrachloroethane, 1,1,2,2-	0.5	<0.10	All Samples
	Tetrachloroethylene	0.5	<0.20	All Samples
	Toluene	0.8	<0.20	All Samples
	trans- 1,2-Dichloroethylene	1.6	<0.20	All Samples
	Trichloroethane, 1,1,1-	0.5	<0.30	All Samples
	Trichloroethane, 1,1,2-	0.5	<0.20	All Samples
	Trichloroethylene	0.5	<0.20	All Samples
	Trichlorofluoromethane	150	<0.40	All Samples
	Vinyl Chloride	0.5	<0.17	All Samples
	Xylene Mixture	72	<0.20	All Samples
OCPs	Gamma-Hexachlorocyclohexane	0.01	<0.01	All Samples
	Heptachlor	0.01	<0.01	All Samples
	Aldrin	0.01	<0.01	All Samples
	Heptachlor Epoxide	0.01	<0.01	All Samples
	Endosulfan	0.05	<0.05	All Samples
	Chlordane	0.06	<0.04	All Samples
	DDE	10	<0.01	All Samples
	DDD	1.8	<0.05	All Samples
	DDT	0.05	<0.04	All Samples
	Dieldrin	0.05	<0.02	All Samples
	Endrin	0.05	<0.05	All Samples
	Methoxychlor	0.05	<0.04	All Samples
	Hexachlorobenzene	0.01	<0.01	All Samples
	Hexachlorobutadiene	0.01	<0.01	All Samples
	Hexachloroethane	0.01	<0.01	All Samples

Notes for Soil & Groundwater Summary Tables

1.	mbgs =	Meters below ground surface
2.	masl =	Meters above sea level
3.		Units for all soil analyses are in µg/g (ppm) unless otherwise indicated
4.		Units for all groundwater analyses are in µg/L (ppb) unless otherwise indicated
5.	MECP Table 1 SCS =	Full Depth Background Site Condition Standards as contained in Table 1 of the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", published by the MOECC on April 15, 2011
6.		For soil and groundwater analytical results, concentration exceeds the applicable Standards
7.	NM =	Not Monitored
8.	PHC =	Petroluem Hydrocarbon
9.	PAH =	Polyaromatic Hydrocarbon
10.	BTEX =	Benzene, Toluene, Ethylbenzene, Xylene
11.	OCPs =	Organochlorine Pesticides
12.	*	Considered by QP to be natural background conditions

Appendix A – Legal Survey

PLAN OF SURVEY OF

PART OF LOT 16
CONCESSION 1
NORTH OF DUNDAS STREET

GEOGRAPHIC TOWNSHIP OF TRAFALGAR

NOW IN THE

TOWN OF OAKVILLE

REGIONAL MUNICIPALITY OF HALTON

SCALE 1 : 500

10 0 10 20 30 metres

J.D. BARNES LIMITED

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

CONTROL POINT TABLE				
CP	EASTING	NORTHING	ELEV	DESC
1	601863.86	4815734.67	175.40	CC
2	602063.83	4815532.75	174.17	SPIKE
3	601974.39	4815625.64	175.02	CC
4	601583.51	4815427.63	177.12	SIB
5	601786.10	4815348.63	174.92	SIB
6	601795.40	4815216.49	175.47	SIB
7	601922.78	4815361.71	175.52	SIB
8	601870.30	4815466.86	174.27	SIB

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 0.99706.

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)	601 832.84	4 815 739.82
ORP (B)	602 048.95	4 815 524.99

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

LEGEND

△	DENOTES	SITE CONTROL POINT
■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
IB	DENOTES	IRON BAR
CC	DENOTES	CUT CROSS
CP	DENOTES	CONTROL POINT
BG	DENOTES	BELOW GRADE
NDS	DENOTES	NORTH OF DUNDAS STREET
WIT	DENOTES	WITNESS
MEAS	DENOTES	MEASURED
760	DENOTES	A.H. McDONELL, O.L.S.
1188	DENOTES	O.A. SEATON, O.L.S.
1225	DENOTES	R.S. QUERUBIN, O.L.S.
RPE	DENOTES	RADY-PENTEK & EDWARD SURVEYING LTD.
NI	DENOTES	NOT IDENTIFIABLE
OU	DENOTES	ORIGIN UNKNOWN
P1	DENOTES	PLAN 20R-13395
P2	DENOTES	PLAN 20R-13449
P3	DENOTES	PLAN 20R-17351
P4	DENOTES	PLAN 20R-19585
P5	DENOTES	PLAN 20R-13203
P6	DENOTES	PLAN 20R-17367
P7	DENOTES	REGISTERED PLAN 20M-1143

ALL SET SSIB 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.

MH	DENOTES MANHOLE
SAN MH	DENOTES SANITARY MANHOLE
WMH	DENOTES WATER MANHOLE
AP	DENOTES ANCHOR POLE
HP	DENOTES HYDRO POLE
TJB	DENOTES TELEPHONE JUNCTION BOX
PED	DENOTES TELEPHONE PEDESTAL
H	DENOTES FIRE HYDRANT
WK	DENOTES WATER KEY
WELL	DENOTES HYDRO POLE
E	DENOTES OVERHEAD ELECTRICAL WIRE

INDEX CONTOURS ARE AT 1.00m INTERVALS.
INTEMEDIATE CONTOURS ARE AT 0.25m INTERVALS.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT AND THE SURVEYORS ACT THE REGULATIONS MADE UNDER THEM.

2. THE SURVEY WAS COMPLETED ON OCTOBER 31, 2016.

November 7, 2016
DATE

R. S. QUERUBIN
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
1992011
THIS PLAN IS NOT VALID UNLESS IT IS ACCESSED WITH A DIGITAL COPY ISSUED BY THE SURVEYOR in accordance with Regulation 1026, Section 29(3).

J.D.BARNES LIMITED
SURVEYING MAPPING GIS
LAND INFORMATION SPECIALISTS
401 WHEELABRATOR WAY, SUITE A, MILTON, ON L9T 3C1
T: (905) 875-9955 F: (905) 875-9956 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
RA/RSQ	RSQ	16-30-979-00-A

FILE: G:\16-30-979\00\Drawing\16-30-979-00-adj.dgn DATED: NOVEMBER 8, 2016

PLOTTED: 11/8/2016

Appendix B – Sampling and Analysis Plan

Project Number: 17-508-20 November 10, 2017

Argo Development Corporation.
2173 Turnberry Road
Burlington, ON, L7M 4P8

Attention: Mr. Kevin Singh
Via Email: Kevin Sing kevin@argoland.com

RE: Sampling and Analysis Plan
Phase Two Environmental Site Assessment
3270 Sixth Line, Oakville, ON

Dear: Mr. Singh

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 3270 Sixth Line, Oakville, ON, (the Property). 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 Property.

The Phase Two ESA will involve intrusive investigation in the areas determined in the site visit to be Areas 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, it is DS's understanding that the Property is a 12.58 hectare (31.08 acres) parcel of land which is currently used for Agricultural purposes. The first developed use of the Property is interpreted to be Agricultural. Based on the findings of the Phase One ESA, a total of 3 potentially contaminating activities were identified on the Phase One Property which are considered to be contributing to Areas of Potential Environmental Concern (APECs) on the Phase Two Property. A summary of the APECs identified, the potential contaminants of concern, and the media potentially impacted is presented in Table 1 below:

Table 1: Areas of Potential Environmental Concern

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC-1	On-site	PCA#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications - Historical use of the Property for agricultural purposes	On Site	OC Pesticides	Soil and Ground water
APEC-2	Southeast portion of the Property	PCA#30 Importation of Fill Material of Unknown Quality - Inferred presence of fill material on-Site,	On Site	PHCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR	Soil
APEC-3	Within the vicinity of the historical communication tower on the southeast portion of the site.	PCA#28 Gasoline and Associated Products Storage in Fixed Tanks - Historical use of the portion of the Property for Roger Cell Tower	On Site	PHC (F1-F4), BTEX	Soil and Ground water

Notes:

1. PHC (F1-F4) = Petroleum Hydrocarbons in the F1-F4 fraction ranges
2. VOCs = Volatile Organic Compounds
3. PAHs = Polycyclic Aromatic Hydrocarbons
4. OC Pesticides = Organochlorine Pesticides

3. Site Investigation Program

he 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;
- Thirteen (13) boreholes will be advanced on the Phase Two Property, to an approximate maximum depth of 5.0 mbgs or until sample refusal depth using a truck-mounted drill rig. The soil profile from each borehole will be logged in the field and samples will be screened

for total organic vapours (TOV) with both a photoionization detector (PID) and a combustible gas detector (CGD). The location of the boreholes will be selected to investigate any APECs 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 be first encountered at an approximate depth of 2 mbgs. Select boreholes will be cored into bedrock to further investigate potential groundwater impacts.

- Twelve (12) test pits were advanced on the Phase Two Property to a maximum depth of 2.0m using a truck-mounted excavator to further investigate the possible presence of fill materials.
- Groundwater monitoring wells will be installed within 6 of the 13 boreholes advanced in order to facilitate the collection of groundwater samples to assess the groundwater quality below the Property and to establish the direction of groundwater flow;
- 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;
- The groundwater levels in the wells will be measured at least 24 hours after well development has been completed, to determine the groundwater elevation. The wells will be surveyed to a geodetic benchmark to determine groundwater flow direction;
- The groundwater wells will be purged to remove stagnant water and sampled for laboratory testing of relevant parameters of concern;
- Both soil and groundwater samples will be submitted for chemical analysis by a CALA laboratory in accordance with the Ontario MECP 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. split spoon sampler, interface probe, etc.) 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 monitoring wells will be installed using 50 mm inner diameter Schedule 40 polyvinyl chloride (PVC), equipped with 50 mm inner diameter Schedule 40 PVC with #10 slot well screens. A silica sand filter pack will be placed around the well screen and up to 0.61 metres above the top of the well screen. The well annulus will be sealed with hydrated bentonite. All wells will be protected with either a flush mount well casing, or a locked monument style casing.

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

Soils:

- Seventeen (17) soil samples for analysis of Metals and other regulated parameters (ORPs)
- Eleven (11) soil samples for analysis of Petroleum Hydrocarbons in the F1 to F4 fraction ranges (F1-F4);
- Three (11) soil samples for analysis of benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX), Volatile Organic Compounds (VOCs);
- One (1) soil sample for analysis of Polychlorinated Biphenyls (PCBs);
- Four (4) soil samples for analysis of OC Pesticides;
- Four (4) soil samples for grain size analysis (single sieve);

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

Groundwater:

- Six (6) groundwater samples for analysis of Metals and ORPs
- Six (6), groundwater samples for analysis of PHCs (F1 to F4) and BTEX;
- Seven (7), groundwater samples for analysis of VOCs;
- Four (4) groundwater samples for analysis of OC Pesticides;

One quality control/quality assurance (QAQC) sample will be submitted for analysis per ten (10) samples analyzed in accordance with O.Reg. 153/04. One laboratory supplied field and trip blank will be submitted as part of each sample submission event for analysis of volatile parameters (i.e. VOCs, BTEX, PHCs F1-BTEX).

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 Property. The SAP was compiled to collect data to provide information on soil and/or groundwater quality in each 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 identified APECs, is discovered which will require further delineation to identify source(s); and
- If the sampling results indicate that the soil and/or groundwater 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.

Patrick Fioravanti, B.Sc., P.Geo., QP_{ESA}

Manager – Environmental Services

Appendix C – Borehole Logs

LOG OF TEST PIT TP1n

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 3

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	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	**SILTY SAND AND GRAVEL:** with organics, rootlets, muck, dark brown, wet, loose		1	GS							
0.5	**CLAYEY SILT:** some gravel/ cobble, red shale pieces, some sand, brown, moist, very stiff		2	GS							
1.3	**END OF TEST PIT**										

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

DS SOIL TEST PIT-2016 18-531-100.GPJ DS.GDT 9/5/19

LOG OF TEST PIT TP1r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 2

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE (20 40 60 80 100)	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
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS / 0.3 m							
0.0	**CLAYEY SILT:** with organics and rootlets, some sand, some gravel, brown, moist (disturbed)		1	GS								
0.3	**CLAYEY SILT:** some gravel, some sand, brown, moist, very stiff		2	GS								
1.5	**END OF TEST PIT**											

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

DS SOIL TEST PIT-2016 18-531-100.GPJ DS.GDT 9/5/19

LOG OF TEST PIT TP2r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 4

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	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	**CLAYEY SILT:** with organics and rootlets, some sand, some gravel, cobble, brown, moist (disturbed)		1	GS							
0.2	**CLAYEY SILT:** with gravel, red shale pieces, some sand, brown, moist, hard		2	GS							
1.3	**END OF TEST PIT**										

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

LOG OF TEST PIT TP3r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 5

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE (20 40 60 80 100)	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	**FILL:** silty sand and gravel, with organics, rootlets, wood debris, dark brown to black, moist, loose (faint odour)		1	GS							
0.4	**CLAYEY SILT:** with gravel, some sand, cobble, brown, moist		2	GS							
1.3	**END OF TEST PIT**										

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

DS SOIL TEST PIT-2016 18-531-100.GPJ DS.GDT 9/5/19

LOG OF TEST PIT TP4r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 6

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE (20 40 60 80 100)	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
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m							
0.0	**FILL:** silty sand and gravel, with organics, some brick and wood debris, brown and black, moist, loose (faint odour)		1	GS								
0.6	**CLAYEY SILT:** with gravel, some sand, rootlets, brown, moist, very stiff		2	GS								
1.3	**END OF TEST PIT**											

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

DS SOIL TEST PIT-2016 18-531-100.GPJ DS.GDT 9/5/19

LOG OF TEST PIT TP5r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 7

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE (20 40 60 80 100)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT (w_P w 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
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m							
0.0	**FILL:** silty sand and gravel, with organics, some wood debris, brown to black, moist, loose		1	GS								
0.3	**FILL:** clayey silt, with gravel, cobble, brown, moist, very stiff		2	GS								
0.5	**END OF TEST PIT**											

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

DS SOIL TEST PIT-2016 18-531-100.GPJ DS.GDT 9/5/19

LOG OF TEST PIT TP6r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 8

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	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	**FILL:** silty sand and gravel, with organics, construction waste, some plastics and glass, brown to black, moist, loose		1	GS								
0.4	**CLAYEY SILT:** with gravel, cobble, some sand, trace rootlets, brown, moist, very stiff		2	GS								
1.3	**END OF TEST PIT**											

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

DS SOIL TEST PIT-2016 18-531-100.GPJ DS.GDT 9/5/19

LOG OF TEST PIT TP7r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 9

SOIL PROFILE (m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE (20 40 60 80 100)	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	**FILL:** silty sand and gravel, with organics, some wood debris and concrete chuncks, brown to black, moist, loose to compact (faint odour)		1	GS								
0.5	**CLAYEY SILT:** with gravel, some cobble, some sand, brown, moist, very stiff		2	GS								
1.3	**END OF TEST PIT**											

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

DS SOIL TEST PIT-2016 18-531-100.GPJ DS.GDT 9/5/19

LOG OF TEST PIT TP8r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 10

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE (20 40 60 80 100)	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 (%)
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m							GR SA SI CL
0.0	**FILL:** 650mm burm pile above ground surface		1	GS								
0.7	**FILL:** clayey silt, some gravel, boulders, concrete chuncks, organics, brown to black, moist, soft (faint odour)		2	GS								
1.6	**FILL:** clayey silt, with concrete chunks, some pockets of black organic-rich silt, trace wood debris, brown, moist, soft (some odour)		3	GS								
2.7	**END OF TEST PIT**											

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

LOG OF TEST PIT TP9r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 11

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE (20 40 60 80 100)	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
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m							
0.0	**SANDY SILT:** some gravel, some clay, organics, rootlets, brown to black, moist, loose		1	GS								
0.7	**CLAYEY SILT:** with gravel, some cobble, some sand, reddish brown, moist, very stiff											
1	grey below 1.0m		2	GS								
1.3	**END OF TEST PIT**											

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

LOG OF TEST PIT TP10r

PROJECT: Phase Two ESA

CLIENT: Argo Development Corporation

PROJECT LOCATION: 3270 Sixth Line, Oakville, ON

DATUM: Geodetic

BH LOCATION: See Drawing 4

DRILLING DATA

Method: Excavator

Diameter:

Date: Jan/18/2018

REF. NO.: 17-508-100

ENCL NO.: 12

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE (20 40 60 80 100)	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
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m							
0.0	**FILL** gravel, some sand		1	GS								
0.2	**FILL:** silty sand and gravel, with some construction debris, wood, concrete, brick, brown to black, moist, loose (slight odour)		2	GS								
1.5	**CLAYEY SILT:** with gravel, some sand, reddish brown to grey, moist, very stiff		3	GS								
2.0	**END OF TEST PIT**											

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

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LOG OF BOREHOLE BH17-1N

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/14/2017

REF. NO.: 17-508-100
ENCL NO.: 9

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
174.4							
0.0 / 174.2	**TOPSOIL:** 200mm						
0.2 / 173.6	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)		1	SS	5		174
0.8 / 172.1	**SILTY CLAY TILL:** some sand, trace gravel, reddish brown, moist, hard		2	SS	12		173
			3	SS	50/ 100mm		
2.3 / 170.1	**SHALE:** Queenston Formation, reddish brown, weathered		4	SS	50/ 125mm		172
			5	NR	50/ no penetration		171
4.3	auger refusal at 4.3m **END OF BOREHOLE** Notes: 1) Borehole dry and open upon completion.						

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

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)

METHANE AND GRAIN SIZE DISTRIBUTION (%)

GR	SA	SI	CL
12	17	49	22

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

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LOG OF BOREHOLE BH17-1R

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/14/2017

REF. NO.: 17-508-100
ENCL NO.: 2

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100)	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)	METHANE AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
177.2												
177.0 / 0.0	**TOPSOIL:** 125mm											
0.1 / 176.4	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)		1	SS	10		177					
0.8	**SILTY CLAY TILL:** some sand, trace gravel, reddish brown, moist, hard		2	SS	30		176					3 20 57 20
			3	SS	29		175					
			4	SS	39							
			5	SS	50/ 100mm		174					
172.6							173					
4.6 / 172.3	**SHALE:** Queenston Formation, reddish brown, weathered		6	SS	50/ 125mm	W. L. 172.6 m Jan 18, 2018						
4.9	**END OF BOREHOLE**											

Notes:
1) Borehole dry and open upon completion.
2) Monitoring Well installed upon completion.

Water Level Readings:

Date	Water Level (mbgs)
Nov. 16, 2017	dry
Jan. 9, 2018	4.6
Jan. 18, 2018	4.6
Jan. 24, 2018	4.6

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

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LOG OF BOREHOLE BH17-1T

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/15/2017

REF. NO.: 17-508-100
ENCL NO.: 12

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100)	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)	METHANE AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
174.5												
0.0	150mm sand & gravel, brown, moist, over **FILL:** clayey silt to silty clay, trace to some organics, wood pieces, trace shale fragments, brown, moist, firm to stiff		1	SS	9		174		○			
1			2	SS	5	▽		W. L. 173.4 m Jan 24, 2018				
							173					
2			3	SS	8							
172.2						▽		W. L. 172.3 m Jan 18, 2018				
2.3	**SHALE:** Queenston Formation, reddish brown, weathered		4	SS	50/ 125mm		172					
3			5	SS	50/ 25mm	▽		W. L. 171.2 m Jan 09, 2018				
4												
170.2												
4.3	**END OF BOREHOLE** Notes: 1) Borehole dry and open upon completion. 2) Monitoring Well installed upon completion. 3) Borehole terminated on sound shale. Water Level Readings: Date — Water Level (mbgs) Nov. 16, 2017 — dry Jan. 9, 2018 — 3.3 Jan. 18, 2018 — 2.2 Jan. 24, 2018 — 1.1											

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

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

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LOG OF BOREHOLE BH17-2N

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/15/2017

REF. NO.: 17-508-100
ENCL NO.: 10

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
0.0 / 173.9	**TOPSOIL:** 200mm						
0.2	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)		1	SS	5		174
173.1							
1.0	**SILTY CLAY TILL:** some sand, trace gravel, reddish brown, moist, hard		2	SS	20		173
						W. L. 172.9 m Jan 24, 2018	
			3	SS	50/ 75mm		
2 / 171.8							172
2.3	**SHALE:** Queenston Formation, reddish brown, weathered		4	SS	50/ 100mm	W. L. 171.6 m Jan 18, 2018	
3							171
170.5			5	SS	50/ 50mm		
3.6	**END OF BOREHOLE**						

Notes:
1) Borehole dry and open upon completion.
2) Monitoring Well installed upon completion.

Water Level Readings:

Date	Water Level (mbgs)
Nov. 16, 2017	dry
Jan. 9, 2018	dry
Jan. 18, 2018	2.5
Jan. 24, 2018	1.2

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

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)
METHANE AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

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LOG OF BOREHOLE BH17-2R

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/14/2017

REF. NO.: 17-508-100
ENCL NO.: 3

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
176.2							
0.0 / 175.9	**TOPSOIL:** 300mm		1	SS	16		176
0.3 / 175.4	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)						
0.8	**SILTY CLAY TILL:** some sand, trace gravel, occasional cobble/boulder, reddish brown, moist, hard		2	SS	34		175
			3	SS	34		
			4	SS	38		174
			5	SS	60		173
171.6							172
4.6 / 171.2	**SHALE:** Queenston Formation, reddish brown, weathered		6	SS	50/ 75mm		
5.0	**END OF BOREHOLE** Notes: 1) Borehole dry and open upon completion.						

