

# PHASE II ENVIRONMENTAL SITE ASSESSMENT

590 Argus Road, Oakville, Ontario

#### Client

Mr. Cory Capland Distrikt Capital Corporation 1-90 Wingold Avenue Toronto, Ontario M6B 1P5

## **Project Number**

BIGC-ENV-554C

## **Prepared By:**

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## **Date Submitted**

October 4, 2022

# **Executive Summary**

B.I.G. Consulting Inc. (BIG) was retained by Mr. Cory Capland on behalf of Distrikt Capital Corporation (Client), to complete a Phase II Environmental Site Assessment (ESA) at the property located at 590 Argus Road, Oakville, Ontario (Site). It is BIG's understanding that the Phase II ESA is required for due diligence purposes and that a Record of Site Condition (RSC) is not required at this time.

This Phase II ESA was conducted in accordance with CSA Standard Z769-00 (R2018) and with generally accepted professional practices. The objective of the Phase II ESA was to obtain soil and groundwater data to characterize the Site.

The results and findings of the Phase II ESA conducted at the Site are summarized as follows:

- 1. The general stratigraphy at the Site, as observed in the boreholes, consisted of asphalt at the ground surface followed by fill material, underlain by highly weathered shale bedrock.
- 2. Based on the textural descriptions of these materials as inferred from borehole observations, the applicable SCS selected to evaluate analytical data was determined to be coarse textured.
- 3. The depth to groundwater across the site ranged between 2.92 m bgs to 4.55 m bgs on May 31, 2022.
- 4. The soil analytical results from the samples collected and submitted for analysis of PAHs, metals and inorganics indicated that all parameters were detected at concentrations below the applicable Ontario Ministry of Environment, Conservation and Parks (MECP) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition for Residential/Parkland/Institutional Property Use and coarse textured soil (Table 6 SCS), with the exception of:

Soil Sample ID	Identified Impact	MECP Table 6 Standard (μg/g)	Maximum Impact Concentration (μg/g)	Impact Depth (m bgs)
BH2-SS1	Copper	140	190	0.0 - 0.61

5. The groundwater analytical results from the sample collected and submitted for PHCs, BTEX and VOCs indicated that all parameters were detected at concentrations below the applicable MECP Table 6 SCS.

#### **Conclusions and Recommendations**

As a result of this Phase II ESA, further delineation of the copper impact identified in soil is required. The copper soil impact identified on-Site is present within the surficial soil at the Site and is likely localized. The impacted soil will be excavated and disposed of off-Site at a registered landfill facility. As the Site is intended for residential development, an RSC will be required in the future.



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## 1 Introduction

B.I.G. Consulting Inc. (BIG) was retained by Mr. Cory Capland on behalf of Distrikt Capital Corporation (Client), to complete a Phase II Environmental Site Assessment (ESA) at the property located at 590 Argus Road, Oakville, Ontario (Site). It is BIG's understanding that the Phase II ESA is required for due diligence purposes and that a Record of Site Condition (RSC) is not required at this time.

This Phase II ESA was conducted in general accordance with CSA Standard Z769-00 (R2018) and in accordance with generally accepted professional practices. Subject to this standard of care, BIG makes no express or implied warranties regarding its services, and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 7.

The objective of the Phase II ESA was to obtain soil and groundwater data to characterize the Site.

## 1.1 Site Description

The Site is located north of Argus Road and to the west of South Service Road East in Oakville, Ontario as shown on Figure 1. The Site measures approximately 15,500 m² and is currently occupied by a commercial building (Site building). The Site building has a footprint of approximately 3,500 m², occupying approximately 23 % of the Site. The areas surrounding the Site buildings are covered with asphalt with landscaping along the northern and southern property boundaries. It is BIG's understanding that the Site is to be redeveloped with three (3) high-rise residential condominium buildings and is anticipated to have six (6) to seven (7) levels of underground parking.

The Site is bound to the north by South Service Road East followed by the QEW, to the east by commercial land use followed by South Service Road East, to the south by Argus Road followed by commercial properties, and to the west by commercial properties. A Site Plan is provided as Figure 1.

## 1.2 Current and Proposed Future Uses

At the time of the Phase II ESA investigation the Site was occupied by one (1) commercial building. The future proposed use is to redevelop the Site with three (3) high-rise residential condominium buildings and is anticipated to have six (6) to seven (7) levels of underground parking.

## 1.3 Applicable Site Condition Standards

Analytical results obtained for soil and groundwater samples were assessed against Site Condition Standards (SCS) as established under subsection 169.4(1) of the Environmental Protection Act and presented in the Ontario Ministry of the Environment, Conservation and Parks (MECP) document "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act'*, (SGWS Standards). Tabulated background SCS applicable to environmentally sensitive sites and effects based generic SCS applicable to non-environmentally sensitive sites are provided in the SCS. The effects based SCS are protective of human health and the environment for different groundwater conditions (potable and non-potable), land use scenarios (residential, parkland, institutional, commercial, industrial, community and agricultural/other), soil texture (coarse or medium/fine) and restoration depth (full or stratified).

Application of the generic or background SCS to a specific site is based on consideration of site conditions related to soil pH, thickness and extent of overburden material and proximity to an area of environmental sensitivity or of natural significance for some chemical constituents, consideration is also given to soil textural classification with SCS having been derived for both coarse and medium-fine textured soil conditions.



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For assessment purposes, BIG selected the MECP Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition for Residential/Parkland/Institutional Property Use and coarse textured soil (Table 6 SCS). The selection of this category was based on the following factors:

- a) Less than two-thirds of the Site has an overburden thickness greater than 2 m.
- b) The Site is not located within 30 metres (m) of a surface water body or an area of natural significance.
- c) The soil at the Site has pH value between 5 and 9 for surficial soils; and, between 5 and 11 for subsurface soils.
- d) The property is not within an area of natural significance; does not include, nor is it adjacent to an area of natural significance, nor is it part of such an area; and, it does not include land that is within 30 m of an area of natural significance, nor is it part of such an area.
- e) The Site is supplied by the municipal drinking water system; however, the Site is considered potable.
- f) The intended future use of the Site is residential.
- g) Based on review of the borehole logs, coarse textured standards were applied as part of this Phase II ESA.
- h) There was no intention to carry out a stratified restoration at the Site.



# 2 Background Information

## 2.1 Physical Setting

The following physiographic, geological and soil maps were reviewed as part of this Phase II ESA:

- a) Atlas of Canada Toporama Topographic Map (Toporama)
- b) Ontario Base Map (OBM)
- c) Ontario Ministry of Energy, Northern Development and Mines website, Bedrock Geology of Ontario, 2011 – MRD 126; and Paleozoic Geology of Southern Ontario, 2007 – MRD 219 (KML format)
- d) Ontario Ministry of Energy, Northern Development and Mines website, Surficial Geology of Southern Ontario, 2010. (KML format)
- e) Ontario Ministry of Energy, Northern Development and Mines website, Physiography of Southern Ontario 2007 (KML format)

Based on the review of the above maps, the following information was obtained:

- a) The Site is at an elevation of approximately 105 m above sea level (asl), generally at the same elevation as the surrounding properties to the east and west of the Site. The surrounding properties located to the north are generally at higher elevations than the Site, and the surrounding properties to the south are generally at lower elevations than the Site.
- b) No water bodies are located on the Site. The nearest water body is Sixteen Mile Creek located approximately 530 m southwest of the Site and Lake Ontario is located approximately 2.3 km southeast of the Site.
- c) The bedrock in the general area of the Site consists of shale, limestone, dolostone and siltstone and is part of the Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member and Eastview Member.
- d) The surficial geology of the Site is described as Paleozoic bedrock.
- e) The physiography of the Site is within the Iroquois Plains characterized as shale plains.