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

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)

METHANE AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

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LOG OF BOREHOLE BH17-2T

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/15/2017

REF. NO.: 17-508-100
ENCL NO.: 13

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS "N" 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100)	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)	METHANE AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
174.4												
0.0	150mm sand & gravel, brown, moist, over											
	FILL: clayey silt to sandy silt, trace to some organics, wood pieces, trace shale fragments, brown, moist, loose to compact		1	SS	11		174					
1			2	SS	9		173					
2			3	SS	5							
			4	SS	11		172		○			
3 171.3												
3.1 171.0	**SHALE:** Queenston Formation, reddish brown, weathered		5	SS	50/ 50mm		W. L. 171.3 m Nov 16, 2017					
3.4	**END OF BOREHOLE**											

Notes:
1) Borehole dry and open upon completion.
2) Monitoring Well installed upon completion.

Water Level Readings:

Date	Water Level (mbgs)
Nov. 16, 2017	3.1
Jan. 9, 2018	3.1

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

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

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LOG OF BOREHOLE BH17-3N

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/15/2017

REF. NO.: 17-508-100
ENCL NO.: 11

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100)	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)	METHANE AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
174.8												
0.0 / 174.8	**TOPSOIL:** 150mm											
0.2	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)		1	SS	12							
174.0							174					
0.8	**SILTY CLAY TILL:** some sand, trace gravel, reddish brown, moist, hard		2	SS	34							3 19 53 25
1												
			3	SS	50/ 125mm		173					
2												
			4	SS	50/ 125mm		172					
3 / 171.7												
3.1 / 171.4	**SHALE:** Queenston Formation, reddish brown, weathered		5	SS	50/ 25mm							
3.4	**END OF BOREHOLE**											

Notes:
1) Borehole dry and open upon completion.

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

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LOG OF BOREHOLE BH17-3R

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/14/2017

REF. NO.: 17-508-100
ENCL NO.: 4

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
174.7 / 0.0	**TOPSOIL:** 150mm						
174.5 / 0.2	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)		1	SS	8		
173.9 / 0.8	**SILTY CLAY TILL:** some sand, trace gravel, occasional cobble/boulder, reddish brown, moist, hard		2	SS	38		174
			3	SS	43		173
172.4 / 2.3	**SHALE:** Queenston Formation, reddish brown, weathered		4	SS	50/ 75mm		172
170.7 / 4.0	**END OF BOREHOLE** Notes: 1) Borehole dry and open upon completion.						171

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

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)
METHANE AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

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LOG OF BOREHOLE BH17-3T

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/15/2017

REF. NO.: 17-508-100
ENCL NO.: 14

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100)	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)	METHANE AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
174.3												
0.0	150mm sand & gravel, brown, moist, over		1	SS	9		174					
	FILL: clayey silt to sandy silt, trace to some organics, wood pieces, trace shale fragments, brown, moist, loose to compact					▽						
173.3							W. L. 173.7 m Jan 24, 2018					
1.0	**SILTY CLAY TILL:** some sand, trace gravel, occasional cobble/boulder, reddish brown, moist, hard		2	SS	40							
172.8						▽	173					
1.5	**SHALE:** Queenston Formation, reddish brown, weathered						W. L. 172.9 m Jan 18, 2018					
			3	SS	50/ 100mm							
							172					
			4	SS	50/ 125mm	▽	W. L. 171.8 m Nov 16, 2017					
171.4												
2.9	**END OF BOREHOLE**											

Notes:
1) Borehole dry and open upon completion.
2) Monitoring Well installed upon completion.

Water Level Readings:

Date	Water Level (mbgs)
Nov. 16, 2017	2.5
Jan. 9, 2018	dry
Jan. 18, 2018	1.4
Jan. 24, 2018	0.6

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

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

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

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LOG OF BOREHOLE BH17-4R

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/14/2017

REF. NO.: 17-508-100
ENCL NO.: 5

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 20 40 60 80 100	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)	METHANE AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
174.7												
0.0 / 174.5	**TOPSOIL:** 200mm											
0.2 / 174.1	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)		1	SS	11							
0.6	**SILTY CLAY TILL:** some sand, trace gravel, occasional cobble/boulder, reddish brown, moist, hard		2	SS	42		174					5 15 56 23
1			3	SS	50/ 125mm		173					
2 / 172.4												
2.3	**SHALE:** Queenston Formation, reddish brown, weathered		4	SS	50/ 25mm		172					
3			5	SS	50 / no penetration							
4 / 170.4							171					
4.3	**END OF BOREHOLE** Notes: 1) Borehole dry and open upon completion.											

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

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LOG OF BOREHOLE BH17-5R

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/14/2017

REF. NO.: 17-508-100
ENCL NO.: 6

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION
175.5							
0.0 / 175.2	**TOPSOIL:** 300mm		1	SS	6		175
0.3 / 174.7	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)		2	SS	22		174
0.8	**SILTY CLAY TILL:** some sand, trace gravel, occasional cobble/boulder, reddish brown, moist, hard		3	SS	37		
172.4			4	SS	50/ 125mm		173
3.1 / 171.8	**SHALE:** Queenston Formation, reddish brown, weathered		5	SS	50/ 100mm		172
3.7	**END OF BOREHOLE**						

Notes:
1) Borehole dry and open upon completion.

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

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)
METHANE AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

DS CONSULTANTS LTD.
Geotechnical ◆ Environmental ◆ Materials ◆ Hydrogeology

LOG OF BOREHOLE BH17-6R

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/14/2017

REF. NO.: 17-508-100
ENCL NO.: 7

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100)	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)	METHANE AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
174.8												
0.0 / 174.7	**TOPSOIL:** 150mm											
0.2 / 174.0	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)		1	SS	9				○ at 10			
0.8 / 172.3	**SILTY CLAY TILL:** some sand, trace gravel, reddish brown, moist, hard		2	SS	37		174		○ at 10			
			3	SS	42		173		○ at 20			
2.5 / 171.7	**SHALE:** Queenston Formation, reddish brown, weathered		4	SS	50/ 25mm		172					
3.1	**END OF BOREHOLE** Notes: 1) Borehole dry and open upon completion.											

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

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

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

DS CONSULTANTS LTD.
Geotechnical ◆ Environmental ◆ Materials ◆ Hydrogeology

LOG OF BOREHOLE BH17-7R

PROJECT: Phase Two ESA
CLIENT: Argo Development Corporation
PROJECT LOCATION: 3270 Sixth Line, Oakville, ON
DATUM: Geodetic
BOREHOLE LOCATION: See Drawing 4

DRILLING DATA
Method: Solid Stem Augers
Diameter: 150mm
Date: Nov/15/2017

REF. NO.: 17-508-100
ENCL NO.: 8

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION
174.6							
0.0 / 174.4	**TOPSOIL:** 150mm						
0.2 / 173.8	**CLAYEY SILT:** some sand, reddish brown, moist, stiff (weathered/disturbed)		1	SS	8		174
0.8 / 171.1	**SILTY CLAY TILL:** some sand, trace gravel, occasional cobble/boulder, reddish brown, moist, hard		2	SS	36	W. L. 172.5 m Jan 24, 2018 W. L. 172.1 m Jan 18, 2018	173
3.6 / 171.0	**SHALE:** Queenston Formation, reddish brown, weathered						171
3.6	**END OF BOREHOLE**						

Notes:
1) Borehole dry and open upon completion.
2) Monitoring Well installed upon completion.

Water Level Readings:

Date	Water Level (mbgs)
Nov. 16, 2017	dry
Jan. 9, 2018	dry
Jan. 18, 2018	2.5
Jan. 24, 2018	2.1

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

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)

METHANE AND GRAIN SIZE DISTRIBUTION (%)
GR SA SI CL

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

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

DS SOIL LOG PROJECT 508-10 - OAKVILLE-ARGO - GEO.GPJ DS.GDT 9/5/19

Appendix D – Certificates of Analysis

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: MISC AGAT CLIENT ON, ON

ATTENTION TO: Scott Watson

PROJECT: 508-26

AGAT WORK ORDER: 17T286307

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Nov 30, 2017

PAGES (INCLUDING COVER): 13

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
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Certificate of Analysis

AGAT WORK ORDER: 17T286307

PROJECT: 508-26

CLIENT NAME: MISC AGAT CLIENT ON

SAMPLING SITE:

ATTENTION TO: Scott Watson

SAMPLED BY:Scott Watson

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2017-11-20 **DATE REPORTED: 2017-11-30**

					SAMPLE DESCRIPTION:	BH-17-1R-SS-1	BH-17-3R-SS-3	BH-17-4R-SS-1	BH-17-5R-SS-2	BH-17-AR-SS-2	BH-17-6R-SS-1	BH-17-1N-SS-2
					SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil
					DATE SAMPLED:	2017-11-15	2017-11-15	2017-11-15	2017-11-15	2017-11-15	2017-11-15	2017-11-15
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**		**8924500**	**8924502**	**8924504**	**8924505**	**8924508**	**8924509**	**8924510**
Antimony	µg/g	1.3	1.3	0.8		<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]
Arsenic	µg/g	18	18	1		6[<A]	6[<A]	6[<A]	5[<A]	5[<A]	6[<A]	6[<A]
Barium	µg/g	220	220	2		80[<A]	109[<A]	90[<A]	93[<A]	89[<A]	100[<A]	111[<A]
Beryllium	µg/g	2.5	2.5	0.5		0.7[<A]	0.6[<A]	0.8[<A]	0.6[<A]	0.6[<A]	0.7[<A]	0.6[<A]
Boron	µg/g	36	36	5		6[<A]	11[<A]	6[<A]	10[<A]	9[<A]	6[<A]	8[<A]
Boron (Hot Water Soluble)	µg/g	NA	1.5	0.10		0.12[<B]	0.68[<B]	0.16[<B]	0.12[<B]	0.12[<B]	<0.10[<B]	0.15[<B]
Cadmium	µg/g	1.2	1.2	0.5		<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]
Chromium	µg/g	70	70	2		24[<A]	23[<A]	24[<A]	21[<A]	21[<A]	29[<A]	24[<A]
Cobalt	µg/g	21	22	0.5		13.3[<A]	15.2[<A]	13.0[<A]	13.4[<A]	13.0[<A]	13.7[<A]	13.7[<A]
Copper	µg/g	92	92	1		30[<A]	37[<A]	25[<A]	35[<A]	36[<A]	25[<A]	27[<A]
Lead	µg/g	120	120	1		16[<A]	15[<A]	16[<A]	13[<A]	13[<A]	16[<A]	22[<A]
Molybdenum	µg/g	2	2	0.5		0.5[<A]	0.8[<A]	<0.5[<A]	0.7[<A]	0.6[<A]	<0.5[<A]	0.6[<A]
Nickel	µg/g	82	82	1		27[<A]	29[<A]	29[<A]	26[<A]	24[<A]	28[<A]	28[<A]
Selenium	µg/g	1.5	1.5	0.4		<0.4[<A]	<0.4[<A]	<0.4[<A]	<0.4[<A]	<0.4[<A]	0.5[<A]	0.4[<A]
Silver	µg/g	0.5	0.5	0.2		<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]
Thallium	µg/g	1	1	0.4		<0.4[<A]	<0.4[<A]	<0.4[<A]	<0.4[<A]	<0.4[<A]	<0.4[<A]	<0.4[<A]
Uranium	µg/g	2.5	2.5	0.5		0.5[<A]	1.1[<A]	<0.5[<A]	0.6[<A]	0.6[<A]	0.6[<A]	0.6[<A]
Vanadium	µg/g	86	86	1		31[<A]	28[<A]	31[<A]	27[<A]	27[<A]	35[<A]	31[<A]
Zinc	µg/g	290	290	5		62[<A]	63[<A]	64[<A]	58[<A]	59[<A]	65[<A]	63[<A]
Chromium VI	µg/g	0.66	0.66	0.2		<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]
Cyanide	µg/g	0.051	0.051	0.040		<0.040[<A]	<0.040[<A]	<0.040[<A]	<0.040[<A]	<0.040[<A]	<0.040[<A]	<0.040[<A]
Mercury	µg/g	0.27	0.27	0.10		<0.10[<A]	<0.10[<A]	<0.10[<A]	<0.10[<A]	<0.10[<A]	<0.10[<A]	<0.10[<A]
Electrical Conductivity	mS/cm	0.57	0.7	0.005		0.212[<A]	0.201[<A]	0.249[<A]	0.123[<A]	0.123[<A]	0.331[<A]	0.280[<A]
Sodium Adsorption Ratio	NA	2.4	5	NA		0.095[<A]	0.581[<A]	0.207[<A]	0.087[<A]	0.084[<A]	0.091[<A]	1.46[<A]
pH, 2:1 CaCl2 Extraction	pH Units			NA		7.59	7.79	7.36	7.67	7.62	7.07	7.57

Certified By: Amanjot Bhela

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 17T286307

PROJECT: 508-26

CLIENT NAME: MISC AGAT CLIENT ON

SAMPLING SITE:

ATTENTION TO: Scott Watson

SAMPLED BY:Scott Watson

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2017-11-20 **DATE REPORTED: 2017-11-30**

					SAMPLE DESCRIPTION:	BH-17-2N-SS-1	BH-17-BR-SS-1	BH-17-1T-SS-3	BH-17-2T-SS-2	BH-17-3T-SS-2	BH-17-AT-SS-2	BH-17-3N-SS-1
					SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil
					DATE SAMPLED:	2017-11-15	2017-11-15	2017-11-15	2017-11-15	2017-11-15	2017-11-15	2017-11-15
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**		**8924511**	**8924516**	**8924521**	**8924522**	**8924738**	**8924745**	**8932678**
Antimony	µg/g	1.3	1.3	0.8		<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8	<0.8[<A]	<0.8[<A]	<0.8[<A]
Arsenic	µg/g	18	18	1		6[<A]	6[<A]	6[<A]	5	5[<A]	4[<A]	5[<A]
Barium	µg/g	220	220	2		120[<A]	77[<A]	163[<A]	90	105[<A]	109[<A]	89[<A]
Beryllium	µg/g	2.5	2.5	0.5		0.7[<A]	0.6[<A]	0.7[<A]	0.6	0.6[<A]	0.7[<A]	0.7[<A]
Boron	µg/g	36	36	5		<5[<A]	8[<A]	16[<A]	14	10[<A]	<5[<A]	5[<A]
Boron (Hot Water Soluble)	µg/g	NA	1.5	0.10		0.23[<B]	0.15[<B]	0.22[<B]	0.40	0.34[<B]	0.26[<B]	0.12[<B]
Cadmium	µg/g	1.2	1.2	0.5		<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5	1.2[A]	<0.5[<A]	<0.5[<A]
Chromium	µg/g	70	70	2		26[<A]	23[<A]	25[<A]	22	21[<A]	25[<A]	27[<A]
Cobalt	µg/g	21	22	0.5		15.7[<A]	13.6[<A]	15.7[<A]	11.9	12.4[<A]	11.1[<A]	12.8[<A]
Copper	µg/g	92	92	1		14[<A]	23[<A]	8[<A]	18	21[<A]	13[<A]	35[<A]
Lead	µg/g	120	120	1		18[<A]	14[<A]	17[<A]	16	14[<A]	16[<A]	18[<A]
Molybdenum	µg/g	2	2	0.5		0.5[<A]	<0.5[<A]	1.0[<A]	0.8	0.6[<A]	0.6[<A]	0.7[<A]
Nickel	µg/g	82	82	1		22[<A]	24[<A]	30[<A]	23	25[<A]	22[<A]	35[<A]
Selenium	µg/g	1.5	1.5	0.4		0.8[<A]	<0.4[<A]	0.9[<A]	<0.4	<0.4[<A]	0.5[<A]	<0.4[<A]
Silver	µg/g	0.5	0.5	0.2		<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2	<0.2[<A]	<0.2[<A]	<0.2[<A]
Thallium	µg/g	1	1	0.4		<0.4[<A]	<0.4[<A]	0.7[<A]	<0.4	<0.4[<A]	<0.4[<A]	<0.4[<A]
Uranium	µg/g	2.5	2.5	0.5		1.3[<A]	0.5[<A]	0.6[<A]	<0.5	<0.5[<A]	1.1[<A]	0.5[<A]
Vanadium	µg/g	86	86	1		37[<A]	30[<A]	29[<A]	23	26[<A]	28[<A]	26[<A]
Zinc	µg/g	290	290	5		76[<A]	61[<A]	63[<A]	88	232[<A]	75[<A]	81[<A]
Chromium VI	µg/g	0.66	0.66	0.2		<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2	<0.2[<A]	<0.2[<A]	<0.2[<A]
Cyanide	µg/g	0.051	0.051	0.040		<0.040[<A]	<0.040[<A]	<0.040[<A]	<0.040	<0.040[<A]	<0.040[<A]	<0.040[<A]
Mercury	µg/g	0.27	0.27	0.10		<0.10[<A]	<0.10[<A]	<0.10[<A]	<0.10	<0.10[<A]	<0.10[<A]	<0.10[<A]
Electrical Conductivity	mS/cm	0.57	0.7	0.005		0.382[<A]	0.199[<A]	0.180[<A]	0.252	0.184[<A]	0.320[<A]	0.164[<A]
Sodium Adsorption Ratio	NA	2.4	5	NA		2.15[<A]	0.201[<A]	0.295[<A]	0.192	0.217[<A]	0.153[<A]	0.180[<A]
pH, 2:1 CaCl2 Extraction	pH Units			NA		6.97	7.49	7.34	7.62	7.60	7.27	7.38

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, B Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8924500-8932678 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Amanjot Bhela

AGAT Laboratories

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FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 17T286307

PROJECT: 508-26

CLIENT NAME: MISC AGAT CLIENT ON

SAMPLING SITE:

ATTENTION TO: Scott Watson

SAMPLED BY:Scott Watson

O. Reg. 153(511) - OC Pesticides (Soil)

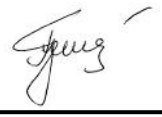
DATE RECEIVED: 2017-11-20 **DATE REPORTED: 2017-11-30**

					SAMPLE DESCRIPTION:	BH-17-3R-SS-3	BH-17-5R-SS-2	BH-17-AR-SS-2	BH-17-1N-SS-2
					SAMPLE TYPE:	Soil	Soil	Soil	Soil
					DATE SAMPLED:	2017-11-15	2017-11-15	2017-11-15	2017-11-15
Parameter	**Unit**	**G / S: A**	**G / S: B**	**RDL**		**8924502**	**8924505**	**8924508**	**8924510**
Hexachloroethane	µg/g	0.01	0.01	0.01		<0.01[<A]	<0.01[<A]	<0.01[<A]	<0.01[<A]
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.01	0.005		<0.005[<A]	<0.005[<A]	<0.005[<A]	<0.005[<A]
Heptachlor	µg/g	0.05	0.05	0.005		<0.005[<A]	<0.005[<A]	<0.005[<A]	<0.005[<A]
Aldrin	µg/g	0.05	0.05	0.005		<0.005[<A]	<0.005[<A]	<0.005[<A]	<0.005[<A]
Heptachlor Epoxide	µg/g	0.05	0.05	0.005		<0.005[<A]	<0.005[<A]	<0.005[<A]	<0.005[<A]
Endosulfan	µg/g	0.04	0.04	0.005		<0.005[<A]	<0.005[<A]	<0.005[<A]	<0.005[<A]
Chlordane	µg/g	0.05	0.05	0.007		<0.007[<A]	<0.007[<A]	<0.007[<A]	<0.007[<A]
DDE	µg/g	0.05	0.05	0.007		<0.007[<A]	<0.007[<A]	<0.007[<A]	<0.007[<A]
DDD	µg/g	0.05	0.05	0.007		<0.007[<A]	<0.007[<A]	<0.007[<A]	<0.007[<A]
DDT	µg/g	1.4	1.4	0.007		<0.007[<A]	<0.007[<A]	<0.007[<A]	<0.007[<A]
Dieldrin	µg/g	0.05	0.05	0.005		<0.005[<A]	<0.005[<A]	<0.005[<A]	<0.005[<A]
Endrin	µg/g	0.04	0.04	0.005		<0.005[<A]	<0.005[<A]	<0.005[<A]	<0.005[<A]
Methoxychlor	µg/g	0.05	0.05	0.005		<0.005[<A]	<0.005[<A]	<0.005[<A]	<0.005[<A]
Hexachlorobenzene	µg/g	0.01	0.02	0.005		<0.005[<A]	<0.005[<A]	<0.005[<A]	<0.005[<A]
Hexachlorobutadiene	µg/g	0.01	0.01	0.01		<0.01[<A]	<0.01[<A]	<0.01[<A]	<0.01[<A]
Moisture Content	%			0.1		10.8	11.8	11.9	18.9
Surrogate	**Unit**		**Acceptable Limits**						
TCMX	%		50-140			60	64	66	56
Decachlorobiphenyl	%		60-130			68	88	100	96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, B Refers to Table 8: Generic Site Condition Standards for Use within 30 m of a Water Body in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8924502-8924510 Results are based on the dry weight of the soil.
Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.
Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 17T286307

PROJECT: 508-26

CLIENT NAME: MISC AGAT CLIENT ON

SAMPLING SITE:

ATTENTION TO: Scott Watson

SAMPLED BY:Scott Watson

O. Reg. 153(511) - PCBs (Soil)

DATE RECEIVED: 2017-11-20

DATE REPORTED: 2017-11-30

		SAMPLE DESCRIPTION:		BH-17-1T-SS-3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2017-11-15
Parameter	**Unit**	**G / S**	**RDL**	**8924521**
Aroclor 1242	µg/g		0.1	<0.1
Aroclor 1248	µg/g		0.1	<0.1
Aroclor 1254	µg/g		0.1	<0.1
Aroclor 1260	µg/g		0.1	<0.1
Polychlorinated Biphenyls	µg/g		0.1	<0.1
Moisture Content	%		0.1	20.5
Surrogate	**Unit**	**Acceptable Limits**		
Decachlorobiphenyl	%	60-140		84

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

8924521 Results are based on the dry weight of soil extracted.

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PROJECT: 508-26

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SAMPLING SITE:

ATTENTION TO: Scott Watson

SAMPLED BY:Scott Watson

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2017-11-20 **DATE REPORTED: 2017-11-30**

		SAMPLE DESCRIPTION:		BH-17-1T-SS-2	BH-17-2T-SS-3	BH-17-3T-SS-2	BH-17-BT-SS-2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-11-15	2017-11-15	2017-11-15	2017-11-15
Parameter	**Unit**	**G / S**	**RDL**	**8924520**	**8924730**	**8924738**	**8924747**
Benzene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g		0.08	<0.08	<0.08	<0.08	<0.08
Ethylbenzene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	µg/g		0.05	<0.05	<0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g		5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g		10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g		50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g		50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA	NA
Moisture Content	%		0.1	19.6	13.0	6.9	21.5
Surrogate	**Unit**	**Acceptable Limits**					
Terphenyl	%	60-140		88	118	83	84

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

8924520-8924747 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

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CLIENT NAME: MISC AGAT CLIENT ON

AGAT WORK ORDER: 17T286307

PROJECT: 508-26

ATTENTION TO: Scott Watson

SAMPLING SITE:

SAMPLED BY:Scott Watson

Soil Analysis

RPT Date: Nov 30, 2017			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	8924500	8924500	<0.8	<0.8	NA	< 0.8	97%	70%	130%	100%	80%	120%	101%	70%	130%
Arsenic	8924500	8924500	6	6	0.0%	< 1	98%	70%	130%	98%	80%	120%	88%	70%	130%
Barium	8924500	8924500	80	83	3.7%	< 2	99%	70%	130%	100%	80%	120%	94%	70%	130%
Beryllium	8924500	8924500	0.7	0.7	NA	< 0.5	102%	70%	130%	101%	80%	120%	78%	70%	130%
Boron	8924500	8924500	6	7	NA	< 5	108%	70%	130%	108%	80%	120%	108%	70%	130%
Boron (Hot Water Soluble)	8924500	8924500	0.12	0.12	NA	< 0.10	101%	60%	140%	97%	70%	130%	98%	60%	140%
Cadmium	8924500	8924500	<0.5	<0.5	NA	< 0.5	99%	70%	130%	112%	80%	120%	97%	70%	130%
Chromium	8924500	8924500	24	24	0.0%	< 2	105%	70%	130%	110%	80%	120%	107%	70%	130%
Cobalt	8924500	8924500	13.3	13.4	0.7%	< 0.5	101%	70%	130%	102%	80%	120%	96%	70%	130%
Copper	8924500	8924500	30	30	0.0%	< 1	103%	70%	130%	105%	80%	120%	105%	70%	130%
Lead	8924500	8924500	16	16	0.0%	< 1	104%	70%	130%	109%	80%	120%	99%	70%	130%
Molybdenum	8924500	8924500	0.5	0.6	NA	< 0.5	104%	70%	130%	104%	80%	120%	101%	70%	130%
Nickel	8924500	8924500	27	27	0.0%	< 1	100%	70%	130%	100%	80%	120%	92%	70%	130%
Selenium	8924500	8924500	<0.4	<0.4	NA	< 0.4	97%	70%	130%	95%	80%	120%	95%	70%	130%
Silver	8924500	8924500	<0.2	<0.2	NA	< 0.2	98%	70%	130%	109%	80%	120%	94%	70%	130%
Thallium	8924500	8924500	<0.4	<0.4	NA	< 0.4	96%	70%	130%	101%	80%	120%	91%	70%	130%
Uranium	8924500	8924500	0.5	0.5	NA	< 0.5	99%	70%	130%	101%	80%	120%	95%	70%	130%
Vanadium	8924500	8924500	31	31	0.0%	< 1	99%	70%	130%	100%	80%	120%	96%	70%	130%
Zinc	8924500	8924500	62	63	1.6%	< 5	101%	70%	130%	103%	80%	120%	116%	70%	130%
Chromium VI	8924301		<0.2	<0.2	NA	< 0.2	95%	70%	130%	100%	80%	120%	97%	70%	130%
Cyanide	8924500	8924500	<0.040	<0.040	NA	< 0.040	90%	70%	130%	92%	80%	120%	109%	70%	130%
Mercury	8924500	8924500	<0.10	<0.10	NA	< 0.10	108%	70%	130%	99%	80%	120%	97%	70%	130%
Electrical Conductivity	8922337	8924500	0.169	0.182	7.4%	< 0.005	97%	90%	110%	NA			NA		
Sodium Adsorption Ratio	8924500	8924500	0.095	0.097	2.1%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	8925657		7.48	7.50	0.3%	NA	101%	80%	120%	NA			NA		
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	8922337		<0.8	<0.8	NA	< 0.8	90%	70%	130%	101%	80%	120%	104%	70%	130%
Arsenic	8922337		6	6	0.0%	< 1	97%	70%	130%	91%	80%	120%	95%	70%	130%
Barium	8922337		86	82	4.8%	< 2	103%	70%	130%	98%	80%	120%	100%	70%	130%
Beryllium	8922337		0.6	0.6	NA	< 0.5	77%	70%	130%	97%	80%	120%	100%	70%	130%
Boron	8922337		5	<5	NA	< 5	77%	70%	130%	99%	80%	120%	96%	70%	130%
Boron (Hot Water Soluble)	8928100		0.17	0.19	NA	< 0.10	114%	60%	140%	96%	70%	130%	99%	60%	140%
Cadmium	8922337		<0.5	<0.5	NA	< 0.5	98%	70%	130%	100%	80%	120%	102%	70%	130%
Chromium	8922337		25	24	4.1%	< 2	96%	70%	130%	108%	80%	120%	106%	70%	130%
Cobalt	8922337		13.1	12.8	2.3%	< 0.5	95%	70%	130%	102%	80%	120%	99%	70%	130%
Copper	8922337		40	39	2.5%	< 1	97%	70%	130%	114%	80%	120%	110%	70%	130%
Lead	8922337		18	17	5.7%	< 1	107%	70%	130%	103%	80%	120%	102%	70%	130%
Molybdenum	8922337		<0.5	0.5	NA	< 0.5	103%	70%	130%	104%	80%	120%	105%	70%	130%
Nickel	8922337		27	26	3.8%	< 1	96%	70%	130%	103%	80%	120%	99%	70%	130%

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CLIENT NAME: MISC AGAT CLIENT ON

AGAT WORK ORDER: 17T286307

PROJECT: 508-26

ATTENTION TO: Scott Watson

SAMPLING SITE:

SAMPLED BY:Scott Watson

Soil Analysis (Continued)

RPT Date: Nov 30, 2017			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Selenium	8922337		<0.4	<0.4	NA	< 0.4	116%	70%	130%	97%	80%	120%	108%	70%	130%
Silver	8922337		<0.2	<0.2	NA	< 0.2	83%	70%	130%	107%	80%	120%	105%	70%	130%
Thallium	8922337		<0.4	<0.4	NA	< 0.4	93%	70%	130%	96%	80%	120%	97%	70%	130%
Uranium	8922337		0.5	<0.5	NA	< 0.5	102%	70%	130%	90%	80%	120%	93%	70%	130%
Vanadium	8922337		26	25	3.9%	< 1	87%	70%	130%	102%	80%	120%	100%	70%	130%
Zinc	8922337		112	111	0.9%	< 5	94%	70%	130%	104%	80%	120%	118%	70%	130%
Chromium VI	8928090		<0.2	<0.2	NA	< 0.2	72%	70%	130%	100%	80%	120%	98%	70%	130%
Cyanide	8927472		<0.040	<0.040	NA	< 0.040	97%	70%	130%	107%	80%	120%	83%	70%	130%
Mercury	8922337		<0.10	<0.10	NA	< 0.10	106%	70%	130%	97%	80%	120%	104%	70%	130%
Electrical Conductivity	8922337		0.169	0.182	7.4%	< 0.005	97%	90%	110%	NA			NA		
Sodium Adsorption Ratio	8922337		0.280	0.286	2.1%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	8928090		10.1	10.0	1.0%	NA	101%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Amanjot Bhela

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Quality Assurance

CLIENT NAME: MISC AGAT CLIENT ON

AGAT WORK ORDER: 17T286307

PROJECT: 508-26

ATTENTION TO: Scott Watson

SAMPLING SITE:

SAMPLED BY:Scott Watson

Trace Organics Analysis

RPT Date: Nov 30, 2017			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - OC Pesticides (Soil)															
Hexachloroethane	8922035		< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	86%	50%	140%	84%	50%	140%
Gamma-Hexachlorocyclohexane	8922035		< 0.005	< 0.005	NA	< 0.005	101%	50%	140%	80%	50%	140%	84%	50%	140%
Heptachlor	8922035		< 0.005	< 0.005	NA	< 0.005	93%	50%	140%	84%	50%	140%	80%	50%	140%
Aldrin	8922035		< 0.005	< 0.005	NA	< 0.005	95%	50%	140%	94%	50%	140%	82%	50%	140%
Heptachlor Epoxide	8922035		< 0.005	< 0.005	NA	< 0.005	89%	50%	140%	102%	50%	140%	94%	50%	140%
Endosulfan	8922035		< 0.005	< 0.005	NA	< 0.005	85%	50%	140%	94%	50%	140%	88%	50%	140%
Chlordane	8922035		< 0.007	< 0.007	NA	< 0.007	87%	50%	140%	85%	50%	140%	86%	50%	140%
DDE	8922035		< 0.007	< 0.007	NA	< 0.007	90%	50%	140%	103%	50%	140%	92%	50%	140%
DDD	8922035		< 0.007	< 0.007	NA	< 0.007	93%	50%	140%	101%	50%	140%	80%	50%	140%
DDT	8922035		< 0.007	< 0.007	NA	< 0.007	95%	50%	140%	84%	50%	140%	78%	50%	140%
Dieldrin	8922035		< 0.005	< 0.005	NA	< 0.005	86%	50%	140%	104%	50%	140%	96%	50%	140%
Endrin	8922035		< 0.005	< 0.005	NA	< 0.005	85%	50%	140%	102%	50%	140%	96%	50%	140%
Methoxychlor	8922035		< 0.005	< 0.005	NA	< 0.005	89%	50%	140%	102%	50%	140%	102%	50%	140%
Hexachlorobenzene	8922035		< 0.005	< 0.005	NA	< 0.005	99%	50%	140%	96%	50%	140%	86%	50%	140%
Hexachlorobutadiene	8922035		< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	84%	50%	140%	74%	50%	140%
O. Reg. 153(511) - PCBs (Soil)															
Aroclor 1242	8927134		< 0.1	< 0.1	NA	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1248	8927134		< 0.1	< 0.1	NA	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1254	8927134		< 0.1	< 0.1	NA	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1260	8927134		< 0.1	< 0.1	NA	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Polychlorinated Biphenyls	8927134		< 0.1	< 0.1	NA	< 0.1	97%	60%	140%	95%	60%	140%	95%	60%	140%
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	8922006		< 0.02	< 0.02	NA	< 0.02	114%	60%	130%	115%	60%	130%	112%	60%	130%
Toluene	8922006		< 0.08	< 0.08	NA	< 0.08	115%	60%	130%	117%	60%	130%	113%	60%	130%
Ethylbenzene	8922006		< 0.05	< 0.05	NA	< 0.05	111%	60%	130%	114%	60%	130%	118%	60%	130%
Xylene Mixture	8922006		< 0.05	< 0.05	NA	< 0.05	112%	60%	130%	116%	60%	130%	114%	60%	130%
F1 (C6 to C10)	8922006		< 5	< 5	NA	< 5	95%	60%	130%	93%	85%	115%	78%	70%	130%
F2 (C10 to C16)	8919530		< 10	< 10	NA	< 10	105%	60%	130%	100%	80%	120%	71%	70%	130%
F3 (C16 to C34)	8919530		< 50	< 50	NA	< 50	102%	60%	130%	93%	80%	120%	82%	70%	130%
F4 (C34 to C50)	8919530		< 50	< 50	NA	< 50	104%	60%	130%	99%	80%	120%	95%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

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Method Summary

CLIENT NAME: MISC AGAT CLIENT ON

AGAT WORK ORDER: 17T286307

PROJECT: 508-26

ATTENTION TO: Scott Watson

SAMPLING SITE:

SAMPLED BY:Scott Watson

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010B	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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Method Summary

CLIENT NAME: MISC AGAT CLIENT ON

AGAT WORK ORDER: 17T286307

PROJECT: 508-26

ATTENTION TO: Scott Watson

SAMPLING SITE:

SAMPLED BY:Scott Watson

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE
Aroclor 1242	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Aroclor 1248	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Aroclor 1254	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Aroclor 1260	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Polychlorinated Biphenyls	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
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webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only
Work Order #: 17T286307
Cooler Quantity:
Arrival Temperatures: 2.3 | 3 | 3.1
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Report Information:
Company: DS Consultants Ltd.
Contact: Scott Watson
Address: 6221 Hwy 7, Unit 16
Vaughan Ontario, L4H 0K8
Phone: Fax:
Reports to be sent to:
1. Email: Scott.Watson@dsconsultants.ca
2. Email: Aiken.Sangar@dsconsultants.ca

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 & 8 (Indicate One)
☐ Ind/Comm
☐ Res/Park
☐ Agriculture
Soil Texture (Check One)
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ____ (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a Record of Site Condition? ☑ Yes ☐ No

Report Guideline on Certificate of Analysis ☑ Yes ☐ No

Turnaround Time (TAT) Required:
Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 506 - 2C
Site Location:
Sampled By: Scott Watson
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information: Bill To Same: Yes ☒ No ☐
Company:
Contact:
Address:
Email:

Sample Matrix Legend
B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics	O. Reg 153: All Metals ☐ 153 Metals (exc. Hydrides)	O. Reg 153: Hydride Metals ☐ 153 Metals (Incl. Hydrides)	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH17-1R-SS-1	Nov 15	PM	1	Soil	Table 1 & 8		✓													
BH-17-3R-SS-3			2		Standards		✓												✓	
BH-17-4R-SS-1			1				✓													
BH-17-5R-SS-2			2				✓												✓	
BH-17-AR-SS-2			2				✓												✓	
BH-17-6R-SS-1			1				✓													
~~BH-17-7R-SS-1~~			—		Should be blank		WW													
BH-17-1N-SS-2			2				✓												✓	
BH-17-2N-SS-1			1				✓													
BH-17-3N-SS-1			1				✓													
BH-17-8R-SS-1	✓	✓	2	✓			✓													

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Shashi	Nov 20/17	5:PM	Suma Z	17/11/20	4:00
Scott Watson	Nov 20/17				

Page 1 of 2
N°: T 062100

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: DS Consultants Ltd.
Contact: Scott Watson
Address: 6221 Hwy 7 Unit 16
Vaughan, Ontario L4H 0K8
Phone: 905-264-9393 Fax:
Reports to be sent to:
1. Email: Scott.Watson@dsconsultants.ca
2. Email: AlKa.Sangar@dsconsultants.ca

Project Information:

Project: 508-20
Site Location: Halton
Sampled By: SW
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐

Company:
Contact: As Above
Address:
Email:

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☐ Regulation 153/04
Table 1 & 8 *Indicate One*
☐ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
Indicate One

Is this submission for a **Record of Site Condition?** ☑ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides))	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ CrVI ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH 17 - 1T - SS2	Nov 15	PM	2	Soil	Table 1 &								✓						
BH 17 - 1T - SS3	↓	↓	1	↓	Table 8		✓									✓			
BH 17 - 2T - SS2			1		Standards								✓						
BH 17 - 2T - SS3			2				✓												
BH 17 - 3T - SS2			3				✓						✓						
BH 17 - 4T - SS2			2				✓												
BH 17 - 5T - SS2	↓	↓	2	↓									✓						
					26 Containers in total														

Laboratory Use Only

Work Order #:
Cooler Quantity:
Arrival Temperatures:
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Shalpi	Nov 30, 17	4:15 pm	Sima	07/12/20	4:00
Scott Watson	Nov 30 2017	4 PM			

Page 2 of 2

№: T 062099

AGAT Laboratories

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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: **DS CONSULTING**
6221 HIGHWAY 7 WEST, UNIT #16
VAUGHAN, ON L4H 0K8
905-264-9393

ATTENTION TO: **Shafi Amdreta**

PROJECT: **568-20**

AGAT WORK ORDER: **18T304909**

SOIL ANALYSIS REVIEWED BY: **Nivine Basily, Inorganics Report Writer**

TRACE ORGANICS REVIEWED BY: **Neli Popnikolova, Senior Chemist**

DATE REPORTED: **Jan 31, 2018**

PAGES (INCLUDING COVER): **8**

VERSION*: **1**

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 18T304909

PROJECT: 568-20

CLIENT NAME: DS CONSULTING

ATTENTION TO: Shafi Amdreta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2018-01-24

DATE REPORTED: 2018-01-31

		SAMPLE DESCRIPTION:		TP8r GS2	TP11r GS1	TP12r GS1
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2018-01-22	2018-01-22	2018-01-22
Parameter	Unit	G / S	RDL	9028451	9028452	9028454
Antimony	µg/g	1.3	0.8	1.2	<0.8	<0.8
Arsenic	µg/g	18	1	7	4	5
Barium	µg/g	220	2	99	88	66
Beryllium	µg/g	2.5	0.5	0.7	0.8	0.6
Boron	µg/g	36	5	7	<5	6
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.47	0.81	0.11
Cadmium	µg/g	1.2	0.5	0.8	<0.5	<0.5
Chromium	µg/g	70	2	17	19	18
Cobalt	µg/g	21	0.5	11.3	8.3	11.7
Copper	µg/g	92	1	35	18	27
Lead	µg/g	120	1	61	19	13
Molybdenum	µg/g	2	0.5	0.8	<0.5	<0.5
Nickel	µg/g	82	1	19	20	25
Selenium	µg/g	1.5	0.4	0.6	0.6	0.4
Silver	µg/g	0.5	0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4
Uranium	µg/g	2.5	0.5	0.7	1.0	<0.5
Vanadium	µg/g	86	1	24	23	20
Zinc	µg/g	290	5	274	87	62
Chromium VI	µg/g	0.66	0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	0.13	<0.10	<0.10
Electrical Conductivity	mS/cm	0.57	0.005	0.258	0.231	0.168
Sodium Adsorption Ratio	NA	2.4	NA	0.116	1.82	0.115
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.24	6.41	7.26

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9028451-9028454 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Nivine Basily

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T304909

PROJECT: 568-20

CLIENT NAME: DS CONSULTING

ATTENTION TO: Shafi Amdreta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2018-01-24

DATE REPORTED: 2018-01-31

		SAMPLE DESCRIPTION:		TP10r GS1	TP10r GS0 Dup	TP9r GS2	TP3r GS1	TP4r GS1	TP6r GS1	TP3r GS0Dup
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-01-18	2018-01-18	2018-01-22	2018-01-18	2018-01-18	2018-01-18	2018-01-18
Parameter	**Unit**	**G / S**	**RDL**	**9028445**	**9028446**	**9028447**	**9028448**	**9028449**	**9028450**	**9028453**
Benzene	µg/g	0.02	0.02	<0.02	<0.02	<0.02	**0.63**	<0.02	<0.02	**0.81**
Toluene	µg/g	0.2	0.08	<0.08	<0.08	<0.08	**3.8**	**0.57**	<0.08	**4.6**
Ethylbenzene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	**1.4**	**0.16**	<0.05	**1.5**
Xylene Mixture	µg/g	0.05	0.05	<0.05	<0.05	<0.05	**7.7**	**1.6**	<0.05	**9.5**
F1 (C6 to C10)	µg/g	25	5	<5	<5	<5	**61**	**32**	<5	**79**
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	**47**	**30**	<5	**63**
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	**27**	<10	<10	**30**
F3 (C16 to C34)	µg/g	240	50	<50	80	<50	**270**	<50	210	**300**
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	52	<50	<50	51
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	14.2	11.2	14.9	5.6	14.3	31.5	13.5
Surrogate	**Unit**	**Acceptable Limits**								
Terphenyl	%	60-140		73	88	75	96	94	76	88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9028445-9028453 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Certified By: N Popnikolof

AGAT Laboratories

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http://www.agatlabs.com

Guideline Violation

AGAT WORK ORDER: 18T304909

PROJECT: 568-20

CLIENT NAME: DS CONSULTING

ATTENTION TO: Shafi Amdreta

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9028448	TP3r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Benzene	µg/g	0.02	0.63
9028448	TP3r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Ethylbenzene	µg/g	0.05	1.4
9028448	TP3r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10)	µg/g	25	61
9028448	TP3r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10) minus BTEX	µg/g	25	47
9028448	TP3r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F2 (C10 to C16)	µg/g	10	27
9028448	TP3r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F3 (C16 to C34)	µg/g	240	270
9028448	TP3r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Toluene	µg/g	0.2	3.8
9028448	TP3r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Xylene Mixture	µg/g	0.05	7.7
9028449	TP4r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Ethylbenzene	µg/g	0.05	0.16
9028449	TP4r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10)	µg/g	25	32
9028449	TP4r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10) minus BTEX	µg/g	25	30
9028449	TP4r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Toluene	µg/g	0.2	0.57
9028449	TP4r GS1	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Xylene Mixture	µg/g	0.05	1.6
9028453	TP3r GS0Dup	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Benzene	µg/g	0.02	0.81
9028453	TP3r GS0Dup	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Ethylbenzene	µg/g	0.05	1.5
9028453	TP3r GS0Dup	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10)	µg/g	25	79
9028453	TP3r GS0Dup	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10) minus BTEX	µg/g	25	63
9028453	TP3r GS0Dup	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F2 (C10 to C16)	µg/g	10	30
9028453	TP3r GS0Dup	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F3 (C16 to C34)	µg/g	240	300
9028453	TP3r GS0Dup	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Toluene	µg/g	0.2	4.6
9028453	TP3r GS0Dup	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Xylene Mixture	µg/g	0.05	9.5