## 2.2 Past Environmental Investigations

The following reports were available for the Site at the time of this Phase II ESA for BIG review:

- a) BIG (2022a) Memo Findings of Preliminary Geotechnical Investigation, 590 Argus Road, Oakville, Ontario. B.I.G. Consulting Inc. June 15, 2022.
- b) BIG (2022b) Memo Preliminary Findings of Hydrogeological Investigation, 590 Argus Road, Oakville, Ontario. B.I.G. Consulting Inc. June 22, 2022.

BIG (2022a) Memo – F	BIG (2022a) Memo – Findings of Preliminary Geotechnical Investigation										
Objective Establish geological setting at the Site											
Program	<ul> <li>Advance eight (8) boreholes (BH1 to BH8) to depths ranging from 6.1 m to 7.7 m below existing grade (m bgs)</li> <li>Instrument five (5) boreholes with monitoring wells (BH/MW1, BH/MW3, BH/MW4, BH/MW6 &amp; BH/MW8).</li> </ul>										
Soil	The soil profile generally consisted of asphalt pavement overlying fill material which was underlain by highly weathered shale bedrock.										



BIG (2022b) Memo – Pr	BIG (2022b) Memo – Preliminary Findings of Hydrogeological Investigation										
Objective	Establish local hydrogeological settings.										
Program	<ul> <li>Advance eight (8) boreholes (BH1 to BH8) to depths ranging from 6.1 m to 7.7 m below existing grade (m bgs).</li> </ul>										
	<ul> <li>Instrument five (5) boreholes with monitoring wells (BH/MW1, BH/MW3, BH/MW4, BH/MW6 &amp; BH/MW8).</li> </ul>										
	Collect a round of water levels										
	Conduct single well response tests at selected monitoring wells										
Groundwater	<ul> <li>Water levels at the Site ranged from 2.92 m to 4.55 m below existing grade on May 31, 2022.</li> </ul>										
	• The estimate hydraulic conductivity ranges from 2.71 x $10^{-5}$ m/s to 5.87 x $10^{-8}$ m/s.										



# 3 Scope of the Investigation

## 3.1 Overview of Site Investigation

The objective of the Phase II ESA was to obtain soil and groundwater data to characterize the Site.

#### 3.1.1 Scope of Work

The scope of work for the Phase II ESA was as follows:

- a) Request public and private utility locating companies (e.g., cable, telephone, gas, hydro, water, sewer and storm water) to mark any underground utilities present at the Site;
- b) Advance a total of eight (8) boreholes (BH1 to BH8) up to a maximum depth of 7.7 m below ground surface (bgs);
- c) Instrument five (5) of boreholes as a monitoring wells (BH/MW1, BH/MW3, BH/MW4, BH/MW6 and BH/MW8);
- d) Collect representative soil samples for laboratory analysis of polycyclic aromatic hydrocarbons (PAHs), metals and inorganics;
- e) Develop the newly installed groundwater monitoring wells;
- f) Collect groundwater levels from the newly installed monitoring wells;
- g) Collect groundwater samples from newly installed monitoring wells for laboratory analysis of petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene and xylenes (BTEX), and volatile organic compounds (VOCs);
- h) Analyze the data and prepare a report of the findings.

## 3.2 Media Investigated

The focus of the Phase II ESA was on the environmental conditions of the overburden material and groundwater beneath the Site. As there was no surface water body on the Site, no sediment sampling was required.

A copy of the Site Sampling and Analysis Plan (SSAP) prepared for the Site is provided in Appendix A.

## 3.3 Impediments

The entire portion of the Site was accessible at the time of the investigation, and no physical impediments were encountered during the field investigation.



# 4 Investigation Method

#### 4.1 General

The Site investigative activities consisted of the drilling of eight (8) boreholes to facilitate the collection of soil samples for geologic characterization and laboratory analysis and, the installation of five (5) monitoring wells for the collection of groundwater samples for laboratory analysis.

Boreholes were advanced in the surficial fill and weathered bedrock by a licensed drilling company under the full-time supervision of BIG staff. The drilling equipment used to advance the boreholes is described below. No petroleum-based greases or solvents were used during drilling activities. Monitoring wells were installed in the boreholes by a MECP licensed well contractor in accordance with Ontario Regulation 903/90, as amended (O.Reg.903) using manufactured well components (i.e., riser pipes and screens) and materials (i.e., sand pack and grout) from documented sources.

## 4.2 Borehole Drilling

Prior to the commencement of drilling activities, the locations of underground utilities including fibre optic cable, telephone, natural gas, electrical lines, as well as water, sewer, storm water and sanitary lateral conduits were marked out by public locating companies and a private utility locator.

The fieldwork for the soil investigative portion of the Phase II ESA was carried out on May 25 and 26, 2022.

Boreholes were advanced by TCI Field Services under full-time supervision of BIG staff. A truck-mounted drill rig was used for the boreholes advanced at the Site. The boreholes were advanced to maximum depth of 7.7 m bgs at various on-Site locations to sufficiently assess and characterize the Site. The approximate locations of the boreholes and monitoring wells are shown on Figure 2.

BIG continuously monitored the drilling activities to record the physical characteristics of the soil, depth of soil sample collection and total depth of boreholes. Field observations are summarized on the borehole logs provided in Appendix B. Representative soil samples were recovered at regular intervals using a stainless-steel split spoon sampler in all boreholes.

## 4.3 Deviations from Sampling and Analysis Plan

The field investigative and sampling program was carried out following the requirements of the SSAP.

## 4.4 Soil Sampling

Soil samples for geologic characterization and laboratory analysis were collected on a discrete basis in the overburden materials using 5-centimetre (cm) diameter, 60 cm long, split spoon samples advanced in to the subsurface using a truck mounted drill rig. The soil cores were extruded from the samplers upon retrieval by drilling personnel. Geologic details of the recovered cores were logged by BIG field staff and samples were collected from selected cores for chemical analysis. Field observations are summarized on the borehole logs prepared from the field logs and provided in Appendix B.

Measures were taken in the field and during transport to preserve sample integrity prior to laboratory analysis. Recommended volumes of soil samples selected for laboratory analysis were collected from the recovered cores into pre-cleaned, laboratory-supplied glass sample bottles identified for the specified analytical test group. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontracted laboratory, Bureau Veritas (BV Labs) of Mississauga, Ontario. The samples were transported/submitted within acceptable holding times to BV Labs following Chain of Custody protocols for laboratory analysis.

Decontamination and other protocols were followed during sample collection and handling to minimize



the potential for sample cross-contamination. New disposable nitrile gloves were used for the handling and sampling of each retrieved soil core. Five (5) of the boreholes advanced were completed as monitoring wells (BH/MW1, BH/MW3, BH/MW4, BH/MW6 and BH/MW8).