AGAT Laboratories

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Quality Assurance

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T304909

PROJECT: 568-20

ATTENTION TO: Shafi Amdreta

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Jan 31, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	9028452	9028452	<0.8	<0.8	NA	< 0.8	95%	70%	130%	98%	80%	120%	75%	70%	130%
Arsenic	9028452	9028452	4	4	NA	< 1	98%	70%	130%	100%	80%	120%	97%	70%	130%
Barium	9028452	9028452	88	87	1.1%	< 2	99%	70%	130%	90%	80%	120%	88%	70%	130%
Beryllium	9028452	9028452	0.8	0.7	NA	< 0.5	74%	70%	130%	114%	80%	120%	91%	70%	130%
Boron	9028452	9028452	<5	<5	NA	< 5	92%	70%	130%	109%	80%	120%	85%	70%	130%
Boron (Hot Water Soluble)	9028452	9028452	0.81	0.84	3.6%	< 0.10	99%	60%	140%	91%	70%	130%	91%	60%	140%
Cadmium	9028452	9028452	<0.5	<0.5	NA	< 0.5	93%	70%	130%	96%	80%	120%	97%	70%	130%
Chromium	9028452	9028452	19	19	0.0%	< 2	78%	70%	130%	103%	80%	120%	90%	70%	130%
Cobalt	9028452	9028452	8.3	8.3	0.0%	< 0.5	85%	70%	130%	90%	80%	120%	86%	70%	130%
Copper	9028452	9028452	18	18	0.0%	< 1	87%	70%	130%	99%	80%	120%	88%	70%	130%
Lead	9028452	9028452	19	19	0.0%	< 1	98%	70%	130%	92%	80%	120%	93%	70%	130%
Molybdenum	9028452	9028452	<0.5	<0.5	NA	< 0.5	86%	70%	130%	92%	80%	120%	92%	70%	130%
Nickel	9028452	9028452	20	20	0.0%	< 1	87%	70%	130%	92%	80%	120%	90%	70%	130%
Selenium	9028452	9028452	0.6	0.6	NA	< 0.4	99%	70%	130%	100%	80%	120%	101%	70%	130%
Silver	9028452	9028452	<0.2	<0.2	NA	< 0.2	90%	70%	130%	97%	80%	120%	85%	70%	130%
Thallium	9028452	9028452	<0.4	<0.4	NA	< 0.4	80%	70%	130%	101%	80%	120%	94%	70%	130%
Uranium	9028452	9028452	1.0	1.0	NA	< 0.5	84%	70%	130%	105%	80%	120%	101%	70%	130%
Vanadium	9028452	9028452	23	23	0.0%	< 1	73%	70%	130%	91%	80%	120%	78%	70%	130%
Zinc	9028452	9028452	87	86	1.2%	< 5	96%	70%	130%	100%	80%	120%	90%	70%	130%
Chromium VI	9027444		<0.2	<0.2	NA	< 0.2	77%	70%	130%	93%	80%	120%	101%	70%	130%
Cyanide	9027374		<0.040	<0.040	NA	< 0.040	90%	70%	130%	97%	80%	120%	94%	70%	130%
Mercury	9028452	9028452	<0.10	<0.10	NA	< 0.10	95%	70%	130%	92%	80%	120%	92%	70%	130%
Electrical Conductivity	9028452	9028452	0.231	0.238	3.0%	< 0.005	99%	90%	110%						
Sodium Adsorption Ratio	9028452	9028452	1.82	1.84	1.1%	NA									
pH, 2:1 CaCl2 Extraction	9028644		9.21	9.28	0.8%	NA	101%	80%	120%						

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T304909

PROJECT: 568-20

ATTENTION TO: Shafi Amdreta

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jan 31, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	9025779		< 0.02	< 0.02	NA	< 0.02	90%	60%	130%	88%	60%	130%	80%	60%	130%
Toluene	9025779		< 0.08	< 0.08	NA	< 0.08	92%	60%	130%	85%	60%	130%	85%	60%	130%
Ethylbenzene	9025779		< 0.05	< 0.05	NA	< 0.05	95%	60%	130%	90%	60%	130%	80%	60%	130%
Xylene Mixture	9025779		< 0.05	< 0.05	NA	< 0.05	98%	60%	130%	92%	60%	130%	82%	60%	130%
F1 (C6 to C10)	9025779		< 5	< 5	NA	< 5	89%	60%	130%	87%	85%	115%	76%	70%	130%
F2 (C10 to C16)	9028453	9028453	30	30	NA	< 10	102%	60%	130%	96%	80%	120%	91%	70%	130%
F3 (C16 to C34)	9028453	9028453	300	300	0.0%	< 50	102%	60%	130%	98%	80%	120%	106%	70%	130%
F4 (C34 to C50)	9028453	9028453	51	54	NA	< 50	86%	60%	130%	94%	80%	120%	94%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Method Summary

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T304909

PROJECT: 568-20

ATTENTION TO: Shafi Amdreta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010B	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER
Trace Organics Analysis			
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only
Work Order #: 18T304909
Cooler Quantity: 1 2 3
Arrival Temperatures: 4.5 | 4.2 | 4.6 / 3.6 | 2.5 | 3.1
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Report Information:
Company: DS Consultants
Contact: Shahi Andsetan
Address: 6221 HWY 7, Unit 16, Vaughan, ON L4H 0K8
Phone: 905-264-9393 Fax:
Reports to be sent to:
1. Email: shahi.andsetan@dsconsultants.ca
2. Email:

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)
☒ Regulation 153/04 — Table 1 (Indicate One) ☐ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (Check One) ☑ Coarse ☒ Fine
☐ Sewer Use — ☐ Sanitary ☐ Storm — Region (Indicate One) — ☐ MISA
☐ Regulation 558 ☐ CCME ☐ Prov. Water Quality Objectives (PWQO) ☐ Other (Indicate One)

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No
Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Turnaround Time (TAT) Required:
Regular TAT ☒ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 508-20
Site Location: Halton
Sampled By: SW
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information: Bill To Same: Yes ☐ No ☐
Company:
Contact: Same as above
Address:
Email:

Sample Matrix Legend
B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y/N	Field Filtered - Metals, Hg, CrVI	O. Reg 153: Metals and Inorganics	All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides)	ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☒ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
TP10r GS1	Jan 18, 2018	PM	2	Soil										X						
TP10r GS0 Dup	↓		2		TP10r-GS0 Dup									X						
TP9r GS2	Jan 22, 2018		2										X	X						
TP3r GS1	Jan 18, 2018		2										X	X						
TP4r GS1	↓		2											X						
TP6r GS1	↓		2											X						
TP8r GS2	Jan 22, 2018		1			X														
TP11N GS1	↓		1			X														
TP3r GS0 Dup	Jan 18, 2018		2		TP3r GS0 Dup									X						
TP12r GS1	Jan 22, 2018	↓	1	↓		X														

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
	Jan. 23			2018/1/24	10:47
	2018/1/24	3:17			

Page 1 of 1
N°: T 062101

AGAT Laboratories

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CLIENT NAME: **DS CONSULTING**
6221 HIGHWAY 7 WEST, UNIT #16
VAUGHAN, ON L4H 0K8
905-264-9393

ATTENTION TO: **shafi amdreta**

PROJECT: **508-30**

AGAT WORK ORDER: **18T304912**

TRACE ORGANICS REVIEWED BY: **Gyulhan Yalamova, Report Reviewer**

WATER ANALYSIS REVIEWED BY: **Parvathi Malemath, Data Reviewer**

DATE REPORTED: **Feb 01, 2018**

PAGES (INCLUDING COVER): **13**

VERSION*: **1**

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Water)

DATE RECEIVED: 2018-01-24

DATE REPORTED: 2018-02-01

		SAMPLE DESCRIPTION:		MW 17 - 1T	MW 1D - 17	MW 17 - 7R	MW 17 - 1R	DUP-1
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2018-01-23	2018-01-23	2018-01-23	2018-01-23	2018-01-23
Parameter	**Unit**	**G / S**	**RDL**	**9028692**	**9028694**	**9028695**	**9028696**	**9028698**
Gamma-Hexachlorocyclohexane	µg/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	µg/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aldrin	µg/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan	µg/L	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane	µg/L	0.06	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
DDE	µg/L	10	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
DDD	µg/L	1.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DDT	µg/L	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Dieldrin	µg/L	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Endrin	µg/L	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	µg/L	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Hexachlorobenzene	ug/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	ug/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	ug/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Surrogate	**Unit**	**Acceptable Limits**						
TCMX	%	50-140		107	94	100	101	98
Decachlorobiphenyl	%	60-140		113	106	108	99	104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9028692-9028698 Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.
Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2018-01-24

DATE REPORTED: 2018-02-01

		SAMPLE DESCRIPTION:		MW 17 - 1T	MW 17 - 3T	MW 1D - 17	MW 17 - 7R	DUP-1
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2018-01-23	2018-01-23	2018-01-23	2018-01-23	2018-01-23
Parameter	**Unit**	**G / S**	**RDL**	**9028692**	**9028693**	**9028694**	**9028695**	**9028698**
F1 (C6 to C10)	µg/L	420	25	<25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA	NA	NA	NA
Surrogate	**Unit**	**Acceptable Limits**						
Terphenyl	%	60-140		79	90	80	104	78

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9028692-9028698 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-01-24

DATE REPORTED: 2018-02-01

		SAMPLE DESCRIPTION:		MW 17 - 1T	MW 17 - 3T	MW 1D - 17	MW 17 - 7R	Field Blank	DUP-1
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		2018-01-23	2018-01-23	2018-01-23	2018-01-23	2018-01-23	2018-01-23
Parameter	Unit	G / S	RDL	9028692	9028693	9028694	9028695	9028697	9028698
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibromochloromethane	µg/L	2	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

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Certificate of Analysis

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-01-24

DATE REPORTED: 2018-02-01

		SAMPLE DESCRIPTION:		MW 17 - 1T	MW 17 - 3T	MW 1D - 17	MW 17 - 7R	Field Blank	DUP-1
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		2018-01-23	2018-01-23	2018-01-23	2018-01-23	2018-01-23	2018-01-23
Parameter	**Unit**	**G / S**	**RDL**	**9028692**	**9028693**	**9028694**	**9028695**	**9028697**	**9028698**
Bromoform	µg/L	5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylene Mixture	µg/L	72	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L	5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**							
Toluene-d8	% Recovery	50-140		92	93	92	91	83	89
4-Bromofluorobenzene	% Recovery	50-140		88	85	86	87	85	95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

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Certificate of Analysis

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2018-01-24

DATE REPORTED: 2018-02-01

		SAMPLE DESCRIPTION:		MW 17 - 1T		MW 17 - 3T		MW 1D - 17	MW 17 - 7R		DUP-1
		SAMPLE TYPE:		Water		Water		Water	Water		Water
		DATE SAMPLED:		2018-01-23		2018-01-23		2018-01-23	2018-01-23		2018-01-23
Parameter	Unit	G / S	RDL	9028692	RDL	9028693	RDL	9028694	9028695	RDL	9028698
Antimony	µg/L	1.5	1.0	<1.0	1.0	<1.0	1.0	<1.0	<1.0	1.0	<1.0
Arsenic	µg/L	13	1.0	<1.0	1.0	<1.0	1.0	<1.0	<1.0	1.0	<1.0
Barium	µg/L	610	2.0	60.0	2.0	39.4	2.0	88.9	78.0	2.0	59.0
Beryllium	µg/L	0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	<0.5	0.5	<0.5
Boron	µg/L	1700	10.0	51.6	10.0	123	10.0	194	42.4	10.0	55.2
Cadmium	µg/L	0.5	0.2	<0.2	0.2	<0.2	0.2	<0.2	<0.2	0.2	<0.2
Chromium	µg/L	11	2.0	<2.0	2.0	<2.0	2.0	<2.0	<2.0	2.0	<2.0
Cobalt	µg/L	3.8	0.5	<0.5	0.5	<0.5	0.5	<0.5	<0.5	0.5	<0.5
Copper	µg/L	5	1.0	1.9	1.0	1.6	1.0	<1.0	1.2	1.0	1.8
Lead	µg/L	1.9	0.5	<0.5	0.5	<0.5	0.5	<0.5	<0.5	0.5	<0.5
Molybdenum	µg/L	23	0.5	1.2	0.5	1.3	0.5	9.3	2.4	0.5	1.2
Nickel	µg/L	14	1.0	1.1	1.0	<1.0	1.0	<1.0	<1.0	1.0	1.0
Selenium	µg/L	5	1.0	<1.0	1.0	<1.0	1.0	3.1	<1.0	1.0	1.2
Silver	µg/L	0.3	0.2	<0.2	0.2	<0.2	0.2	<0.2	<0.2	0.2	<0.2
Thallium	µg/L	0.5	0.3	<0.3	0.3	<0.3	0.3	<0.3	<0.3	0.3	<0.3
Uranium	µg/L	8.9	0.5	4.4	0.5	2.7	0.5	**21.4**	1.9	0.5	4.6
Vanadium	µg/L	3.9	0.4	0.9	0.4	<0.4	0.4	0.8	0.6	0.4	1.0
Zinc	µg/L	160	5.0	<5.0	5.0	<5.0	5.0	<5.0	<5.0	5.0	<5.0
Mercury	µg/L	0.1	0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.02	0.02	<0.02
Chromium VI	µg/L	25	5	<5	5	<5	5	<5	<5	5	<5
Cyanide	µg/L	5	2	<2	2	<2	2	<2	<2	2	<2
Sodium	µg/L	490000	1000	19200	500	19700	500	11500	13300	1000	19300
Chloride	µg/L	790000	500	14500	500	12800	200	14500	12000	500	13600
Electrical Conductivity	uS/cm		2	1170	2	868	2	704	617	2	1180
pH	pH Units		NA	8.00	NA	7.95	NA	8.05	8.06	NA	7.97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9028692-9028698 Elevated RDLs indicate the degree of sample dilutions prior to analyses to keep analytes within the calibration range, reduce matrix interference and to avoid contaminating the instrument.

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Guideline Violation

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi amdreta

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9028694	MW 1D - 17	ON T1 GW	O. Reg. 153(511) - Metals & Inorganics (Water)	Uranium	µg/L	8.9	21.4

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Quality Assurance

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Feb 01, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	9026678		< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	80%	50%	140%	103%	50%	140%
Vinyl Chloride	9026678		< 0.17	< 0.17	NA	< 0.17	88%	50%	140%	74%	50%	140%	83%	50%	140%
Bromomethane	9026678		< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	128%	50%	140%	93%	50%	140%
Trichlorofluoromethane	9026678		< 0.40	< 0.40	NA	< 0.40	87%	50%	140%	116%	50%	140%	100%	50%	140%
Acetone	9026678		< 1.0	< 1.0	NA	< 1.0	103%	50%	140%	111%	50%	140%	113%	50%	140%
1,1-Dichloroethylene	9026678		< 0.30	< 0.30	NA	< 0.30	84%	50%	140%	92%	60%	130%	101%	50%	140%
Methylene Chloride	9026678		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	88%	60%	130%	104%	50%	140%
trans- 1,2-Dichloroethylene	9026678		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	87%	60%	130%	112%	50%	140%
Methyl tert-butyl ether	9026678		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	112%	60%	130%	103%	50%	140%
1,1-Dichloroethane	9026678		< 0.30	< 0.30	NA	< 0.30	100%	50%	140%	102%	60%	130%	98%	50%	140%
Methyl Ethyl Ketone	9026678		< 1.0	< 1.0	NA	< 1.0	98%	50%	140%	97%	50%	140%	80%	50%	140%
cis- 1,2-Dichloroethylene	9026678		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	91%	60%	130%	71%	50%	140%
Chloroform	9026678		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	107%	60%	130%	81%	50%	140%
1,2-Dichloroethane	9026678		< 0.20	< 0.20	NA	< 0.20	98%	50%	140%	100%	60%	130%	82%	50%	140%
1,1,1-Trichloroethane	9026678		< 0.30	< 0.30	NA	< 0.30	87%	50%	140%	107%	60%	130%	84%	50%	140%
Carbon Tetrachloride	9026678		< 0.20	< 0.20	NA	< 0.20	74%	50%	140%	96%	60%	130%	79%	50%	140%
Benzene	9026678		< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	86%	60%	130%	80%	50%	140%
1,2-Dichloropropane	9026678		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	96%	60%	130%	75%	50%	140%
Trichloroethylene	9026678		< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	88%	60%	130%	79%	50%	140%
Bromodichloromethane	9026678		< 0.20	< 0.20	NA	< 0.20	115%	50%	140%	104%	60%	130%	87%	50%	140%
Methyl Isobutyl Ketone	9026678		< 1.0	< 1.0	NA	< 1.0	105%	50%	140%	103%	50%	140%	85%	50%	140%
1,1,2-Trichloroethane	9026678		< 0.20	< 0.20	NA	< 0.20	94%	50%	140%	99%	60%	130%	100%	50%	140%
Toluene	9026678		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	105%	60%	130%	91%	50%	140%
Dibromochloromethane	9026678		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	102%	60%	130%	94%	50%	140%
Ethylene Dibromide	9026678		< 0.10	< 0.10	NA	< 0.10	81%	50%	140%	109%	60%	130%	88%	50%	140%
Tetrachloroethylene	9026678		< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	111%	60%	130%	84%	50%	140%
1,1,1,2-Tetrachloroethane	9026678		< 0.10	< 0.10	NA	< 0.10	113%	50%	140%	117%	60%	130%	98%	50%	140%
Chlorobenzene	9026678		< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	113%	60%	130%	92%	50%	140%
Ethylbenzene	9026678		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	93%	60%	130%	80%	50%	140%
m & p-Xylene	9026678		< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	107%	60%	130%	82%	50%	140%
Bromoform	9026678		< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	92%	60%	130%	97%	50%	140%
Styrene	9026678		< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	84%	60%	130%	79%	50%	140%
1,1,2,2-Tetrachloroethane	9026678		< 0.10	< 0.10	NA	< 0.10	83%	50%	140%	82%	60%	130%	116%	50%	140%
o-Xylene	9026678		< 0.10	< 0.10	NA	< 0.10	87%	50%	140%	109%	60%	130%	84%	50%	140%
1,3-Dichlorobenzene	9026678		< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	92%	60%	130%	75%	50%	140%
1,4-Dichlorobenzene	9026678		< 0.10	< 0.10	NA	< 0.10	94%	50%	140%	104%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	9026678		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	92%	60%	130%	77%	50%	140%
1,3-Dichloropropene	9026678		< 0.30	< 0.30	NA	< 0.30	101%	50%	140%	92%	60%	130%	98%	50%	140%
n-Hexane	9026678		< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	92%	60%	130%	115%	50%	140%

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Quality Assurance

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Feb 01, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 to C10)	9025020		< 25	< 25	NA	< 25	85%	60%	140%	90%	60%	140%	77%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	110%	60%	140%	60%	60%	140%	62%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	110%	60%	140%	65%	60%	140%	64%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	97%	60%	140%	73%	60%	140%	79%	60%	140%
O. Reg. 153(511) - OC Pesticides (Water)															
Gamma-Hexachlorocyclohexane		TW	< 0.01	< 0.01	NA	< 0.01	117%	50%	140%	95%	50%	140%	94%	50%	140%
Heptachlor		TW	< 0.01	< 0.01	NA	< 0.01	106%	50%	140%	87%	50%	140%	87%	50%	140%
Aldrin		TW	< 0.01	< 0.01	NA	< 0.01	95%	50%	140%	87%	50%	140%	88%	50%	140%
Heptachlor Epoxide		TW	< 0.01	< 0.01	NA	< 0.01	97%	50%	140%	89%	50%	140%	89%	50%	140%
Endosulfan		TW	< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	79%	50%	140%	78%	50%	140%
Chlordane		TW	< 0.04	< 0.04	NA	< 0.04	91%	50%	140%	87%	50%	140%	86%	50%	140%
DDE		TW	< 0.01	< 0.01	NA	< 0.01	101%	50%	140%	94%	50%	140%	95%	50%	140%
DDD		TW	< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	98%	50%	140%	99%	50%	140%
DDT		TW	< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	89%	50%	140%	86%	50%	140%
Dieldrin		TW	< 0.02	< 0.02	NA	< 0.02	96%	50%	140%	93%	50%	140%	92%	50%	140%
Endrin		TW	< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	108%	50%	140%	108%	50%	140%
Methoxychlor		TW	< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	102%	50%	140%	112%	50%	140%
Hexachlorobenzene		TW	< 0.01	< 0.01	NA	< 0.01	90%	50%	140%	82%	50%	140%	82%	50%	140%
Hexachlorobutadiene		TW	< 0.01	< 0.01	NA	< 0.01	104%	50%	140%	66%	50%	140%	67%	50%	140%
Hexachloroethane		TW	< 0.01	< 0.01	NA	< 0.01	112%	50%	140%	65%	50%	140%	66%	50%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

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Quality Assurance

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Feb 01, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water)															
Antimony	9028692	9028692	<1.0	<1.0	NA	< 1.0	101%	70%	130%	100%	80%	120%	103%	70%	130%
Arsenic	9028692	9028692	<1.0	<1.0	NA	< 1.0	108%	70%	130%	108%	80%	120%	110%	70%	130%
Barium	9028692	9028692	60.0	59.9	0.2%	< 2.0	99%	70%	130%	99%	80%	120%	96%	70%	130%
Beryllium	9028692	9028692	<0.5	<0.5	NA	< 0.5	93%	70%	130%	96%	80%	120%	95%	70%	130%
Boron	9028692	9028692	51.6	54.2	4.9%	< 10.0	94%	70%	130%	99%	80%	120%	91%	70%	130%
Cadmium	9028692	9028692	<0.2	<0.2	NA	< 0.2	101%	70%	130%	105%	80%	120%	101%	70%	130%
Chromium	9028692	9028692	<2.0	<2.0	NA	< 2.0	104%	70%	130%	104%	80%	120%	100%	70%	130%
Cobalt	9028692	9028692	<0.5	<0.5	NA	< 0.5	107%	70%	130%	102%	80%	120%	103%	70%	130%
Copper	9028692	9028692	1.9	1.8	NA	< 1.0	105%	70%	130%	103%	80%	120%	97%	70%	130%
Lead	9028692	9028692	<0.5	<0.5	NA	< 0.5	99%	70%	130%	101%	80%	120%	95%	70%	130%
Molybdenum	9028692	9028692	1.2	1.3	NA	< 0.5	100%	70%	130%	98%	80%	120%	96%	70%	130%
Nickel	9028692	9028692	1.1	<1.0	NA	< 1.0	104%	70%	130%	102%	80%	120%	99%	70%	130%
Selenium	9028692	9028692	<1.0	<1.0	NA	< 1.0	108%	70%	130%	110%	80%	120%	111%	70%	130%
Silver	9028692	9028692	<0.2	<0.2	NA	< 0.2	105%	70%	130%	111%	80%	120%	111%	70%	130%
Thallium	9028692	9028692	<0.3	<0.3	NA	< 0.3	105%	70%	130%	104%	80%	120%	102%	70%	130%
Uranium	9028692	9028692	4.4	4.6	4.4%	< 0.5	102%	70%	130%	102%	80%	120%	99%	70%	130%
Vanadium	9028692	9028692	0.9	1.0	NA	< 0.4	103%	70%	130%	99%	80%	120%	103%	70%	130%
Zinc	9028692	9028692	<5.0	<5.0	NA	< 5.0	104%	70%	130%	107%	80%	120%	105%	70%	130%
Mercury	9028692	9028692	<0.02	<0.02	NA	< 0.02	101%	70%	130%	99%	80%	120%	99%	70%	130%
Chromium VI	9028692	9028692	<5	<5	NA	< 5	95%	70%	130%	93%	80%	120%	96%	70%	130%
Cyanide	9028692	9028692	<2	<2	NA	< 2	90%	70%	130%	97%	80%	120%	85%	70%	130%
Sodium	9028693	9028693	19700	19700	0.0%	< 500	95%	70%	130%	95%	80%	120%	97%	70%	130%
Chloride	9028693	9028693	12800	12500	2.4%	< 100	91%	70%	130%	102%	70%	130%	104%	70%	130%
Electrical Conductivity	9028692	9028692	1170	1180	0.9%	< 2	102%	90%	110%						
pH	9028692	9028692	8.00	7.91	1.1%	NA	99%	90%	110%						

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the Reporting Limit (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.