Soil samples submitted for specific laboratory analysis were selected on the basis of visual inspection of the recovered cores, sample location and depth interval.

Geologic details of the soil cores recovered from the boreholes advanced at the Site are provided in the borehole logs presented in Appendix B.

#### 4.5 Groundwater: Monitoring Well Installation

Five (5) of the boreholes advanced at the Site were instrumented as groundwater monitoring wells (BH/MW1, BH/MW3, BH/MW4, BH/MW6 and BH/MW8). The monitoring wells were installed in general accordance with the Ontario Water Resources Act - R.R.O. 1990, Regulation 903/90 - amended to O. Reg. 128/03, and was installed by a licensed well contractor.

The monitoring wells consisted of a 3 m length, 50-millimetre (mm) diameter polyvinyl chloride (PVC) screen and an appropriate length of PVC riser pipe. All pipe connections were factory machined threaded flush couplings. The annular space around the well was backfilled with sand to an average height of 0.6 m above the top of the screen. A bentonite seal was added from the top of the sand pack to approximately 0.3 m bgs.

When the monitoring wells are no longer required, they must be decommissioned in accordance with the procedure outlined in the Ontario Water Resources Act - R.R.O. 1990, Regulation 903 - amended to O. Reg. 128/03.

Measures taken to minimize the potential for cross contamination or the introduction of contaminants during well construction included:

- a) The use of well pipe components (e.g. riser pipe and well screens) with factory machine threaded flush coupling joints;
- b) Construction of wells without the use of glues or adhesives;
- c) Removing the protective plastic wraps from well components at the time of borehole insertion to prevent contact with the ground and other surfaces; and,
- d) Cleaning of augers between sampling locations.

#### 4.6 Monitoring Well Development

Upon completion of monitoring well installation, the new monitoring wells were developed to remove any fine sediment materials introduced during the drilling processes from within and around the sand pack to enhance hydraulic communication from the surrounding formation waters. The monitoring wells were developed on May 31, 2022 by using a groundwater pump and bailers to disturb the water column and recover groundwater containing dislodged sediment particles.

#### 4.7 Groundwater Monitoring

Groundwater monitoring activities, which consisted of measuring the depths to groundwater in each newly installed monitoring well, were conducted on the monitoring well network, so that groundwater flow and direction below the Site could be assessed and groundwater samples can be collected. These groundwater monitoring activities were conducted on May 31, 2022. Water levels were measured with respect to the top of casing by means of an electronic water level meter and recorded on water level log sheets or in a bound field notebook.



## 4.8 Monitoring Well Purging

Monitoring wells were purged prior to groundwater sample collection. Approximately three (3) well volumes of water were purged form each well to remove standing water and draw in fresh formation water. Water levels and wetted well volumes were determined by means of an electronic water level meter.

Equipment used during groundwater monitoring were thoroughly cleaned and decontaminated between wells. Well purging details were documented on a log sheet or in a bound hard cover notebook.

## 4.9 Groundwater Sampling

Upon completion of purging, all five (5) of the monitoring wells (BH/MW1, BH/MW3, BH/MW4, BH/MW6 and BH/MW8) were sampled on May 31, 2022 using dedicated polyethylene bailers. Recommended groundwater sample volumes were collected into laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. The samples were placed in an insulated cooler pre-chilled with ice immediately upon collection. The groundwater samples were transported to BV Labs under Chain of Custody protocols within 24 hours of sample collection or approved holding times.

## 4.10 Analytical Testing

All analytical testing was performed by BV Labs, an accredited laboratory under the Standards Council of Canada/Canadian Association of Environmental Analytical Laboratories (Accredited Laboratory No. 15025) in accordance with ISO/IEC 17025:2017 - "General Requirements for the Competence of Testing and Calibration Laboratories".

#### 4.10.1 Soil Sampling

Representative soil samples from each borehole were selected for laboratory analysis based on field screening results, sample location and depth interval. The requested laboratory analysis was based on the identified contaminants of concern. The representative soil samples selected for laboratory analysis and the requested analyses are summarized below.

Table 1: Summary of Soil Samples Submitted for Laboratory Analyses

Soil Sample ID	Requested Analyses	Date Sampled	Consultant
BH1-SS1	PAHs, Metals, and Inorganics	May 25, 2022	BIG
BH2-SS1	PAHs, Metals, and Inorganics	May 25, 2022	BIG
BH3-SS1	PAHs, Metals, and Inorganics	May 25, 2022	BIG
BH4-SS1	PAHs, Metals, and Inorganics	May 25, 2022	BIG
BH5-SS1	PAHs	May 26, 2022	BIG
BH5-SS2	Metals and Inorganics	May 26, 2022	BIG
BH6-SS1	PAHs, Metals, and Inorganics	May 26, 2022	BIG
BH7-SS1	PAHs, Metals, and Inorganics	May 26, 2022	BIG
BH8-SS1	PAHs, Metals, and Inorganics	May 26, 2022	BIG

#### 4.10.2 Groundwater Sampling

Representative groundwater samples were submitted for specific chemical analysis based on the identified contaminants of concern. The representative groundwater samples selected for lab analysis, the rationale for each sample, and the required analyses are summarized below.



**Table 2: Summary of Groundwater Samples Submitted for Laboratory Analyses** 

Monitoring Well ID	Requested Analyses	Well Screen Depth (m bgs)	Date Sampled	Consultant
D11/N4\A/1	PHCs, BTEX and VOCs	2 OF to 6 1	March 31, 2022	BIG
BH/MW1	VOCs	3.05 to 6.1	September 30, 2022	BIG
BH/MW3	PHCs, BTEX and VOCs	3.05 to 6.1	March 31, 2022	BIG
BH/MW4	PHCs, BTEX and VOCs	3.05 to 6.1	March 31, 2022	BIG
BH/MW6	PHCs, BTEX and VOCs	3.05 to 6.1	March 31, 2022	BIG
BH/MW8	PHCs, BTEX and VOCs	3.05 to 6.1	March 31, 2022	BIG

#### 4.11 Groundwater Levels

A summary of groundwater levels is provided below.

**Table 3: Summary of Groundwater Levels and Elevations** 

	Cround Flouration	Wall Danth	May 31, 2022						
Well ID	Ground Elevation (m asl)	Well Depth (m bgs)	Water Level (m bgs)	Elevation (m asl)					
BH/MW1	104.45	6.1	3.90	100.55					
BH/MW3	104.84	6.1	3.37	101.47					
BH/MW4	105.05	6.1	3.44	101.61					
BH/MW6	105.36	6.1	2.92	102.44					
BH/MW8	105.12	6.1	4.55	100.57					

## 4.12 Quality Assurance and Quality Control Measures

Quality Assurance/Quality Control (QA/QC) measures, as set out in the SSAP, were implemented during sample collection, storage and transport to provide accurate data representative of conditions in the surficial fill and upper overburden soils and the water table aquifer. The QA/QC measures included decontamination procedures to minimize the potential for sample cross contamination, the execution of standard operating procedures to collect representative and unbiased samples, the collection of quality control samples to evaluate sample precision and accuracy, and the implementation of measures to preserve sample integrity.