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Aldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endosulfan	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Chlordane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDE	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDD	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDT	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Dieldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Methoxychlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachloroethane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
F1 (C6 to C10)	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T304912

PROJECT: 508-30

ATTENTION TO: shafi amdreta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: DS Consultants Ltd.
Contact: Shahi Andleeb
Address: 6221 HWY 7, Unit 16
Vaughan, ON L4H-0K8
Phone: 905-264-9393 Fax:
Reports to be sent to:
1. Email: shahi.andleeb@dsconsultants.ca
2. Email:

Project Information:

Project: 508-30
Site Location: Assabove Hatton
Sampled By: PP
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☐ No ☐
Company:
Contact:
Address:
Email:

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☐ Regulation 153/04
Table 1 *Indicate One*
☐ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☑ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
Indicate One

Is this submission for a Record of Site Condition? ☑ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Laboratory Use Only

Work Order #: 18T304912
Cooler Quantity: 2 lev
Arrival Temperatures:
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides))	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	
MW17-7T	Jan 23/18		13	GW		Y	✓					✓	✓				✓			✓
MW17-3T	↓		12	↓		Y	✓					✓	✓							
MW1D-17			13			Y	✓					✓	✓				✓			
MW17-7R			13			Y	✓					✓	✓				✓			
MW17-1R			1														✓			
Field Blank			4									✓								
Dup-1	↓		13	↓		Y	✓					✓	✓				✓			

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
	Jan 23/18				
	2018/1/24	3:17		2018/1/24	12:47

Page 1 of 1
№: T 062102

Document ID: DIV 78-151 L014
Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT
Date Issued: February 22, 2017

AGAT Laboratories

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CLIENT NAME: **DS CONSULTING**
6221 HIGHWAY 7 WEST, UNIT #16
VAUGHAN, ON L4H 0K8
905-264-9393

ATTENTION TO: **shafi andseta**

PROJECT: **508-30**

AGAT WORK ORDER: **18T307984**

TRACE ORGANICS REVIEWED BY: **Gyulhan Yalamova, Report Reviewer**

WATER ANALYSIS REVIEWED BY: **Nivine Basily, Inorganics Report Writer**

DATE REPORTED: **Feb 08, 2018**

PAGES (INCLUDING COVER): **13**

VERSION*: **1**

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2018-02-02

DATE REPORTED: 2018-02-08

		SAMPLE DESCRIPTION:		MW17-2t
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-02-02
Parameter	**Unit**	**G / S**	**RDL**	**9043569**
F1 (C6 to C10)	µg/L	420	25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		72

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9043569 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Some sediment was observed in the sample. The whole bottle extraction was performed.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-02-02

DATE REPORTED: 2018-02-08

		SAMPLE DESCRIPTION:		MW17-2t
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-02-02
Parameter	Unit	G / S	RDL	9043569
Dichlorodifluoromethane	µg/L	590	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20
Benzene	µg/L	0.5	0.20	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	<0.20
Bromodichloromethane	µg/L	2	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20
Dibromochloromethane	µg/L	2	0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10
Tetrachloroethylene	µg/L	0.5	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10
Chlorobenzene	µg/L	0.5	0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-02-02

DATE REPORTED: 2018-02-08

		SAMPLE DESCRIPTION:		MW17-2t
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-02-02
Parameter	**Unit**	**G / S**	**RDL**	**9043569**
Bromoform	µg/L	5	0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30
Xylene Mixture	µg/L	72	0.20	<0.20
n-Hexane	µg/L	5	0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		99
4-Bromofluorobenzene	% Recovery	50-140		74

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - All Metals (Water)

DATE RECEIVED: 2018-02-02

DATE REPORTED: 2018-02-08

			SAMPLE DESCRIPTION:		MW1D-17
			SAMPLE TYPE:		Water
			DATE SAMPLED:		2018-02-02
Parameter	**Unit**	**G / S**	**RDL**		**9043568**
Uranium	µg/L	8.9	0.5		**22.6**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By: Nivine Basily

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Certificate of Analysis

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2018-02-02

DATE REPORTED: 2018-02-08

		SAMPLE DESCRIPTION:		MW17-2t
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-02-02
Parameter	Unit	G / S	RDL	9043569
Antimony	µg/L	1.5	1.0	<1.0
Arsenic	µg/L	13	1.0	2.0
Barium	µg/L	610	2.0	97.5
Beryllium	µg/L	0.5	0.5	<0.5
Boron	µg/L	1700	10.0	65.4
Cadmium	µg/L	0.5	0.2	<0.2
Chromium	µg/L	11	2.0	<2.0
Cobalt	µg/L	3.8	0.5	0.5
Copper	µg/L	5	1.0	5.0
Lead	µg/L	1.9	0.5	<0.5
Molybdenum	µg/L	23	0.5	4.1
Nickel	µg/L	14	1.0	2.0
Selenium	µg/L	5	1.0	1.5
Silver	µg/L	0.3	0.2	<0.2
Thallium	µg/L	0.5	0.3	<0.3
Uranium	µg/L	8.9	0.5	2.1
Vanadium	µg/L	3.9	0.4	1.5
Zinc	µg/L	160	5.0	7.1
Mercury	µg/L	0.1	0.02	<0.02
Chromium VI	µg/L	25	5	<5
Cyanide	µg/L	5	2	<2
Sodium	µg/L	490000	500	11300
Chloride	µg/L	790000	200	11200
Electrical Conductivity	uS/cm		2	861
pH	pH Units		NA	8.08

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9043569 Elevated RDLs indicate the degree of sample dilutions prior to analyses to keep analytes within the calibration range, reduce matrix interference and to avoid contaminating the instrument.

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Guideline Violation

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

CLIENT NAME: DS CONSULTING

ATTENTION TO: shafi andseta

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9043568	MW1D-17	ON T1 GW	O. Reg. 153(511) - All Metals (Water)	Uranium	µg/L	8.9	22.6

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Quality Assurance

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Feb 08, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	9043569		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	92%	50%	140%	86%	50%	140%
Vinyl Chloride	9043569		< 0.17	< 0.17	NA	< 0.17	121%	50%	140%	105%	50%	140%	112%	50%	140%
Bromomethane	9043569		< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	93%	50%	140%	127%	50%	140%
Trichlorofluoromethane	9043569		< 0.40	< 0.40	NA	< 0.40	118%	50%	140%	106%	50%	140%	113%	50%	140%
Acetone	9043569		< 1.0	< 1.0	NA	< 1.0	114%	50%	140%	109%	50%	140%	96%	50%	140%
1,1-Dichloroethylene	9043569		< 0.30	< 0.30	NA	< 0.30	72%	50%	140%	78%	60%	130%	94%	50%	140%
Methylene Chloride	9043569		< 0.30	< 0.30	NA	< 0.30	103%	50%	140%	88%	60%	130%	92%	50%	140%
trans- 1,2-Dichloroethylene	9043569		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	100%	60%	130%	115%	50%	140%
Methyl tert-butyl ether	9043569		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	80%	60%	130%	117%	50%	140%
1,1-Dichloroethane	9043569		< 0.30	< 0.30	NA	< 0.30	74%	50%	140%	97%	60%	130%	117%	50%	140%
Methyl Ethyl Ketone	9043569		< 1.0	< 1.0	NA	< 1.0	99%	50%	140%	99%	50%	140%	113%	50%	140%
cis- 1,2-Dichloroethylene	9043569		< 0.20	< 0.20	NA	< 0.20	72%	50%	140%	76%	60%	130%	119%	50%	140%
Chloroform	9043569		< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	100%	60%	130%	93%	50%	140%
1,2-Dichloroethane	9043569		< 0.20	< 0.20	NA	< 0.20	77%	50%	140%	90%	60%	130%	94%	50%	140%
1,1,1-Trichloroethane	9043569		< 0.30	< 0.30	NA	< 0.30	85%	50%	140%	83%	60%	130%	75%	50%	140%
Carbon Tetrachloride	9043569		< 0.20	< 0.20	NA	< 0.20	73%	50%	140%	79%	60%	130%	73%	50%	140%
Benzene	9043569		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	74%	60%	130%	72%	50%	140%
1,2-Dichloropropane	9043569		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	93%	60%	130%	91%	50%	140%
Trichloroethylene	9043569		< 0.20	< 0.20	NA	< 0.20	74%	50%	140%	71%	60%	130%	113%	50%	140%
Bromodichloromethane	9043569		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	99%	60%	130%	81%	50%	140%
Methyl Isobutyl Ketone	9043569		< 1.0	< 1.0	NA	< 1.0	117%	50%	140%	111%	50%	140%	113%	50%	140%
1,1,2-Trichloroethane	9043569		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	86%	60%	130%	79%	50%	140%
Toluene	9043569		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	103%	60%	130%	116%	50%	140%
Dibromochloromethane	9043569		< 0.10	< 0.10	NA	< 0.10	111%	50%	140%	114%	60%	130%	93%	50%	140%
Ethylene Dibromide	9043569		< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	105%	60%	130%	89%	50%	140%
Tetrachloroethylene	9043569		< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	95%	60%	130%	96%	50%	140%
1,1,1,2-Tetrachloroethane	9043569		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	109%	60%	130%	79%	50%	140%
Chlorobenzene	9043569		< 0.10	< 0.10	NA	< 0.10	99%	50%	140%	109%	60%	130%	113%	50%	140%
Ethylbenzene	9043569		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	86%	60%	130%	85%	50%	140%
m & p-Xylene	9043569		< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	102%	60%	130%	107%	50%	140%
Bromoform	9043569		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	111%	60%	130%	70%	50%	140%
Styrene	9043569		< 0.10	< 0.10	NA	< 0.10	73%	50%	140%	78%	60%	130%	74%	50%	140%
1,1,2,2-Tetrachloroethane	9043569		< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	73%	60%	130%	79%	50%	140%
o-Xylene	9043569		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	107%	60%	130%	107%	50%	140%
1,3-Dichlorobenzene	9043569		< 0.10	< 0.10	NA	< 0.10	117%	50%	140%	90%	60%	130%	94%	50%	140%
1,4-Dichlorobenzene	9043569		< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	109%	60%	130%	118%	50%	140%
1,2-Dichlorobenzene	9043569		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	93%	60%	130%	99%	50%	140%
1,3-Dichloropropene	9043569		< 0.30	< 0.30	NA	< 0.30	94%	50%	140%	87%	60%	130%	95%	50%	140%
n-Hexane	9043569		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	116%	60%	130%	103%	50%	140%

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Quality Assurance

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Feb 08, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 to C10)	9025020		< 25	< 25	NA	< 25	85%	60%	140%	90%	60%	140%	77%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	97%	60%	140%	63%	60%	140%	75%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	102%	60%	140%	91%	60%	140%	106%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	82%	60%	140%	85%	60%	140%	85%	60%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

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Quality Assurance

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Feb 08, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - All Metals (Water)															
Uranium	9042913		0.7	0.8	NA	< 0.5	98%	70%	130%	101%	80%	120%	109%	70%	130%
O. Reg. 153(511) - Metals & Inorganics (Water)															
Antimony	9042913		<1.0	<1.0	NA	< 1.0	100%	70%	130%	100%	80%	120%	105%	70%	130%
Arsenic	9042913		<1.0	<1.0	NA	< 1.0	102%	70%	130%	99%	80%	120%	103%	70%	130%
Barium	9042913		30.1	28.6	5.1%	< 2.0	99%	70%	130%	97%	80%	120%	100%	70%	130%
Beryllium	9042913		<0.5	<0.5	NA	< 0.5	97%	70%	130%	100%	80%	120%	103%	70%	130%
Boron	9042913		56.6	56.6	0.0%	< 10.0	99%	70%	130%	106%	80%	120%	106%	70%	130%
Cadmium	9042913		<0.2	<0.2	NA	< 0.2	101%	70%	130%	105%	80%	120%	114%	70%	130%
Chromium	9042913		2.4	2.8	NA	< 2.0	101%	70%	130%	105%	80%	120%	104%	70%	130%
Cobalt	9042913		<0.5	<0.5	NA	< 0.5	101%	70%	130%	105%	80%	120%	100%	70%	130%
Copper	9042913		234	234	0.0%	< 1.0	100%	70%	130%	105%	80%	120%	84%	70%	130%
Lead	9042913		2.4	2.4	NA	< 0.5	102%	70%	130%	105%	80%	120%	98%	70%	130%
Molybdenum	9042913		<0.5	<0.5	NA	< 0.5	100%	70%	130%	101%	80%	120%	111%	70%	130%
Nickel	9042913		3.6	3.5	NA	< 1.0	102%	70%	130%	103%	80%	120%	95%	70%	130%
Selenium	9042913		<1.0	<1.0	NA	< 1.0	100%	70%	130%	101%	80%	120%	77%	70%	130%
Silver	9042913		<0.2	<0.2	NA	< 0.2	97%	70%	130%	105%	80%	120%	94%	70%	130%
Thallium	9042913		<0.3	<0.3	NA	< 0.3	99%	70%	130%	99%	80%	120%	95%	70%	130%
Uranium	9042913		0.7	0.8	NA	< 0.5	98%	70%	130%	101%	80%	120%	109%	70%	130%
Vanadium	9042913		<0.4	<0.4	NA	< 0.4	98%	70%	130%	102%	80%	120%	104%	70%	130%
Zinc	9042913		78.8	77.7	1.4%	< 5.0	103%	70%	130%	104%	80%	120%	96%	70%	130%
Mercury	9043642		<0.02	<0.02	NA	< 0.02	104%	70%	130%	100%	80%	120%	96%	70%	130%
Chromium VI	9042427		<5	<5	NA	< 5	102%	70%	130%	99%	80%	120%	99%	70%	130%
Cyanide	9043569	9043569	<2	<2	NA	< 2	104%	70%	130%	91%	80%	120%	90%	70%	130%
Sodium	9043569	9043569	11300	11400	0.9%	< 500	102%	70%	130%	102%	80%	120%	95%	70%	130%
Chloride	9040505		132000	132000	0.0%	< 100	91%	70%	130%	107%	70%	130%	95%	70%	130%
Electrical Conductivity	9043122		920	921	0.1%	< 2	105%	90%	110%						
pH	9043122		8.29	8.20	1.1%	NA	99%	90%	110%						

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Nivine Basily

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Method Summary

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to C10)	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: DS CONSULTING

AGAT WORK ORDER: 18T307984

PROJECT: 508-30

ATTENTION TO: shafi andseta

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

AGAT Laboratories

SR4

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: DS Consultants Ltd.
Contact: Shafi Andseta
Address: 6221 Highway 7, Unit 16
Vaughan, ON
Phone: 905-264-9393 Fax:
Reports to be sent to:
1. Email: shafi.andseta@dsconsultants.ca
2. Email:

Project Information:

Project: 508-30
Site Location: Sixth Line, Oakville
Sampled By: Pradeep Patel
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐
Company:
Contact:
Address:
Email:

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 1 *Indicate One*
☐ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
Indicate One

Is this submission for a **Record of Site Condition?** ☐ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Laboratory Use Only

Work Order #: 18T807984

Cooler Quantity:
Arrival Temperatures: 2.1 | 2.3 | 2.6
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides))	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	O. Reg 153: Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	O. Reg 153: Volatiles: ☑ VOC ☐ BTEX ☐ THM	O. Reg 153: PHCs F1 - F4	O. Reg 153: ABNs	O. Reg 153: PAHs	O. Reg 153: PCBs: ☐ Total ☐ Aroclors	O. Reg 153: Organochlorine Pesticides	O. Reg 153: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	Metal-Uranium
MW 1D-17	Feb 2/18	a.m	1	GW		Y	✓													✓
MW 17-2t	Feb 2/18	a.m	12	GW		Y	✓					✓	✓							

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
PRADEEP PATEL	Feb 3/2018		Sima	18/2/2	1:25
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1

N°: T 066813

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

Appendix E – Remediation Report

Remediation Report

3270 Sixth Line

Oakville, Ontario

Prepared For:

Argo (West Morrison Creek) Limited

2173 Turnberry Road

Burlington, Ontario

L7M 4P8

DS Project No.: 17-508-100

Date: 2019-09-06

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

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FIGURES (Appended in Phase Two ESA Report)

TABLES

1.0 Introduction

This report provides a summary of the remedial activity which has been completed in order to reduce the concentrations of contaminants on, in or under the Property located at 3270 Sixth Line in the Town of Oakville, Ontario (herein referred to as the "Site" or "Property").

The Property is a 12.58-hectare (31.08 acres) parcel of land situated within a mixed residential and agricultural neighbourhood in the Town of Oakville, Ontario. The Phase One Property is located approximately 1km north of the intersection of Dundas Street West and Sixth Line and was vacant at the time of this investigation.

The property was undeveloped and included no structures at the time of this investigation. The Property was previously developed with a residential house, three (3) detached storage sheds, and a cellular communication tower, all of which were located in the southeast corner of the Property and have been demolished.

The Phase Two ESA completed between 2017-2018 identified concentrations of petroleum hydrocarbons (PHCs) and benzene, toluene, ethylbenzene and xylenes (BTEX) in soil in two test pits (TP3r and TP4r) in excess of the applicable "Table 1: Full Depth Background Site Condition Standards" 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 1 SCS*)* for residential/parkland /institutional/industrial/commercial/community property use.

The following sections detail the remedial actions, the presence/absence of free-flowing product, the results of the confirmatory sampling and laboratory analysis, the results of the quality assurance/quality control (QA/QC) samples and conclusions.

The objection of the remediation program was to remediate the soil impacts identified in the Phase Two Environmental Site Assessment completed by DS Consultants, dated September 6, 2019.

2.0 Remedial Actions

2.1 Soil Excavation and Soil Treatment Activities

The soil remediation activities at the Property consisted of the following:

- Excavation and off-side disposal of soil impacted with PHC and BTEX, within the vicinity of Tp3r.
- Excavation and off-side disposal of soil impacted with PHC and BTEX, within the vicinity of Tp4r.

The soil remediation activities are detailed in the following subsections.

2.1.1 Soil Excavation

The Phase Two ESA identified concentrations of PHCs and BTEX in excess of the applicable MECP Table 8 SCS as follows:

- TP3r (0-0.4 mbgs)
- TP4r (0-0.6 mbgs)

A total of two (2) remedial excavations were completed on the Property and were designated as TP1 (TP4r) and TP2 (TP3r). The approximate locations of these remedial excavations are presented on Figures 8A and 8B. Details regarding the locations, dimensions, and dates in which the excavations were conducted are provided below.

TP1

Remedial Excavation TP1 was completed on November 26, 2018 under the supervision of DS personnel. The objective of TP1 was to facilitate the removal and off-site disposal of the soils impacted with PHCs and BTEX which were identified in test pit TP4r at an approximate depth of 0-0.6 mbgs. The excavation was completed using an excavator supplied by the Client. The final dimensions of the remedial excavation were approximately 2.25 metres x 2.0 metres and extended to an approximate depth of 2.0 mbgs.