Decontamination protocols were followed during sample collection and handling to minimize the potential for cross-contamination. During the collection of soil samples, split-spoon samplers were scraped and decontaminated between sampling intervals by washing with a potable water/phosphate-free detergent solution followed by a rinse with potable water. New disposable nitrile gloves were used for the handling and collection of samples from each soil core and for sample collection from each borehole.

Soil samples selected for laboratory analyses were collected from the retrieved soil cores and placed into pre-cleaned, laboratory-supplied bottles. Sample volumes were consistent with analytical test group requirements as specified by the receiving laboratory.

Groundwater samples were collected into pre-cleaned laboratory-supplied bottles provided with analytical test group specific preservatives, as required. Recommended analytical test group specific sample volumes were collected as specified by the contractual laboratory. Sample vials for analysis of VOCs were inspected for the presence of gas bubbles and the presence of head space, where volatiles may partition into.



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Measures were followed to preserve sample integrity between collection and receipt by the laboratory. All samples, immediately upon collection were placed in insulated coolers pre-chilled with ice for storage and transport to the laboratory. Samples were received by the laboratory within specific analytical test group holding time requirements.

Documentation procedures were followed to confirm sample identification and tracked sample movement. Each sample was assigned a unique identification ID number, which was recorded along with the date, time of sampling and requested analyses on labels affixed to the sampling containers, and in a bound field notebook. Chain of Custody protocols were followed to track sample handling and movement until receipt by the laboratory.

For deviations from the SSAP, please see section 4.3.



## 5 Review and Evaluation

## 5.1 Geology

The soil investigation conducted at the Site consisted of the advancement of eight (8) boreholes into the surficial material and the underlying native materials to a maximum depth of 7.7 m bgs. Borehole logs describing geologic details of the soil cores recovered during the Site drilling activities are presented in Appendix B. Boundaries of soil indicated on the log sheets are intended to reflect transition zones for the purpose of environmental assessment and should not be interpreted as exact planes of geological change.

The general stratigraphy at the Site, as observed in the boreholes, consisted of asphalt at the ground surface followed by fill material, and then by highly weathered shale bedrock. A brief description of the soil stratigraphy at the Site, in order of depth, is summarized in the following sections.

#### 5.1.1 Surficial Material

Asphalt was present at the ground surface of all eight (8) boreholes advanced at the Site. The asphalt layer ranged in depth from 50 mm to 70 mm underlain by granular material ranging in thickness from 100 mm to 120 mm.

#### 5.1.2 Fill

Beneath the ground surface covers at all borehole locations, fill material consisting of sand and gravel, silty clay/clayey silt was encountered. The fill material extended to depths varying from 0.76 m to 1.52 m bgs.

#### 5.1.3 Bedrock

Bedrock was observed below the fill material at all boreholes advanced at the Site. Highly weathered shale was observed from approximately 0.76 m to 1.52 m bgs.

#### 5.2 Soil Texture

The fill material encountered are comprised of sand and gravel, clayey silt/silty clay. Based on the textural descriptions of these materials as inferred from borehole observations, the applicable SCS selected to evaluate analytical data was determined to be for coarse textured soil classification.

## 5.3 Soil Quality

In accordance with the scope of work, chemical analyses were performed on selected soil samples recovered from the boreholes. The selection of representative "worst case" soil samples was based on field screening, visual and/or olfactory evidence of impacts, and the presence of potential water bearing zones. Analytical results summary tables are provided in Appendix C and copies of the laboratory Certificates of Analysis for the analyzed soil samples are provided in Appendix D.

#### 5.3.1 PAHs

The soil samples submitted for PAHs analysis indicated that all parameters were detected at concentrations below the applicable MECP Table 6 SCS and all laboratory RDLs were below the applicable SCS.



#### 5.3.3 Metals and Inorganics

The soil samples submitted for metals and inorganics analysis indicated that all parameters were either non-detect or were detected at concentrations below the applicable MECP Table 6 SCS and all laboratory RDLs were below the applicable SCS, with the exception of:

Soil Sample ID	Identified Impact	MECP Table 6 Standard (μg/g)	Impact Concentration (µg/g)	Impact Depth (m bgs)
BH2-SS1	Copper	140	190	0.0 - 0.61

#### 5.3.4 EC and SAR

The soil samples submitted for EC and SAR analysis indicated that these parameters were detected at concentrations above the MECP Table 6 SCS:

Parameter	MECP (2011a) Table 6 SCS	Number of Soil Samples Submitted	Number of Soil Samples Exceeding the applicable SCS	Maximum concentration detected
Electrical conductivity	0.7 mS/cm	8	5	1.3 mS/cm
SAR	5.0	8	4	18

Electrical conductivity (EC) and sodium adsorption ratio (SAR) were detected in soil in exceedance of the applicable MECP Table 6 SCS. However, under the newly amended O.Reg.153/04 (O.Reg.407/19) Section 49.1 (1), if a substance has been applied to surfaces for the safety of vehicular or pedestrian traffic under the conditions of snow or ice or both (i.e., application of de-icing salts), its related parameters are not deemed to be in exceedance of the MECP Table 6 SCS. As de-icing salts were used at the Site, EC and SAR are not considered to be contaminants of concern.

#### 5.3.5 Evidence of Non-Aqueous Phase Liquid

Inspection of the soil cores retrieved from the boreholes did not indicate the presence of non-aqueous phase liquid (NAPL), staining or sheen.

## 5.4 Groundwater Quality

Representative groundwater samples were collected from the newly installed monitoring wells to assess groundwater quality at the Site. Evidence of free product (i.e., visible film or sheen), and odour was not observed during well purging.

Analytical results summary tables are provided in Appendix C and copies of the laboratory Certificates of Analysis for the analyzed groundwater samples are provided in Appendix D.

#### 5.4.1 PHCs

The groundwater samples submitted for PHCs analysis indicated that all parameters were detected at concentrations below the applicable MECP Table 6 SCS and all laboratory RDLs were below the applicable SCS.

#### 5.4.2 BTEX

The groundwater samples submitted for BTEX analysis indicated that all parameters were detected at concentrations below the applicable MECP Table 6 SCS and all laboratory RDLs were below the applicable SCS.



#### 5.4.3 **VOCs**

The groundwater samples submitted for VOCs analysis indicated that all parameters were detected at concentrations below the applicable MECP Table 6 SCS and all laboratory RDLs were below the applicable SCS.

It should be noted that benzene was detected in exceedance of the Table 6 SCS at BH/MW1 with a concentration of 1.1  $\mu$ g/L above the standard of 0.5  $\mu$ g/L on May 31, 2022. Monitoring well BH/MW1 was resampled on September 30, 2022 and benzene was non-detect, as such the benzene exceedance was non-reproducible and was likely attributed to the presence of sediment in the sample.

#### 5.4.4 Evidence of Non-Aqueous Phase Liquid

Inspection of the purged groundwater retrieved from the monitoring wells did not indicate the presence of non-aqueous phase liquid (NAPL), staining or sheen.

## 5.5 Quality Assurance and Quality Control (QA/QC) Measures

QA/QC measures were taken during the field activities to meet the objectives of the sampling and QA plan to collect unbiased and representative samples to characterize existing conditions in the fill/upper overburden materials and water table aquifer unit at the Site. QA/QC measures included:

- a) The collection of soil samples following standard operating procedures;
- b) The implementation of decontamination procedures to minimize the potential for sample cross contamination;
- c) The collection of recommended analytical test group specific volumes into pre-cleaned laboratory supplied containers provided with necessary preservatives as required;
- d) Sample preservation in insulated coolers pre-chilled with ice and meeting holding time requirements; and,
- e) Sample documentation including Chain of Custody protocols.

Review of field activity documentation indicated that recommended sample volumes were collected from soil and groundwater for each analytical test group into appropriate containers and preserved with proper chemical reagents in accordance with the protocols set out in the "Protocol for Analytical Methods used in the Assessment of Properties under Part XV.1 of the *Environmental Protection Act'*, dated March 9, 2004, as amended July 1, 2011. Samples were preserved at the required temperatures in pre-chilled insulated coolers and met applicable holding time requirements, when relinquished to the receiving laboratory.

The subcontracted laboratory used during this investigation, BV Labs, is accredited by the Standards Council of Canada/Canadian Association for Laboratory Accreditation (Accredited Laboratory No. 15025), in accordance with ISO/IEC 17025:2017 - "General Requirements for the Competence of Testing and Calibration Laboratories" for the analysis of all parameters for all samples in the scope of work for which SCS have been established under O.Reg.153/04.

Certificates of Analysis were received from BV Labs reporting the results of all the chemical analyses performed on the submitted soil and groundwater samples. Copies of the BV Labs Certificates of Analysis are provided in Appendix D. A review of the Certificates of Analysis prepared by BV Labs indicates that they were in compliance with the requirements set out under subsection 47(3) of O.Reg.153/04.

The analytical program conducted by BV Labs included analytical test group specific QA/QC measures to evaluate the accuracy and precision of the analytical results and the efficiency of analyte recovery during solute extraction procedures. The laboratory QA/QC program consisted of the preparation and analysis



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of laboratory duplicate samples to assess precision and sample homogeneity, method blanks to assess analytical bias, spiked blanks and QC standards to evaluate analyte recovery, matrix spikes to evaluate matrix interferences and surrogate compound recoveries (VOCs only) to evaluate extraction efficiency. The laboratory QA/QC results are presented in the Quality Assurance Report provided in the Certificate of Analysis prepared by BV Labs. The QA/QC results are reported as percent recoveries for matrix spikes, spike blanks and QC standards, RPDs for laboratory duplicates and analyte concentrations for method blanks.

The BV Labs QA/QC results were assessed against test group control limits in the case of spiked blanks, matrix spikes and surrogate recoveries and alert criteria in the case of method blanks and laboratory duplicates. Review of the laboratory QA/QC results reported by BV Labs indicated that they were within acceptable control limits or below applicable alert criteria for the sampled media and analytical test groups. Based on the assessment of the QA/QC, the analytical results reported by BV Labs are of acceptable quality and data qualifications were not required.



# 6 Summary of Findings

The results and findings of the Phase II ESA conducted at the Site are summarized as follows:

- 1. The general stratigraphy at the Site, as observed in the boreholes, consisted of asphalt at the ground surface followed by fill material, underlain by highly weathered shale bedrock.
- 2. Based on the textural descriptions of these materials as inferred from borehole observations, the applicable SCS selected to evaluate analytical data was determined to be coarse textured.
- 3. The depth to groundwater across the site ranged between 2.92 m bgs to 4.55 m bgs on May 31, 2022.
- 4. The soil analytical results from the samples collected and submitted for analysis of PAHs metals, and inorganics indicated that all parameters were detected at concentrations below the applicable Ontario Ministry of Environment, Conservation and Parks (MECP) Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition for Residential/Parkland/Institutional Property Use and coarse textured soil (Table 6 SCS), with the exception of:

Soil Sample ID	Identified Impact	MECP Table 6 Standard (μg/g)	Maximum Impact Concentration (µg/g)	Impact Depth (m bgs)
BH2-SS1	Copper	140	190	0.0 - 0.61

5. The groundwater analytical results from the sample collected and submitted for PHCs, BTEX and VOCs indicated that all parameters were detected at concentrations below the applicable MECP Table 6 SCS.

#### **Conclusions and Recommendations**

As a result of this Phase II ESA, further delineation of the copper impact identified in soil is required. The copper soil impact identified on-Site is present within the surficial soil at the Site and is likely localized. The impacted soil will be excavated and disposed of off-Site at a registered landfill facility. As the Site is intended for residential development, an RSC will be required in the future.



# 7 General Limitations

The information presented in this report is based on field investigation activities completed by BIG and designed to provide information to support an assessment of the current environmental conditions at the Site. The conclusions and recommendations presented in this report reflect Site conditions existing at the time of the investigation.

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Yours truly,

**B.I.G.** Consulting Inc.

Rebecca Morrison, M.Env.Sc.

**Project Manager** 

Darko Strajin, P.Eng. Managing Partner



## 8 References

- 1. Canadian Standards Association. 2018. Z769-00 Phase II Environmental Site Assessment.
- 2. MECP (2011a) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*";
- 3. MECP (2011b) Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the *Environmental Protection Act*. PIBS 4696e01
- 4. NHIC (2017); Make a Natural Heritage Map. Retrieved from http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR\_NHLUPS\_NaturalHeritage& viewer=NaturalHeritage&locale=en-US
- 5. Topographic Map available at the Natural Resources Canada (NRC) website. Accessed online at http://atlas.nrcan.gc.ca/site/english/maps/topo/map

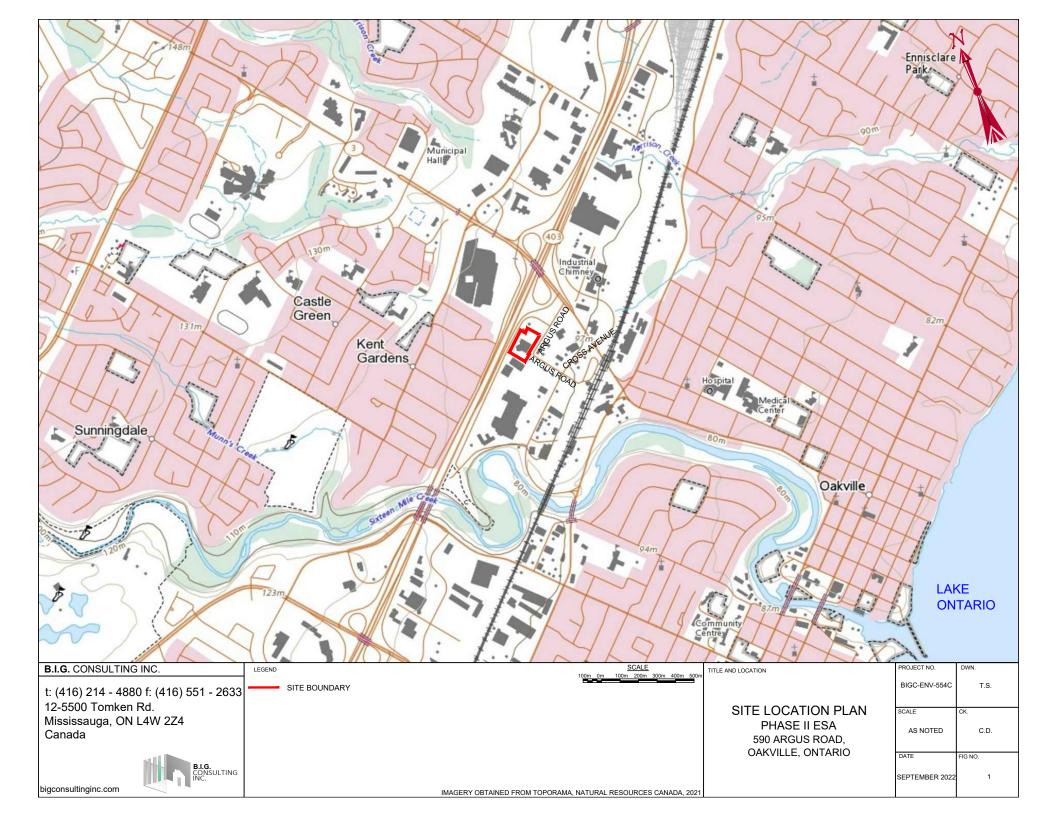
Previous environmental reports reviewed as part of this Phase II ESA:

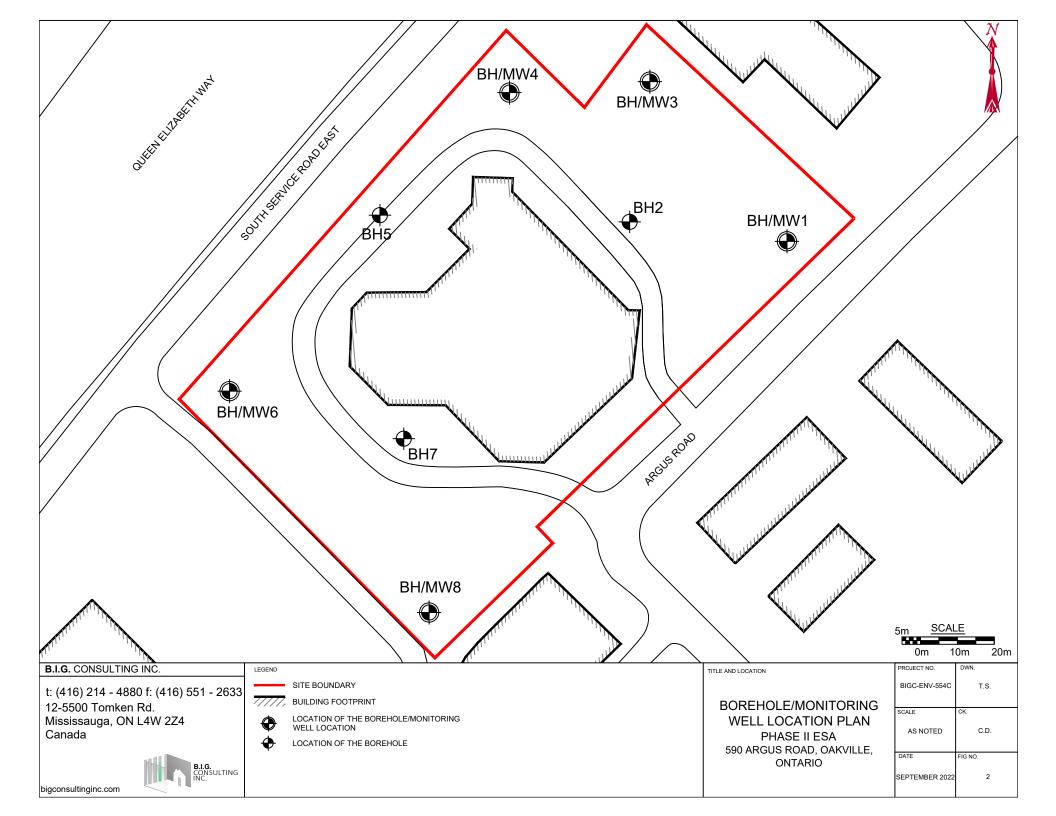
- a) BIG (2022a) Memo Findings of Preliminary Geotechnical Investigation, 590 Argus Road, Oakville, Ontario. B.I.G. Consulting Inc. June 15, 2022.
- b) BIG (2022b) Memo Preliminary Findings of Hydrogeological Investigation, 590 Argus Road, Oakville, Ontario. B.I.G. Consulting Inc. June 22, 2022.