Approximately 9 cubic metres of soils were excavated and disposed of at a licensed MECP receiving facility. A visual representation of the approximate extent of the remedial excavation is provided in Figure 8A. Confirmatory sampling in accordance with O.Reg. 153/04 (as amended) was conducted upon completion of the remedial excavation. Additional details are provided in Section 3.1 below. The void of TP1 was backfilled using imported fill material sourced from a nearby property. Details regarding the chemical testing associated with the fill material is provided in Section 3.3 below.

TP2

Remedial Excavation TP2 was completed on November 26, 2018 under the supervision of DS personnel. The objective of TP2 was to facilitate the removal and off-site disposal of the soils impacted with PHCs and BTEX which were identified in test pit TP3r at an approximate depth of 0-0.4 mbgs. The excavation was completed using an excavator supplied by the Client. The final dimensions of the remedial excavation were approximately 2.25 metres x 2.0 metres and extended to an approximate depth of 2.0 mbgs.

Approximately 9 cubic metres of soils were excavated and disposed of at a licensed MECP receiving facility. A visual representation of the approximate extent of the remedial excavation is provided in Figure 8B. Confirmatory sampling in accordance with O.Reg. 153/04 (as amended) was conducted upon completion of the remedial excavation. Additional details are provided in Section 3.1 below. The void of TP2 was backfilled using imported fill material sourced from a nearby property. Details regarding the chemical testing associated with the fill material is provided in Section 3.3 below.

3.0 Confirmatory Sampling

3.1 Confirmatory Sampling Activities

Confirmatory samples were collected upon completion of the remedial excavation. Per the requirements of O.Reg 153/04 (as amended), soil samples were collected from the remedial excavation for the purposes of field screening at a minimum frequency of one sample per every 5 square metres (m^2) from the excavation sidewalls, and one sample per every 10m^2 from the excavation floor.

The screening samples collected 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. Organic vapour screening was conducted using a calibrated RKI Eagle 2 (Model 5101-P2).

A summary of the remedial excavation dimensions, depth, and number of soil samples collected for screening purposes as well as for laboratory analysis are shown on Table 1 and 2 and is presented in the table below:

Table 3-1: Summary of Remedial Excavation Sampling

Location	Excavation ID	Horizontal Extent/Dimensions (metres)	Excavation Depth (metres)	Field Screening Samples	Sidewall Samples Submitted For Chemical Analysis	Floor Samples Submitted For Chemical Analysis
TP4r	TP1	2.25 x 2.0	2.0	20	2	2
TP3r	TP2	2.25 x 2.00	2.0	20	2	2

3.2 Confirmatory Sampling Results

Confirmatory soil sampling was conducted in accordance with O.Reg. 153/04 (as amended) in order to assess the efficacy of the remedial excavation activities. The minimum confirmation sampling requirements per Table 3 of Schedule E, Part V of O.Reg. 153/04 (as amended) is summarized in Table 3-2 below:

Table 3-2: Minimum Confirmation Sampling Requirements for Excavation

Floor Area (m^2)	Minimum No. Floor Samples	Minimum No. Sidewall Samples
<25	2	2

The approximate floor area for TP1 and TP2 was 4.5 m^2. A summary of the confirmatory sampling results for each remedial excavation is provided below.

3.2.1 TP1

A total of twenty (20) field screening samples were collected from the remedial excavation (12 sidewall, 8 floor samples). The soil vapour headspace readings were collected using a PID and CGD in methane elimination mode. The PID readings ranged between 0 and 3 ppm. The CGD readings remained 0 ppm for all samples. The approximate floor area of EX-1 was 4.5 m^2, as such a total of two (2) sidewall and two (2) floor samples are required per O.Reg. 153/04 (as amended). A total of two (2) sidewall and two (2) floor samples were submitted for chemical analysis of PHCs and BTEX. One (1) field duplicate sample was also submitted for Quality Assurance/Quality Control (QA/QC) purposes. The locations of the confirmatory samples are presented on Figure 8A and projected on cross-section view in Figures 10A and 10B.

The results of the chemical analyses indicated all of the confirmatory samples met the applicable MECP Table 1 SCS.

3.2.2 TP2

A total of twenty (20) field screening samples were collected from the remedial excavation (12 sidewall, 8 floor samples). The soil vapour headspace readings were collected using a PID and CGD in methane elimination mode. The PID readings ranged between 0 and 2 ppm. The CGD readings ranged between 0 and 5 ppm. The approximate floor area of TP2 was 4.5 m^2, as such a total of two (2) sidewall and two (2) floor samples are required per O.Reg. 153/04 (as amended). A total of two (2) sidewall and two (2) floor samples were submitted for chemical analysis of PHCs and BTEX. One (1) field duplicate sample was also submitted for Quality Assurance/Quality Control (QA/QC) purposes. The locations of the confirmatory samples are presented on Figure 8B and projected on cross-section view in Figures 9A and 9B.

The results of the chemical analyses indicated all of the confirmatory samples met the applicable MECP Table 1 SCS.

3.3 Imported Backfill Material

Approximately 20 cubic metres of fill material was imported to backfill remedial excavations TP1 and TP2. The imported soil was sourced from the pile of fill material located on the east neighbouring residential development property (east side of Sixth Line).

DS visited the site on November 27, 2018. A total of 3 soil samples were collected from the above noted location for metals and ORPs, PHCs and OC Pesticides. The results of the chemical analyses indicated that all three (3) samples met the MECP Table 1 SCS. Based on this results the fill material was considered suitable for import to the Phase Two Property. The certificates of analysis for the verification sampling has been appended to this report.

3.4 Quality Control and Quality Assurance

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 3-3: Summary of QA/QC Results

Sample ID	QA/QC duplicate	Medium	Parameter Analyzed	QA/QC Result
NW2	SW2	Soil	PHCs, BTEX	All results were within the analytical protocol criteria for RPD
WW1	WW2	Soil	PHCs, BTEX	All results were within the analytical protocol criteria for RPD

4.0 Conclusions

The results of the post-remediation confirmatory sampling indicated that the remedial efforts were successful in reducing the concentrations of contaminants in soil to levels below the MECP Table 1 SCS. Approximately 18 cubic metres of soil was excavated and removed from the Property on November 28, 2018, and approximately 20 cubic metres of soil was imported to the Property for the purposes of backfilling the remedial excavation. The results of the verification sampling conducted on the import material indicated that the soil met the MECP Table 1 SCS, and therefore is suitable for placement.

Based on these findings no further remedial work is required to meet the requirements of O.Reg. 153/04 (as amended).

4.1 Signatures

This Phase Two ESA was conducted under the supervision of Mr. Patrick (Rick) Fioravanti, B.Sc., P.Geo., QP_{ESA} 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

Aphrodite Koseos, B.Sc., EPt.
Environmental Technician

Patrick Fioravanti, B.Sc., P.Geo.,
Environmental Project Manager

4.2 Limitations

This report was prepared for the sole use of Argo (West Morrison Creek) Limited and is intended to provide an assessment of the environmental condition on the property located at 3270 Sixth Line, Oakville, 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.

Remediation Tables

Table R1: Summary of Remedial Excavations

Phase Two ESA Test Pit ID:		TP3r	TP4r
Excavation ID:		**TP2**	**TP1**
Date Completed:		28-Nov-18	28-Nov-18
Length:	m	2.25	2.25
Width:	m	2.00	2.00
Depth:	mbgs	2.00	2.00

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

Table R2: Summary of Soil Samples Submitted for Chemical Analysis

Excavation	Borehole Vicinity	Horizontal Extent/Dimensions (metres)	Excavation Depth	Field Screening Samples	Samples Submitted for Chemical Analysis	Sidewall or Floor Sample	Sample Depth (mbgs)	Parameters Analysed
TP1	TP4r	2.25x2.0	2	20	Base 3	Floor Sample	1.5	PHCs and BTEX
					Base 4	Floor Sample	1.5	PHCs and BTEX
					NW2	Southwall Sample	0.3-0.45	PHCs and BTEX
					SW2	Dup NW2	0.3-0.45	PHCs and BTEX
					EW3	Eastwall Sample	0.3-0.45	PHCs and BTEX
TP2	TP3r	2.25x2.0	2	20	Base 1	Floor Sample	1.5	PHCs and BTEX
					Base 4	Floor Sample	1.5	PHCs and BTEX
					WW1	Eastwall Sample	0.5-1.0	PHCs and BTEX
					WW2	Dup WW1	0.5-1.0	PHCs and BTEX
					EW3	Northwall Sample	0.0-0.6	PHCs and BTEX

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

Table R3: Summary of Soil Samples Submitted for Chemical Analysis (Import Fill)

Sample ID	Date	Parameter Analysed	Rationale
GS1	27-Nov-18	PHCs and BTEX	Assess quality of import fill
GS2	27-Nov-18	OC Pesticides	Assess quality of import fill
GS2	27-Nov-18	Metals and Inorganics	Assess quality of import fill

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

Table R4: Summary of Metals and Inorganics in Soil

Parameter	MECP Table 1 SCS	GS3
Date of Collection		27-Nov-2018
Date Reported		28-Nov-2017
Sampling Depth (mbgs)		0.3-0.6
Analytical Report Reference No.		9741445
Antimony	1.3	<0.8
Arsenic	18	5
Barium	220	92
Beryllium	2.5	0.8
Boron	36	11
Boron (Hot Water Soluble)	NA	0.3
Cadmium	1.2	<0.5
Chromium	70	20
Cobalt	21	10.5
Copper	92	22
Lead	120	27
Molybdenum	2	0.6
Nickel	82	22
Selenium	1.5	<0.4
Silver	0.5	<0.2
Thallium	1	<0.4
Uranium	2.5	0.7
Vanadium	86	31
Zinc	290	78
Chromium VI	0.66	<0.2
Cyanide	0.051	<0.040
Mercury	0.27	<0.10
Electrical Conductivity	0.57	0.165
Sodium Adsorption Ratio	2.4	0.841
pH, 2:1 CaCl2 Extraction		7.83

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

Table R5: Summary of PHCs and BTEX in Soil

Parameter	MECP Table 8 SCS	TP1 Base 1	TP1 Base 4	TP1 NW2	TP! SW2 (Dup NW2)	TP1 WW1	TP2 Base 3	TP2 Base 4
Borehole Vicinity		Tp4r	Tp4r	Tp4r	Tp4r	Tp4r	TP3r	TP3r
Excavation		TP1	TP1	TP1	TP1	TP1	TP2	TP2
Date of Collection		26-Nov-18	26-Nov-18	26-Nov-18	26-Nov-18	26-Nov-18	26-Nov-18	26-Nov-18
Date Reported		29-Nov-18	29-Nov-18	29-Nov-18	29-Nov-18	29-Nov-18	29-Nov-18	29-Nov-18
Sample Depth (mbgs)		1.50	1.50	0.5-1.0	0.5-1.0	0.5-1.0	1.50	1.50
Analytical Report Reference No.		9743771	9743776	9743777	9743778	9743779	9743885	9743894
Benzene	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (total)	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PHCs F1-BTEX	25	<5	<5	<5	<5	<5	<5	<5
PHCs F2	10	<10	<10	<10	<10	<10	<10	<10
PHCs F3	240	<50	<50	<50	<50	<50	<50	<50
PHCs F4	120	<50	<50	<50	<50	<50	<50	<50

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

Table R5: Summary of PHCs and BTEX in Soil

Parameter	MECP Table 8 SCS	TP2 WW1	TP2 WW2 (Dup WW1)	TP2 EW3	GS1
Borehole Vicinity		TP3r	TP3r	TP3r	Import Fill Testing
Excavation		TP2	TP2	TP2	
Date of Collection		26-Nov-18	26-Nov-18	26-Nov-18	27-Nov-18
Date Reported		29-Nov-18	29-Nov-18	29-Nov-18	28-Nov-17
Sample Depth (mbgs)		0.3-0.45	0.3-0.45	0.3-0.45	0.3-0.6
Analytical Report Reference No.		9743897	9743895	9743896	9741398
Benzene	0.02	<0.02	<0.02	<0.02	<0.02
Toluene	0.2	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (total)	0.05	<0.05	<0.05	<0.05	<0.05
PHCs F1-BTEX	25	<5	<5	<5	<5
PHCs F2	10	<10	<10	<10	<10
PHCs F3	240	<50	<50	<50	<50
PHCs F4	120	<50	<50	<50	<50

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

Table R6: Summary of OCPs in Soil

Parameter	MECP Table 1 SCS	GS2
Date of Collection		27-Nov-2018
Date Reported		28-Nov-2017
Sampling Depth (mbgs)		0.3-0.6
Analytical Report Reference No.		9741403
Aldrin	0.05	<0.005
Chlordane	0.05	<0.007
DDD	0.05	<0.007
DDE	0.05	<0.007
DDT	1.4	<0.007
Dieldrin	0.05	<0.005
Endosulfan	0.04	<0.005
Endrin	0.04	<0.005
Gamma-Hexachlorocyclohexane	0.01	<0.005
Heptachlor	0.05	<0.005
Heptachlor Epoxide	0.05	<0.005
Hexachlorobenzene	0.01	<0.005
Hexachlorobutadiene	0.01	<0.01
Hexachloroethane	0.01	<0.01
Methoxychlor	0.05	<0.005

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

Notes for Soil Summary Tables

Result	Concentration exceeds site conditions standards
Result	Detection limit exceeds site condition standards
Units	Units for all soil analyses are in µg/g (ppb) unless otherwise indicated
mm	Milimeters
m	Meters
mbgs	Meters below ground surface
masl	Meters above sea level
SCS	Site Condition Standards
NA	Not Applicable
ORPs	Other Regulated Parameters
PHCs	Petroleum Hydrocarbons
BTEX	Benzene, toluene, ethylbenzene, xylenes (total)
OCPs	Organochlorine pesticides
MECP Table 1 SCS	Full Depth Background Site Condition Standards as contained in Table 1 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
*	Not considard to be contamination based on the results of the forensic analysis

Certificates of Analysis – Confirmatory Sampling

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ATTENTION TO: Shafi Andseta

PROJECT: 17-508-20

AGAT WORK ORDER: 18T414274

TRACE ORGANICS REVIEWED BY: Pinkal Patel, Report Reviewer

DATE REPORTED: Nov 30, 2018

PAGES (INCLUDING COVER): 9

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 18T414274

PROJECT: 17-508-20

CLIENT NAME: DS CONSULTANTS LTD.

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2018-11-28

DATE REPORTED: 2018-11-29

		SAMPLE DESCRIPTION:		TP1 Base 1	TP1 Base 4	TP1 NW2	TP1 SW2	TP1 WW1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-11-26	2018-11-26	2018-11-26	2018-11-26	2018-11-26
Parameter	**Unit**	**G / S**	**RDL**	**9743771**	**9743776**	**9743777**	**9743778**	**9743779**
F1 (C6 to C10)	µg/g	25	5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA	NA
Moisture Content	%		0.1	20.8	8.7	13.3	13.2	12.4
Surrogate	**Unit**	**Acceptable Limits**						
Terphenyl	%	60-140		78	102	77	65	80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9743771-9743779 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

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Certificate of Analysis

AGAT WORK ORDER: 18T414274

PROJECT: 17-508-20

CLIENT NAME: DS CONSULTANTS LTD.

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-11-28

DATE REPORTED: 2018-11-29

		SAMPLE DESCRIPTION:		TP1 Base 1	TP1 Base 4	TP1 NW2	TP1 SW2	TP1 WW1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-11-26	2018-11-26	2018-11-26	2018-11-26	2018-11-26
Parameter	Unit	G / S	RDL	9743771	9743776	9743777	9743778	9743779
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05

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Certificate of Analysis

AGAT WORK ORDER: 18T414274

PROJECT: 17-508-20

CLIENT NAME: DS CONSULTANTS LTD.

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-11-28

DATE REPORTED: 2018-11-29

		SAMPLE DESCRIPTION:		TP1 Base 1	TP1 Base 4	TP1 NW2	TP1 SW2	TP1 WW1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-11-26	2018-11-26	2018-11-26	2018-11-26	2018-11-26
Parameter	**Unit**	**G / S**	**RDL**	**9743771**	**9743776**	**9743777**	**9743778**	**9743779**
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**						
Toluene-d8	% Recovery	50-140		96	94	97	95	96
4-Bromofluorobenzene	% Recovery	50-140		100	97	103	98	95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9743771-9743779 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T414274

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

Trace Organics Analysis

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	9732671		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	81%	50%	140%	90%	50%	140%
Vinyl Chloride	9732671		< 0.02	< 0.02	NA	< 0.02	99%	50%	140%	85%	50%	140%	84%	50%	140%
Bromomethane	9732671		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	95%	50%	140%	83%	50%	140%
Trichlorofluoromethane	9732671		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	108%	50%	140%	88%	50%	140%
Acetone	9732671		< 0.50	< 0.50	NA	< 0.50	103%	50%	140%	117%	50%	140%	88%	50%	140%
1,1-Dichloroethylene	9732671		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	85%	60%	130%	93%	50%	140%
Methylene Chloride	9732671		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	107%	60%	130%	100%	50%	140%
Trans- 1,2-Dichloroethylene	9732671		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	103%	60%	130%	93%	50%	140%
Methyl tert-butyl Ether	9732671		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	109%	60%	130%	99%	50%	140%
1,1-Dichloroethane	9732671		< 0.02	< 0.02	NA	< 0.02	101%	50%	140%	95%	60%	130%	82%	50%	140%
Methyl Ethyl Ketone	9732671		< 0.50	< 0.50	NA	< 0.50	99%	50%	140%	94%	50%	140%	84%	50%	140%
Cis- 1,2-Dichloroethylene	9732671		< 0.02	< 0.02	NA	< 0.02	92%	50%	140%	93%	60%	130%	93%	50%	140%
Chloroform	9732671		< 0.04	< 0.04	NA	< 0.04	97%	50%	140%	100%	60%	130%	86%	50%	140%
1,2-Dichloroethane	9732671		< 0.03	< 0.03	NA	< 0.03	88%	50%	140%	89%	60%	130%	87%	50%	140%
1,1,1-Trichloroethane	9732671		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	93%	60%	130%	80%	50%	140%
Carbon Tetrachloride	9732671		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	97%	60%	130%	83%	50%	140%
Benzene	9732671		< 0.02	< 0.02	NA	< 0.02	99%	50%	140%	89%	60%	130%	99%	50%	140%
1,2-Dichloropropane	9732671		< 0.03	< 0.03	NA	< 0.03	88%	50%	140%	89%	60%	130%	94%	50%	140%
Trichloroethylene	9732671		< 0.03	< 0.03	NA	< 0.03	86%	50%	140%	93%	60%	130%	104%	50%	140%
Bromodichloromethane	9732671		< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	96%	60%	130%	74%	50%	140%
Methyl Isobutyl Ketone	9732671		< 0.50	< 0.50	NA	< 0.50	98%	50%	140%	88%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	9732671		< 0.04	< 0.04	NA	< 0.04	111%	50%	140%	107%	60%	130%	106%	50%	140%
Toluene	9732671		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	118%	60%	130%	116%	50%	140%
Dibromochloromethane	9732671		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	111%	60%	130%	104%	50%	140%
Ethylene Dibromide	9732671		< 0.04	< 0.04	NA	< 0.04	99%	50%	140%	100%	60%	130%	94%	50%	140%
Tetrachloroethylene	9732671		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	98%	60%	130%	111%	50%	140%
1,1,1,2-Tetrachloroethane	9732671		< 0.04	< 0.04	NA	< 0.04	95%	50%	140%	112%	60%	130%	109%	50%	140%
Chlorobenzene	9732671		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	116%	60%	130%	110%	50%	140%
Ethylbenzene	9732671		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	114%	60%	130%	114%	50%	140%
m & p-Xylene	9732671		< 0.05	< 0.05	NA	< 0.05	126%	50%	140%	122%	60%	130%	113%	50%	140%
Bromoform	9732671		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	111%	60%	130%	84%	50%	140%
Styrene	9732671		< 0.05	< 0.05	NA	< 0.05	83%	50%	140%	101%	60%	130%	96%	50%	140%
1,1,2,2-Tetrachloroethane	9732671		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	118%	60%	130%	109%	50%	140%
o-Xylene	9732671		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	101%	60%	130%	115%	50%	140%
1,3-Dichlorobenzene	9732671		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	108%	60%	130%	108%	50%	140%
1,4-Dichlorobenzene	9732671		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	118%	60%	130%	107%	50%	140%
1,2-Dichlorobenzene	9732671		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	106%	60%	130%	112%	50%	140%
1,3-Dichloropropene	9732671		< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	95%	60%	130%	92%	50%	140%
n-Hexane	9732671		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	100%	60%	130%	80%	50%	140%

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Quality Assurance

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T414274

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

Trace Organics Analysis (Continued)

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	9732425		< 5	< 5	NA	< 5	82%	60%	130%	89%	85%	115%	79%	70%	130%
F2 (C10 to C16)	9731944		< 10	< 10	NA	< 10	94%	60%	130%	87%	80%	120%	92%	70%	130%
F3 (C16 to C34)	9731944		< 50	< 50	NA	< 50	104%	60%	130%	104%	80%	120%	85%	70%	130%
F4 (C34 to C50)	9731944		< 50	< 50	NA	< 50	89%	60%	130%	99%	80%	120%	90%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T414274

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	Balance
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T414274

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

18T4 14274

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: PS Consultants
Contact: Shafi Andleta
Address: 6221 Highway 7 Unit 16, Woodbridge, ON
Phone: 416 529 5454 Fax:
Reports to be sent to:
1. Email: shafi.andleta@dsconsultants.ca
2. Email: isaac.feng@dsconsultants.ca

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table (Indicate One): ☐ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (Check One): ☐ Coarse ☑ Fine

☐ Sewer Use
☐ Sanitary ☐ Storm
Region (Indicate One): ☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a Record of Site Condition? ☑ Yes ☐ No

Report Guideline on Certificate of Analysis ☑ Yes ☐ No

Project Information:

Project: 17-508-20
Site Location:
Sampled By: Tanner Leonhardt
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐
Company:
Contact:
Address:
Email:

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Laboratory Use Only

Work Order #:
Cooler Quantity: Med
Arrival Temperatures: 7.7 | 6.9 | 7.9 / 5.7 | 5.5 | 5.9
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☐ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☑ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ CrO_4^{2-} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☑ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
TP1 Base1	26/11/18		3	Soil								✓	✓					
TP1 Base4	↓		3	↓								✓	✓					
TP1 NW2			3									✓	✓					
TP1 SW2			3									✓	✓					
TP1 WW1			3									✓	✓					

Samples Relinquished By (Print Name and Sign): Isaac Feng	Date: Nov 28, 2018	Time:	Samples Received By (Print Name and Sign):	Date: Nov. 28/18	Time: 8:00
Samples Relinquished By (Print Name and Sign):	Date: Nov 28	Time: 1:40	Samples Received By (Print Name and Sign):	Date:	Time:
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:

Page ____ of ____

Nº: T 066402

Document ID: DN 78-1511 014

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CLIENT NAME: DS CONSULTANTS LTD.
6221 HIGHWAY 7 WEST, UNIT #16
VAUGHAN, ON L4H 0K8
905-264-9393

ATTENTION TO: Shafi Andseta

PROJECT: 17-508-20

AGAT WORK ORDER: 18T414276

TRACE ORGANICS REVIEWED BY: Pinkal Patel, Report Reviewer

DATE REPORTED: Nov 29, 2018

PAGES (INCLUDING COVER): 9

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 18T414276

PROJECT: 17-508-20

CLIENT NAME: DS CONSULTANTS LTD.