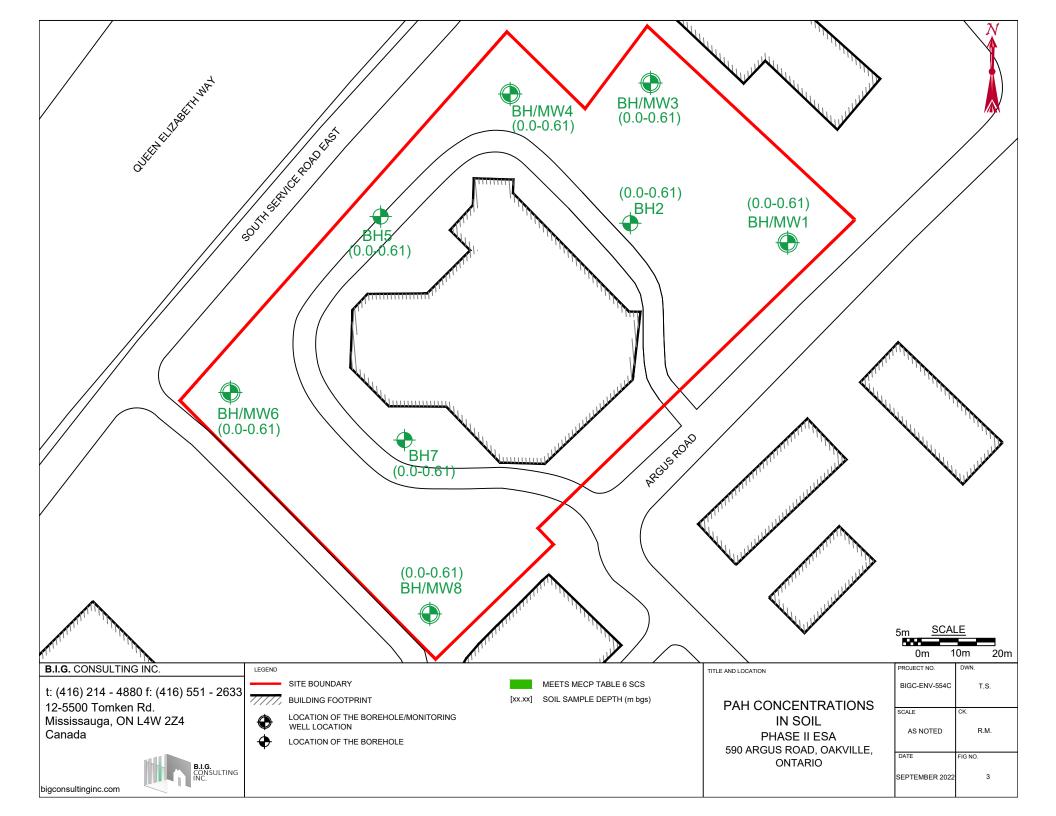


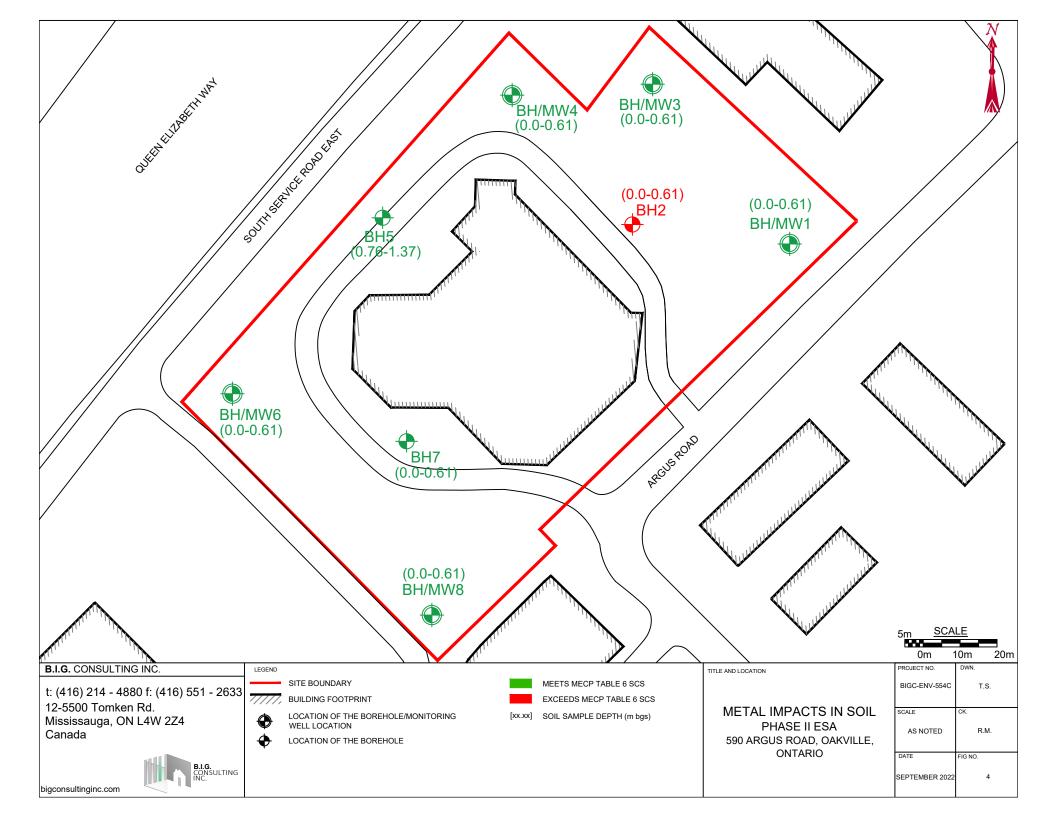
# **Figures**

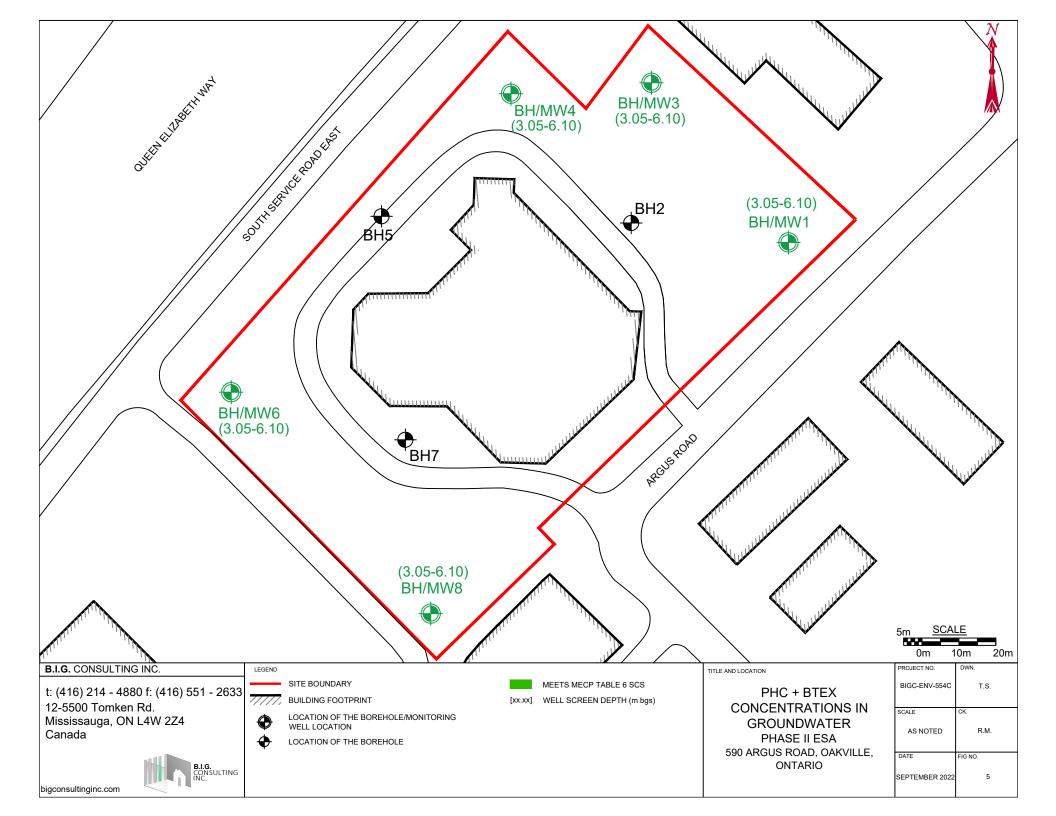


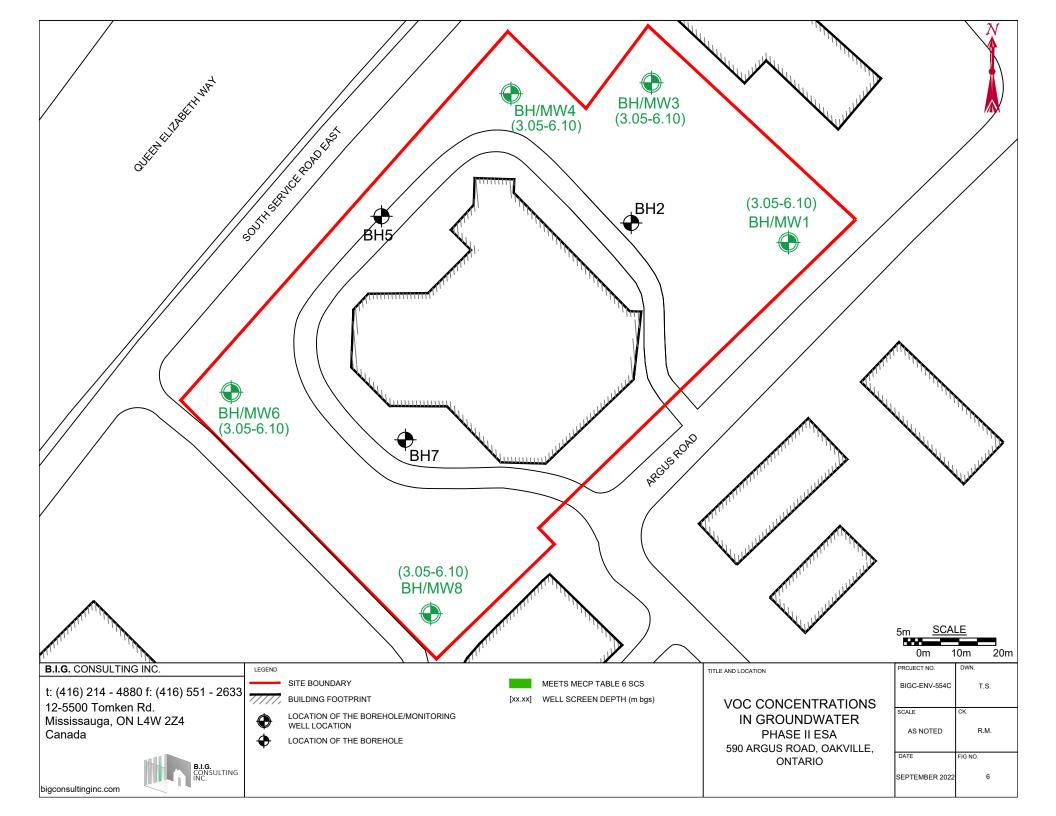












Appendix A: Site Sampling and Analysis Plan



## 1. Introduction

This appendix presents the Sampling and Analysis Plan (SAAP) that was developed in support of the Phase II Environmental Site Assessment (ESA), which will be conducted to provide further characterization of the Site subsurface conditions. The SAAP presents the procedures and measures that will be undertaken during field investigative activities to characterize the Site conditions and meet the data quality objectives of the Phase II ESA.

The SAAP presents the sampling program proposed for the Site, the recommended procedures and protocols for sampling and related field activities, the data quality objectives, and the quality assurance/quality control (QA/QC) measures that will be undertaken to provide for the collection of accurate, reproducible and representative data. These components are described in further detail below.

# 2. Field Sampling Program

The field sampling program was developed to provide for the collection of samples of the surficial and subsurface soil materials for chemical analysis of parameters identified as potential contaminants of concern identified in the Phase I ESA.

The soil samples will be collected from of the surficial fill and overburden material. The groundwater samples will be collected from each monitoring well.

The monitoring wells will be installed at selected boreholes to intercept the groundwater table aquifer. The monitoring wells will be installed with 3 m long screens extending to a maximum depth of approximately 6.1 m below grade.

Elevation of the boreholes and monitoring wells will be obtained through the completion of an elevation survey with reference to a Site temporary benchmark or a local geodetic benchmark. Groundwater flow will be determined through groundwater level measurements and the relative groundwater elevations established in the Site elevation survey.

## 3. Field Methods

To meet the requirements of the field sampling program, the following field investigative methods will be undertaken:

- a) Borehole Drilling;
- b) Soil Sampling;
- c) Monitoring Well Installation;
- d) Monitoring Well Development;
- e) Groundwater Level Measurements;
- f) Elevation Survey;
- g) Groundwater Sampling; and
- h) Residue Management Procedures.



The field investigative methods will be performed as described below:

#### a) Borehole Drilling

Boreholes will be advanced at the Site to facilitate the collection of soil samples for chemical analysis and geologic characterization and for the installation of groundwater monitoring wells. Boreholes will be advanced at the Site to a maximum depth of approximately 7.7 m below grade, within the overburden materials to provide for the collection of soil samples beneath the Site. The borehole locations will be selected to assess soil and groundwater quality at the Site.

Prior to borehole drilling, utility clearances will be obtained from public locators, as required. Boreholes will be advanced into the surficial fill and overburden soils by a drilling company under the full-time supervision of BIG staff. A truck mounted drilling machine equipped with solid stem augers, hollow stem augers and split spoons will be utilized to advance the boreholes through the overburden materials.

#### b) Soil Sampling

Soil samples for geologic characterization and chemical analysis will be collected from the overburden boreholes using 5 cm diameter, 60 cm long, stainless steel split-spoon sampling devices advanced ahead of the augers. The split-spoon samplers will be attached to drill rods and advanced into the soil by means of a machine-driven hammer. Spilt-spoon soil samples will be collected where possible, beginning at the ground surface and subsequently at continuous intervals. Geologic and sampling details of the recovered cores will be logged and the samples will be assessed for the potential presence of non-aqueous phase liquids. A portion of each soil sample will be placed in a sealed "zip-lock" plastic bag and allowed to reach