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2018-11-28

DATE REPORTED: 2018-11-29

		SAMPLE DESCRIPTION:		TP2 Base 3	TP2 Base 4	TP2 WW2	TP2 EW3	TP2 WW1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-11-26	2018-11-26	2018-11-26	2018-11-26	2018-11-26
Parameter	**Unit**	**G / S**	**RDL**	**9743885**	**9743894**	**9743895**	**9743896**	**9743897**
F1 (C6 to C10)	µg/g	25	5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA	NA
Moisture Content	%		0.1	12.1	12.5	11.9	12.2	18.7
Surrogate	**Unit**	**Acceptable Limits**						
Terphenyl	%	60-140		92	101	122	121	105

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9743885-9743897 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T414276

PROJECT: 17-508-20

CLIENT NAME: DS CONSULTANTS LTD.

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-11-28

DATE REPORTED: 2018-11-29

		SAMPLE DESCRIPTION:		TP2 Base 3	TP2 Base 4	TP2 WW2	TP2 EW3	TP2 WW1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-11-26	2018-11-26	2018-11-26	2018-11-26	2018-11-26
Parameter	Unit	G / S	RDL	9743885	9743894	9743895	9743896	9743897
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 18T414276

PROJECT: 17-508-20

CLIENT NAME: DS CONSULTANTS LTD.

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-11-28

DATE REPORTED: 2018-11-29

		SAMPLE DESCRIPTION:		TP2 Base 3	TP2 Base 4	TP2 WW2	TP2 EW3	TP2 WW1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-11-26	2018-11-26	2018-11-26	2018-11-26	2018-11-26
Parameter	**Unit**	**G / S**	**RDL**	**9743885**	**9743894**	**9743895**	**9743896**	**9743897**
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**						
Toluene-d8	% Recovery	50-140		95	95	98	99	96
4-Bromofluorobenzene	% Recovery	50-140		98	96	84	84	87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9743885-9743897 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T414276

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

Trace Organics Analysis

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	9732671		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	81%	50%	140%	90%	50%	140%
Vinyl Chloride	9732671		< 0.02	< 0.02	NA	< 0.02	99%	50%	140%	85%	50%	140%	84%	50%	140%
Bromomethane	9732671		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	95%	50%	140%	83%	50%	140%
Trichlorofluoromethane	9732671		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	108%	50%	140%	88%	50%	140%
Acetone	9732671		< 0.50	< 0.50	NA	< 0.50	103%	50%	140%	117%	50%	140%	88%	50%	140%
1,1-Dichloroethylene	9732671		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	85%	60%	130%	93%	50%	140%
Methylene Chloride	9732671		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	107%	60%	130%	100%	50%	140%
Trans- 1,2-Dichloroethylene	9732671		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	103%	60%	130%	93%	50%	140%
Methyl tert-butyl Ether	9732671		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	109%	60%	130%	99%	50%	140%
1,1-Dichloroethane	9732671		< 0.02	< 0.02	NA	< 0.02	101%	50%	140%	95%	60%	130%	82%	50%	140%
Methyl Ethyl Ketone	9732671		< 0.50	< 0.50	NA	< 0.50	99%	50%	140%	94%	50%	140%	84%	50%	140%
Cis- 1,2-Dichloroethylene	9732671		< 0.02	< 0.02	NA	< 0.02	92%	50%	140%	93%	60%	130%	93%	50%	140%
Chloroform	9732671		< 0.04	< 0.04	NA	< 0.04	97%	50%	140%	100%	60%	130%	86%	50%	140%
1,2-Dichloroethane	9732671		< 0.03	< 0.03	NA	< 0.03	88%	50%	140%	89%	60%	130%	87%	50%	140%
1,1,1-Trichloroethane	9732671		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	93%	60%	130%	80%	50%	140%
Carbon Tetrachloride	9732671		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	97%	60%	130%	83%	50%	140%
Benzene	9732671		< 0.02	< 0.02	NA	< 0.02	99%	50%	140%	89%	60%	130%	99%	50%	140%
1,2-Dichloropropane	9732671		< 0.03	< 0.03	NA	< 0.03	88%	50%	140%	89%	60%	130%	94%	50%	140%
Trichloroethylene	9732671		< 0.03	< 0.03	NA	< 0.03	86%	50%	140%	93%	60%	130%	104%	50%	140%
Bromodichloromethane	9732671		< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	96%	60%	130%	74%	50%	140%
Methyl Isobutyl Ketone	9732671		< 0.50	< 0.50	NA	< 0.50	98%	50%	140%	88%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	9732671		< 0.04	< 0.04	NA	< 0.04	111%	50%	140%	107%	60%	130%	106%	50%	140%
Toluene	9732671		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	118%	60%	130%	116%	50%	140%
Dibromochloromethane	9732671		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	111%	60%	130%	104%	50%	140%
Ethylene Dibromide	9732671		< 0.04	< 0.04	NA	< 0.04	99%	50%	140%	100%	60%	130%	94%	50%	140%
Tetrachloroethylene	9732671		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	98%	60%	130%	111%	50%	140%
1,1,1,2-Tetrachloroethane	9732671		< 0.04	< 0.04	NA	< 0.04	95%	50%	140%	112%	60%	130%	109%	50%	140%
Chlorobenzene	9732671		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	116%	60%	130%	110%	50%	140%
Ethylbenzene	9732671		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	114%	60%	130%	114%	50%	140%
m & p-Xylene	9732671		< 0.05	< 0.05	NA	< 0.05	126%	50%	140%	122%	60%	130%	113%	50%	140%
Bromoform	9732671		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	111%	60%	130%	84%	50%	140%
Styrene	9732671		< 0.05	< 0.05	NA	< 0.05	83%	50%	140%	101%	60%	130%	96%	50%	140%
1,1,2,2-Tetrachloroethane	9732671		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	118%	60%	130%	109%	50%	140%
o-Xylene	9732671		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	101%	60%	130%	115%	50%	140%
1,3-Dichlorobenzene	9732671		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	108%	60%	130%	108%	50%	140%
1,4-Dichlorobenzene	9732671		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	118%	60%	130%	107%	50%	140%
1,2-Dichlorobenzene	9732671		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	106%	60%	130%	112%	50%	140%
1,3-Dichloropropene	9732671		< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	95%	60%	130%	92%	50%	140%
n-Hexane	9732671		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	100%	60%	130%	80%	50%	140%

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Quality Assurance

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T414276

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

Trace Organics Analysis (Continued)

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	9732425		< 5	< 5	NA	< 5	82%	60%	130%	89%	85%	115%	79%	70%	130%
F2 (C10 to C16)	9731944		< 10	< 10	NA	< 10	94%	60%	130%	87%	80%	120%	92%	70%	130%
F3 (C16 to C34)	9731944		< 50	< 50	NA	< 50	104%	60%	130%	104%	80%	120%	85%	70%	130%
F4 (C34 to C50)	9731944		< 50	< 50	NA	< 50	89%	60%	130%	99%	80%	120%	90%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T414276

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	Balance
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T414276

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Tanner Leonhardt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Laboratory Use Only
Work Order #: 18T414276
Cooler Quantity: Med
Arrival Temperatures: 7.7 | 6.9 | 7.9 ; 5.7 | 5.8 | 5.9
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:
Company: DS Consultants
Contact: Shafi Andeta
Address: 6221 Highway 7 Unit 16, Woodbridge, ON
Phone: 416 529 5454 Fax:
Reports to be sent to:
1. Email: shafi.andeta@dsconsultants.ca
2. Email: isaac.feng@dsconsultants.ca

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table ___ *Indicate One*
☐Ind/Com
☐Res/Park
☐Agriculture
Soil Texture *(Check One)*
☐Coarse
☐Fine

☐ Sewer Use
☐Sanitary
☐Storm
Region ___ *Indicate One*
☐MISA

☐Regulation 558
☐CCME
☐Prov. Water Quality Objectives (PWQO)
☐Other
___ *Indicate One*

Is this submission for a Record of Site Condition? ☑ Yes ☐ No

Report Guideline on Certificate of Analysis ☑ Yes ☐ No

Turnaround Time (TAT) Required:
Regular TAT ☐ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☑ Next Business Day
OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 17-508-20
Site Location:
Sampled By: Tanner Leonhardt
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:
Bill To Same: Yes ☐ No ☐
Company:
Contact:
Address:
Email:

Sample Matrix Legend
B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Analysis columns: Field Filtered - Metals, Hg, CrVI (Y/N); O. Reg 153: Metals and Inorganics; ☐All Metals ☐153 Metals (excl. Hydrides); ☐Hydride Metals ☐153 Metals (incl. Hydrides); ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr6+ ☐EC ☐FOC ☐Hg ☐pH ☐SAR; Full Metals Scan; Regulation/Custom Metals; Nutrients: ☐TP ☐NH3 ☐TKN ☐NO3 ☐NO2 ☐NO3+NO2; Volatiles: ☑VOC ☐BTEX ☐THM; PHCs F1 - F4; ABNs; PAHs; PCBs: ☐Total ☐Aroclors; Organochlorine Pesticides; TCLP: ☐M&I ☐VOCs ☐ABNs ☐B(a)P ☐PCBs; Sewer Use

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y/N	Volatiles: VOC	PHCs F1 - F4
TP2 Base 3	Nov 26/18		3	Soil			✓	✓
TP2 Base 4	↓		3	↓			✓	✓
TP2 WW2	↓		3	↓			✓	✓
TP2 EW3	↓		3	↓			✓	✓
TP2 WW1	↓		3	↓			✓	✓

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Isaac Feng [signature]	Nov 28 2018		[signature]	Nov 28/18	8:40
[signature]	Nov. 28/18	11:46			

Page ___ of ___

Nº: T 066402

Certificates of Analysis – Import Fill

6221 Highway 7, Unit 16, Vaughan, Ontario, L4H 0K8
www.dsconsultants.ca

AGAT Laboratories

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CANADA L4Z 1Y2
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CLIENT NAME: **DS CONSULTANTS LTD.**
6221 HIGHWAY 7 WEST, UNIT #16
VAUGHAN, ON L4H 0K8
905-264-9393

ATTENTION TO: **Shafi Andseta**

PROJECT: **17-508-20**

AGAT WORK ORDER: **18T413943**

SOIL ANALYSIS REVIEWED BY: **Amanjot Bhela, Inorganic Supervisor**

TRACE ORGANICS REVIEWED BY: **Pinkal Patel, Report Reviewer**

DATE REPORTED: **Nov 28, 2018**

PAGES (INCLUDING COVER): **9**

VERSION*: **1**

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 18T413943

PROJECT: 17-508-20

CLIENT NAME: DS CONSULTANTS LTD.

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Isaac Feng

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2018-11-27

DATE REPORTED: 2018-11-28

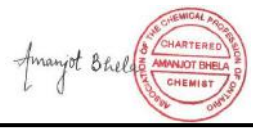
		SAMPLE DESCRIPTION:		GS3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-11-27
Parameter	Unit	G / S	RDL	9741445
Antimony	µg/g	1.3	0.8	<0.8
Arsenic	µg/g	18	1	5
Barium	µg/g	220	2	92
Beryllium	µg/g	2.5	0.5	0.8
Boron	µg/g	36	5	11
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.30
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	70	2	20
Cobalt	µg/g	21	0.5	10.5
Copper	µg/g	92	1	22
Lead	µg/g	120	1	27
Molybdenum	µg/g	2	0.5	0.6
Nickel	µg/g	82	1	22
Selenium	µg/g	1.5	0.4	<0.4
Silver	µg/g	0.5	0.2	<0.2
Thallium	µg/g	1	0.4	<0.4
Uranium	µg/g	2.5	0.5	0.7
Vanadium	µg/g	86	1	31
Zinc	µg/g	290	5	78
Chromium VI	µg/g	0.66	0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10
Electrical Conductivity	mS/cm	0.57	0.005	0.165
Sodium Adsorption Ratio	NA	2.4	NA	0.841
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.83

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9741445 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T413943

PROJECT: 17-508-20

CLIENT NAME: DS CONSULTANTS LTD.

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Isaac Feng

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2018-11-27

DATE REPORTED: 2018-11-28

		SAMPLE DESCRIPTION:		GS2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-11-27
Parameter	**Unit**	**G / S**	**RDL**	**9741403**
Hexachloroethane	µg/g	0.01	0.01	<0.01
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005
Heptachlor	µg/g	0.05	0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007
DDE	µg/g	0.05	0.007	<0.007
DDD	µg/g	0.05	0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005
Methoxychlor	µg/g	0.05	0.005	<0.005
Hexachlorobenzene	µg/g	0.01	0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01
Moisture Content	%		0.1	19.8
Surrogate	**Unit**	**Acceptable Limits**		
TCMX	%	50-140		70
Decachlorobiphenyl	%	60-130		96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9741403 Results are based on the dry weight of the soil.
Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.
Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T413943

PROJECT: 17-508-20

CLIENT NAME: DS CONSULTANTS LTD.

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Isaac Feng

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2018-11-27

DATE REPORTED: 2018-11-28

		SAMPLE DESCRIPTION:		GS1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-11-27
Parameter	**Unit**	**G / S**	**RDL**	**9741398**
Benzene	µg/g	0.02	0.02	<0.02
Toluene	µg/g	0.2	0.05	<0.05
Ethylbenzene	µg/g	0.05	0.05	<0.05
Xylene Mixture	µg/g	0.05	0.05	<0.05
F1 (C6 to C10)	µg/g	25	5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5
F2 (C10 to C16)	µg/g	10	10	<10
F3 (C16 to C34)	µg/g	240	50	<50
F4 (C34 to C50)	µg/g	120	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA
Moisture Content	%		0.1	24.3
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9741398 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

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Quality Assurance

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T413943

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

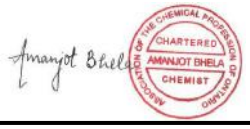
SAMPLED BY:Isaac Feng

Soil Analysis

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	9741257		<0.8	<0.8	NA	< 0.8	98%	70%	130%	94%	80%	120%	73%	70%	130%
Arsenic	9741257		2	3	NA	< 1	102%	70%	130%	103%	80%	120%	106%	70%	130%
Barium	9741257		39	40	2.5%	< 2	99%	70%	130%	101%	80%	120%	112%	70%	130%
Beryllium	9741257		<0.5	<0.5	NA	< 0.5	94%	70%	130%	97%	80%	120%	96%	70%	130%
Boron	9741257		7	6	NA	< 5	102%	70%	130%	101%	80%	120%	96%	70%	130%
Boron (Hot Water Soluble)	9741257		0.22	0.23	NA	< 0.10	107%	60%	140%	102%	70%	130%	98%	60%	140%
Cadmium	9741257		<0.5	<0.5	NA	< 0.5	104%	70%	130%	107%	80%	120%	104%	70%	130%
Chromium	9741257		15	15	0.0%	< 2	99%	70%	130%	103%	80%	120%	102%	70%	130%
Cobalt	9741257		6.1	6.1	0.0%	< 0.5	102%	70%	130%	102%	80%	120%	97%	70%	130%
Copper	9741257		15	15	0.0%	< 1	99%	70%	130%	103%	80%	120%	91%	70%	130%
Lead	9741257		10	10	0.0%	< 1	96%	70%	130%	101%	80%	120%	100%	70%	130%
Molybdenum	9741257		<0.5	<0.5	NA	< 0.5	101%	70%	130%	107%	80%	120%	112%	70%	130%
Nickel	9741257		12	12	0.0%	< 1	99%	70%	130%	100%	80%	120%	97%	70%	130%
Selenium	9741257		<0.4	1.0	NA	< 0.4	102%	70%	130%	103%	80%	120%	104%	70%	130%
Silver	9741257		<0.2	<0.2	NA	< 0.2	95%	70%	130%	113%	80%	120%	98%	70%	130%
Thallium	9741257		<0.4	<0.4	NA	< 0.4	96%	70%	130%	106%	80%	120%	108%	70%	130%
Uranium	9741257		<0.5	<0.5	NA	< 0.5	97%	70%	130%	90%	80%	120%	90%	70%	130%
Vanadium	9741257		24	26	8.0%	< 1	103%	70%	130%	107%	80%	120%	108%	70%	130%
Zinc	9741257		50	51	2.0%	< 5	101%	70%	130%	106%	80%	120%	109%	70%	130%
Chromium VI	9738368		<0.2	<0.2	NA	< 0.2	83%	70%	130%	105%	80%	120%	128%	70%	130%
Cyanide	9737961		<0.040	<0.040	NA	< 0.040	104%	70%	130%	110%	80%	120%	104%	70%	130%
Mercury	9741257		<0.10	<0.10	NA	< 0.10	110%	70%	130%	99%	80%	120%	100%	70%	130%
Electrical Conductivity	9741257		0.350	0.380	8.2%	< 0.005	95%	90%	110%	NA			NA		
Sodium Adsorption Ratio	9741257		3.91	3.88	0.8%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	9737961		7.12	7.17	0.7%	NA	101%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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

Certified By:



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Quality Assurance

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T413943

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Isaac Feng

Trace Organics Analysis

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	9732671		< 0.02	< 0.02	NA	< 0.02	84%	60%	130%	90%	60%	130%	92%	60%	130%
Toluene	9732671		< 0.05	< 0.05	NA	< 0.05	87%	60%	130%	84%	60%	130%	90%	60%	130%
Ethylbenzene	9732671		< 0.05	< 0.05	NA	< 0.05	83%	60%	130%	89%	60%	130%	87%	60%	130%
Xylene Mixture	9732671		< 0.05	< 0.05	NA	< 0.05	86%	60%	130%	98%	60%	130%	84%	60%	130%
F1 (C6 to C10)	9732671		< 5	< 5	NA	< 5	80%	60%	130%	88%	85%	115%	76%	70%	130%
F2 (C10 to C16)	9724834		< 10	< 10	NA	< 10	80%	60%	130%	92%	80%	120%	84%	70%	130%
F3 (C16 to C34)	9724834		< 50	< 50	NA	< 50	98%	60%	130%	108%	80%	120%	89%	70%	130%
F4 (C34 to C50)	9724834		< 50	< 50	NA	< 50	86%	60%	130%	102%	80%	120%	108%	70%	130%
O. Reg. 153(511) - OC Pesticides (Soil)															
Hexachloroethane	9733630		< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	94%	50%	140%	82%	50%	140%
Gamma-Hexachlorocyclohexane	9733630		< 0.005	< 0.005	NA	< 0.005	104%	50%	140%	82%	50%	140%	74%	50%	140%
Heptachlor	9733630		< 0.005	< 0.005	NA	< 0.005	105%	50%	140%	92%	50%	140%	82%	50%	140%
Aldrin	9733630		< 0.005	< 0.005	NA	< 0.005	104%	50%	140%	89%	50%	140%	80%	50%	140%
Heptachlor Epoxide	9733630		< 0.005	< 0.005	NA	< 0.005	101%	50%	140%	88%	50%	140%	84%	50%	140%
Endosulfan	9733630		< 0.005	< 0.005	NA	< 0.005	103%	50%	140%	98%	50%	140%	86%	50%	140%
Chlordane	9733630		< 0.007	< 0.007	NA	< 0.007	103%	50%	140%	92%	50%	140%	82%	50%	140%
DDE	9733630		< 0.007	< 0.007	NA	< 0.007	99%	50%	140%	95%	50%	140%	94%	50%	140%
DDD	9733630		< 0.007	< 0.007	NA	< 0.007	101%	50%	140%	91%	50%	140%	92%	50%	140%
DDT	9733630		< 0.007	< 0.007	NA	< 0.007	99%	50%	140%	87%	50%	140%	81%	50%	140%
Dieldrin	9733630		< 0.005	< 0.005	NA	< 0.005	102%	50%	140%	94%	50%	140%	81%	50%	140%
Endrin	9733630		< 0.005	< 0.005	NA	< 0.005	100%	50%	140%	93%	50%	140%	82%	50%	140%
Methoxychlor	9733630		< 0.005	< 0.005	NA	< 0.005	97%	50%	140%	86%	50%	140%	85%	50%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T413943

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Isaac Feng

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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Method Summary

CLIENT NAME: DS CONSULTANTS LTD.

AGAT WORK ORDER: 18T413943

PROJECT: 17-508-20

ATTENTION TO: Shafi Andseta

SAMPLING SITE:

SAMPLED BY:Isaac Feng

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260D	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260D	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260D	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260D	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID

AGAT Laboratories

1 large

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only
Work Order #: 18T413943
Cooler Quantity:
Arrival Temperatures: 6.6 | 5.6 | 4.6
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes: RUSH

Report Information:
Company: DS Consultants
Contact: Shafi Andleta
Address: 6221 Highway 7 Unit 16, Woodbridge, ON
Phone: 416 529 5454 Fax:
Reports to be sent to:
1. Email: shafi.andleta@dsconsultants.ca
2. Email: isaac.feng@dsconsultants.ca

Regulatory Requirements:
(Please check all applicable boxes) ☐ No Regulatory Requirement

☑ Regulation 153/04
Table (Indicate One) ☐ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (Check One) ☐ Coarse ☑ Fine

☐ Sewer Use
☐ Sanitary ☐ Storm
Region (Indicate One) ☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a Record of Site Condition? ☑ Yes ☐ No
Report Guideline on Certificate of Analysis ☑ Yes ☐ No

Turnaround Time (TAT) Required:
Regular TAT ☐ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☑ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
TAT is exclusive of weekends and statutory holidays
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 17-508-20
Site Location:
Sampled By: Isaac Feng
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:
Bill To Same: Yes ☑ No ☐
Company:
Contact:
Address:
Email:

Sample Matrix Legend
B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides) ☐ ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR)	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☑ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
GS1	NOV 27/18		3	Soil			✓				✓	✓						
GS2	NOV 27/18		1	Soil												✓		
GS3	NOV 27/18		1	Soil														

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Isaac Feng	NOV 27/18		Jay Patel	28/11/18	3:10pm
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page ____ of ____
N°: T 066402

Document ID: DIV-78-1511-014

Appendix F – Phase Two Conceptual Site Model

Phase Two Conceptual Site Model

Introduction

The Phase Two Conceptual Site Model (CSM) has been prepared for the Site based on the Phase One ESA, Phase Two ESA, and remediation activities. This Phase Two CSM is comprised of the following figures and text:

Figure 1 – Site Location Plan
Figure 2 – Phase One Property Site Plan
Figure 3A – Phase One Study Area
Figure 4 – Borehole Location Plan with APECs
Figure 5 – Groundwater Elevation Contours and Flow Direction
Figure 6A – Soil Characterization – Metals and ORPs
Figure 6B – Soil Characterization – PHCs
Figure 6C – Soil Characterization – OCPs and PCBs
Figure 7A – Groundwater Characterization – Metals and ORPs
Figure 7B – Groundwater Characterization – PHCs
Figure 7C – Groundwater Characterization – VOCs
Figure 7D – Groundwater Characterization – OCPs
Figure 8A- TP1 Confirmatory Soil Sample Location Plan
Figure 8B- TP2 Confirmatory Soil Sample Location Plan
Figure 9 – Cross Section A-A'
Figure 9A – Cross Section A-A' with PHCs and BTEX Impacts in soil (Pre-Remediation)
Figure 9B - Cross Section A-A' with PHCs and BTEX Impacts in soil (Post-Remediation)
Figure 10 – Cross Section B-B'
Figure 10A – Cross Section B-B' with PHCs and BTEX Impacts in soil (Pre-Remediation)
Figure 10B - Cross Section B-B' with PHCs and BTEX Impacts in soil (Post-Remediation)
Figure 11A- Pathways and Receptors (Pre-Remediation)
Figure 11B- Pathways and Receptors (Post-Remediation)

The Property is a 12.58-hectare (31.08 acres) parcel of land situated within mixed residential and agricultural neighbourhood in the Town of Oakville, Ontario. The Property is located approximately 1-kilometre (km) north of the intersection of Dundas Street West and Sixth Line. The Property was undeveloped and included no structures at the time of this investigation. The Property was previously developed with a residential house, three (3) detached storage sheds and a cellular communication tower, all of which were located in the southeast corner of the Property and have been demolished.

Based on a review of the Halton Region Official Plan and the Town of Oakville Official Plan, the Site is located within an area of natural significance (Natural Heritage Area).

The Property was historically operated as an agricultural field with a residential dwelling, from the late 1800s to the late 1900s. The southeast corner of the Property has been occupied by cellular communication tower (commercial use) from the early 2000s until approximately 2017 when the tower was demolished. A total of three (3) Potentially Contaminating Activities (PCAs) were identified in the Phase One ESA, which were considered to be contributing to three (3) APECs on the Property. The PCAs were associated with the importation of fill material of unknown quality in the southeast corner of the Site, the inferred application of pesticides and the inferred presence of a backup generator servicing the former cellular communication tower.

The Phase Two ESA involved the advancement of thirteen (13) boreholes and twelve (12) test pits, which was completed between November 2017 and January 2018. The boreholes were advanced to a maximum depth of 5.0 metres below ground surface (mbgs) under the supervision of DS personnel. Groundwater monitoring wells were installed in six (6) of the boreholes to facilitate the collection of groundwater samples and the assessment of groundwater flow direction. Soil and groundwater samples were collected and submitted for analysis of all PCOCs, including metals and ORPs, PHCs, BTEX and OCPs.

Soil Quality

Fill material impacted with PHCs and BTEX was identified in two (2) of the test pits (TP3r and TP4r) advanced within the southeast corner of the Site at depths ranging between 0-0.6 mbgs. Remedial excavation was conducted on November 26, 2018. The details of the remedial excavations are presented below. All of the soil samples submitted for analysis of metals and ORPs and OCPs met the MECP Table 1 SCS.

Remedial Excavation TP1

Remedial Excavation TP1 was completed on November 26, 2018. The objective of TP1 was to facilitate the removal and off-site disposal of the soils impacted with PHCs and BTEX which were identified in test pit TP4r at an approximate depth of 0-0.6 mbgs. The final dimensions of the remedial excavation were approximately 2.25 metres x 2.0 metres and extended to an approximate depth of 2.0 mbgs. Approximately 9 cubic metres of soils were excavated and disposed of at a licensed MECP receiving facility. Two (2) sidewall and two (2) floor samples were submitted for analysis of PHCs and BTEX, the results of which indicated concentrations below the MECP Table 1 SCS.

Remedial Excavation TP2

Remedial Excavation TP2 was completed on November 26, 2018. The objective of TP2 was to facilitate the removal and off-site disposal of the soils impacted with PHCs and BTEX which were identified in test pit TP3r at an approximate depth of 0-0.4 mbgs. The final dimensions of the remedial excavation were approximately 2.25 metres x 2.0 metres and extended to an approximate depth of 2.0 mbgs. Approximately 9 cubic metres of soils were excavated and disposed of at a licensed MECP receiving facility. Two (2) sidewall and two (2) floor samples were submitted for analysis of PHCs and BTEX, the results of which indicated concentrations below the MECP Table 1 SCS.

Approximately 20 cubic metres of fill material was imported to backfill remedial excavations TP1 and TP2. The imported soil was sourced from the pile of fill material located on the east neighbouring residential development property (east side of Sixth Line). DS visited the site on November 27, 2018. A total of 3 soil samples were collected from the above noted location for metals and ORPs, PHCs and OC Pesticides. The results of the chemical analyses indicated that all three (3) samples met the MECP Table 1 SCS.

Groundwater Quality

All of the groundwater samples analysed as part of the Phase Two ESA met the MECP Table 1 SCS for all of the parameters analysed, with the exception of MW1D-17, which exceeded the Table 1 SCS for uranium.

This monitoring well is situated in an agricultural field, and fill material was not identified any of the boreholes advanced in the vicinity of MW1D-17 (BH17-1N and BH17-3R). The monitoring well screen is situated across the Queenston formation shale and the silty clay till. No potential source of uranium was identified in the Phase One ESA in the vicinity of MW1D-17. Furthermore, any anthropogenic source would involve activity at the ground surface, acting as a contaminant source leaching uranium into the underlying soils and eventually percolating into groundwater.

The silty clay till present on-Site is of low hydraulic conductivity and is anticipated to retard downward contaminant migration. The uranium concentration in the soil sample submitted from the boreholes BH17-1N and BH17-3R were both 0.6 µg/g, which is 0.1 µg/g above the laboratory detection limit, indicating that there is not a significant contaminant source present in the soil, and there is no indication of an anthropogenic source of uranium in this area.Uranium is naturally occurring in soils and bedrock. Based on the lack of a potential source of contamination (no PCA identified relevant to uranium), the lack of contaminant

mass in soil, and the low permeability soils on-site, it is the opinion of the QP_{ESA} that the elevated concentration of uranium in groundwater in MW1D-17 is naturally occurring, and not contamination, as defined under the Environmental Protection Act.

Based on these considerations, it is the opinion of the QP_{ESA} that as of the certification date of November 27, 2018, the soil and groundwater site condition standards for the remaining soil and groundwater on-Site have been met.

I. Description and Assessment of:

A. Areas where potentially contaminating activity has occurred

A total of four (4) PCAs were identified in the Phase One ESA. A summary of the PCAs considered to be contributing to APECs on the Property is provided in the table below.

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#40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	Historical use of the Property for agricultural purposes	Yes – APEC1
2	PCA#30: Importation of Fill Material of Unknown Quality	Fill material is anticipated in the vicinity of the historical residential home, storage buildings, and communication tower.	Yes – APEC 2
3	PCA#28: Gasoline and Associated Products Storage in Fixed Tanks	Historical presence of a generator used to service the historical communication tower.	Yes – APEC 3

B. Areas of potential environmental concern

A total of three (3) APECs were identified to be present on the Phase Two Property through the completion of the Phase One ESA. A summary of the APECs identified, and the associated PCOCs is provided in the table below.

Summary of APECs identified on the Property

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC-1	On-site	PCA#40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents)	On Site	OC Pesticides	Soil and Ground water

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
		Manufacturing, Processing, Bulk Storage and Large-Scale Applications - Historical use of the Property for agricultural purposes			
APEC-2	Southeast portion of the Property	PCA#30 Importation of Fill Material of Unknown Quality - Inferred presence of fill material on-Site,	On Site	PHCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR	Soil
APEC-3	Within the vicinity of the historical communication tower on the southeast portion of the site.	PCA#28 Gasoline and Associated Products Storage in Fixed Tanks - Historical use of the portion of the Property for Roger Cell Tower	On Site	PHC (F1-F4), BTEX	Soil and Ground water

The following soil and groundwater samples were submitted for chemical analysis to assess the APECs identified on the Property,.

Summary of APEC Investigation

APEC	Description	PCOCs	Media	Borehole Within APEC	Samples Analysed	Parameter Analyzed
APEC-1	PCA#40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	OC Pesticides	Soil	BH17-3R	SS-3	OCPs
				BH17-5R	SS-2	OCPs
				BH17-AR	SS-2	OCPs
				BH17-1T	SS-3	OCPs
			Groundwater	MW17-1T	-	OCPs
				DUP-1	-	OCPs
				MW 1D-17	-	OCPs
				MW17-7R	-	OCPs
				MW17-1R	-	OCPs
APEC-2	PCA# 30 - Importation of Fill Material of Unknown Quality	Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high	Soil	BH17-1T	SS-2	PHCs and BTEX
					SS-3	M&I
				BH17-2T	SS-2	M&I
					SS-3	PHCs and BTEX

APEC	Description	PCOCs	Media	Borehole Within APEC	Samples Analysed	Parameter Analyzed
		pH, SAR, PHCs, BTEX		BH17-AT	SS-2	M&I
				BH17-3T	SS-2	M&I, PHCs and BTEX
				BH17-BT	SS-2	PHCs and BTEX
				TP3r	GS1	PHCs and BTEX
					GS0Dup	PHCs and BTEX
				TP4r	GS1	PHCs and BTEX
				TP6r	GS1	PHCs and BTEX
				TP8r	GS2	M&I
				TP9r	GS2	PHCs and BTEX
				TP10r	GS1	PHCs and BTEX
					GS0Dup	PHCs and BTEX
				TP11r	GS1	M&I
				TP12r	GS1	M&I
APEC-3	Historical use of the Property for a Rogers Communication Tower with backup generator	PHCs and BTEX	Soil	BH17-1T	SS2	PHCs and BTEX
				BH17-2T	SS3	PHCs and BTEX
				BH17-3T	SS-2	PHCs and BTEX
				BH17-BT	SS-2	PHCs and BTEX
				TP3r	GS1	PHCs and BTEX
					GS0Dup	PHCs and BTEX
				TP4r	GS1	PHCs and BTEX
				TP6r	GS1	PHCs and BTEX
				TP9r	GS2	PHCs and BTEX
				TP10r	GS1	PHCs and BTEX
					GS0Dup	PHCs and BTEX
			Groundwater	BH17-1T	-	PHCs and VOCs
				BH17-2T	-	PHCs and VOCs
				BH17-3T	-	PHCs and VOCs

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

Underground utilities were not identified at the Property, all of the former structures had been demolished prior to this assessment. It is anticipated that the historical house was serviced by a septic system. It is not anticipated that any historical utilities present would have acted as preferential pathways for contaminant transport based on the location of the soil impacts identified relative to the location of the former house. The soil impacts were determined to be localized shallow soil impacts, there is no indication of contaminant migration.

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 surficial layer of topsoil approximately 125 to 300 mm thick was encountered in boreholes BH17-1R to BH17-7R and BH17-1N to BH17-3N. Underlaying this was a fill layer in boreholes BH17-1T, BH17-2T, and BH17-3T extending approximately 1.5 to 3.1 mbgs or, in the remaining boreholes, a weathered/disturbed layer of native clayey silt approximately 0.4 to 0.8 mbgs. This was underlain by a silty clay till which was found in all the boreholes, except BH17-1T & BH17-2T. This layer extended until bedrock. Shale bedrock was encountered in all boreholes and range between 1.5 to 4.6mbgs with corresponding elevations of 171.1 and 172.8 masl.

Summary of Geologic Units Investigated

Geologic Unit	Inferred Thickness (m)	Top Elevation (masl)	Bottom Elevation (masl)	Properties
Topsoil	0.13-0.30	177.2	173.09	
Fill Material	0.79-3.1	174.87	171.3	Clayey silt to silty clay, trace to some organics, wood pieces, trace shale fragments
Clayey Silt	0.6-1.0	177.1	173.1	Some sand, reddish brown.
Silty Clay Till	0.5-3.8	176.4	171.1	Water bearing formation, some

Geologic Unit	Inferred Thickness (m)	Top Elevation (masl)	Bottom Elevation (masl)	Properties
				sand, trace gravel, occasional cobble/boulder
Shale Bedrock	-	172.8	-	Queenston Formation

A visual representation of the stratigraphy investigated is presented on the cross-sections provided in Figures 9 and 10.

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

The groundwater table was generally encountered within the silty clay till and weathered bedrock. This groundwater unit is considered to be an unconfined aquifer.

Based on the groundwater elevations calculated, the groundwater flow direction is interpreted to be southeasterly towards a tributary of Sixteen Mile Creek. The groundwater elevation contours and flow direction are presented on Figure 5.

The horizontal hydraulic gradient was calculated based on the groundwater levels recorded on July 31, 2018.

Summary of Horizontal Hydraulic Gradient Calculations

Hydrogeological Unit	Calculated Horizontal Hydraulic Gradient
Overburden – (silty clay till)	Minimum:0.0060 Average: 0.0061 Maximum:0.0066

The vertical hydraulic gradient was calculated based on the groundwater levels recorded on July 31, 2018.

Summary of Vertical Hydraulic Gradient Calculations

Monitoring Well Nest	Calculated Vertical Hydraulic Gradient
MW1S-17 MW1D-17	0.7546 (downward)

C. Depth to bedrock

Shale bedrock was encountered in all boreholes and range between 1.5 to 4.6mbgs with corresponding elevations of 171.1 and 172.8 masl.

D. Approximate depth to water table

A total of ten (10) groundwater monitoring events were completed between July 2017 and July 2018. The depth to groundwater was found to range between 2.75 to 5.08 mbgs on January 9, 2018, and between 2.18 to 3.75 mbgs on July 31, 2018.

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

The pH values measured between 6.41 and 7.79, which are within the acceptable limits for non-sensitive sites. A natural heritage feature was identified on the Property, as such the Site is considered to be environmentally sensitive.

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

Approximately 20 cubic metres of soil was imported to the Property on November 28, 2018 to backfill remedial excavations TP1 and TP2. The chemical quality of the fill material was assessed on November 27, 2018 through the collection of three (3) soil samples which were analysed for metals and ORPs, PHCs, BTEX and OC Pesticides. All of the samples met the MECP Table 1 SCS. The imported soil was placed within the footprints of the remedial excavations, which is presented on Figures 8A and 8B.

G. Approximate locations, if known, of any proposed buildings and other structures

Redevelopment of the Property for residential purposes has been proposed. It is DS' understanding that the development will consist of a residential subdivision. Additional details regarding the location of the homes were not available at this time.

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

Soil impacted with PHCs (incl. BTEX) were identified in test pit TP3R GS1 (benzene, toluene, ethylbenzene, xylene, PHC F1, PHC F2, and PHC F3) at a depth ranging from 0.0-0.4 mbgs. Impacts were also identified in test pit TP4r GS1 (toluene, ethylbenzene, xylene, PHC F1 and F2) from 0.0-0.6 mbgs.

The horizontal and vertical extent of the PHC impacts in soil was determined at the time of remedial excavation, completed on November 26, 2018. The horizontal extent of the PHC impacts in soil is depicted on Figures 8A and 8B. The vertical extent of the PHC impacts in soil is depicted on Figures 9A and 10A. The horizontal extent of the PHC impacts in soil was found to be contained within a 2-metre radius of TP3r and TP4r and found to extend to a maximum depth of 1.5 mbgs.

B. The contaminants associated with each of the areas

A visual representation of the location of the impacts identified, including the individual contaminants associated with the impacted areas, and the remedial activities in the vicinity of impacted areas is presented in Figures 6B, 8A, and 8B.

TP3r – Remedial Excavation TP2

The contaminants identified at concentrations greater than the applicable SCS included: benzene, toluene, ethylbenzene, xylenes (total), PHC F1-BTEX, PHC F2 and PHC F3.

TP4r – Remedial Excavation TP1

The contaminants identified at concentrations greater than the applicable SCS included: toluene, ethylbenzene, xylenes (total) and PHCs F1-BTEX.

C. Medium that contaminants were identified in

Contaminants were identified at concentrations in excess of the MECP Table 1 SCS in soil. All of the groundwater samples analysed met the MECP Table 1 SCS.

D. Description and assessment of what is know about each of the areas

PHC impacts were identified in the shallow fill material located in the southeastern portion of the Site in test pits TP3r and TP4r. Mixed fill material was identified within this portion of the site and is inferred to have been placed to raise the grade of the ground surface. The PHC impacts were limited both in the horizontal and vertical extent. The results of the confirmatory sampling verified that the vertical extent of the impacts was 1.5 mbgs, and the horizontal extent was found to be limited within a 4.5 m^2 area. The results of the groundwater sampling conducted in the nearby downgradient monitoring wells BH17-3T and BH17-2T indicated non-detectable concentrations of PHCs and BTEX, thereby confirming that the contaminants have not affected the groundwater quality on the Property.

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

The horizontal extent of the PHC impacts in soil is depicted on Figures 6B, 8A, and 8B. The vertical extent of the PHC impacts in soil is depicted on Figures 9A, 9B, 10A and 10B. In general, the PHC impacts were determine to be contained within a 4.5 m^2 area around TP3r and TP4r, and extended to a maximum depth of 1.5 mbgs.

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

Fill material was historically imported to the Property. The fill material was observed to contain brick, wood, and other deleterious materials. The PHC impacts identified are attributed to the placement of fill material of unknown quality. It is possible that the surficial impacts identified were the result of minor isolated spills of gasoline/diesel from jerry-cans used to refuel small equipment on-Site.

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**

The native soils on the Property are of low permeability and will tend to inhibit the migration of contaminants.

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.

Underground utilities were not identified at the Property. It is anticipated that underground utilities including a septic system and domestic water service were previously present in the southeastern corner of the Property, in the vicinity of the former house (refer to Figure 2). It is not anticipated that any historical utilities present would have the potential to act as preferential pathways for contaminant transport.

No exceedances of the Table 1 SCS for PHCs were identified in groundwater, as such there is no indication of the migration of the PHC impacts identified in TP3r and TP4r. The results of the confirmatory sampling conducted verified that there is no indication of migration of contaminants.

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

The groundwater levels on-Site were found to fluctuate up to 1.33 mbgs between winter and summer groundwater monitoring events. The soil impacts were identified within the upper 0.6 m of soil (unsaturated zone), as such it is unlikely that seasonal fluctuations in groundwater levels have affected contaminant distribution. Based on the results of the confirmatory soil samples there is no indication of contaminant migration.

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

All of the impacted soils have been remediated through excavation and off-site disposal. Vapour intrusion is not considered to be of concern 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. 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

B. Approximate depth to water table

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

D. Any subsurface structures and utilities that may affect contaminants distribution and transport

Cross-sections depicting this content have been prepared, refer to Figures 9, 9A, 9B, 10, 10A, and 10B.

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**

Figures depicting this content have been prepared. A summary of the pre-remediation conditions is provided in Figure 11A. A summary of the post-remediation conditions is provided in Figure 11B.