ambient temperature prior to field screening with a photoionization detector (PID) that will be calibrated by the supplier with an appropriate reference gas and zeroed in ambient conditions prior to use. The vapour measurements will be made by inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These readings will provide a real-time indication of the relative concentration of volatile organic vapours encountered in the subsurface during drilling. Samples for chemical analysis will be selected on the basis of visual, combustible gas and olfactory evidence of impacts and at specific intervals to define the lateral and vertical extent of suspected impacts.

Recommended volumes of soil samples selected for chemical analysis will be collected into pre-cleaned, laboratory supplied, analytical test group specific containers. The samples will be placed into clean insulated coolers chilled with ice for storage and transport. Samples intended for VOC analysis will be collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes and sealed using Teflon lined septa lids. The samples will be assigned unique identification numbers, and the date, time, location, and requested analyses for each sample will be documented in a bound field notebook. The samples will be submitted to a CAEL certified laboratory within analytical test group holding times under Chain of Custody (COC) protocols. New disposable chemical resistant gloves will be used during the handling and sample collection for each soil core to prevent sample cross-contamination.

## c) Monitoring Well Installation

Monitoring wells will be installed in general accordance with Ontario Regulation 903/90, as amended and will be installed by a licensed well contractor.

The monitoring wells will be constructed using 50 mm diameter, Schedule 40, PVC riser pipe and number 10 slot size (0.25 mm) well screens. The base of the well screens will be sealed with PVC end caps. All well pipe connections will be factory machined threaded flush couplings. The pipe components will be prewrapped in plastic, which will be removed prior to insertion in the borehole to minimize the potential for



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contamination. No lubricants or adhesives will be used in the construction of the monitoring wells. The annular space around the well screens will be backfilled with silica sand to at least 0.3 m above the top of the screen. Granular bentonite will be placed in the borehole annulus from the top of the sand pack to approximately grade. The monitoring wells will be completed with protective casings.

## d) Monitoring Well Development

Monitoring wells will be developed to remove fine sediment particles potentially lodged in the sand pack and well screen to enhance contact with the surrounding formation groundwater and will be developed using dedicated bailers. Monitoring well development will be monitored by multiparameter water quality meter visual observations of turbidity, and by taking field measurements of pH and conductivity for every well volume removed. Standing water volumes will be determined by means of a water level meter. Water quality parameter measurements will be recorded using a multiparameter water quality meter. A minimum of approximately three (3) well volumes will be removed; and, well development will continue until the purged water has chemically stabilized as indicated by field parameters measurements.

Well development details will be documented on a well development log sheet or in a bound hard cover notebook. All water accumulated during well development will be collected and stored in sealed containers.

#### e) Groundwater Level Measurements

Groundwater level measurements will be recorded from monitoring wells to determine groundwater flow and direction at the Site. Water levels will be measured with respect to the top of the casing by means of a groundwater level meter. The water levels will be recorded on water level log sheets or in a bound field notebook. The water level meter probe will be decontaminated between monitoring well locations.

## f) Groundwater Sampling

Groundwater samples will be collected from monitoring wells for chemical analysis. The monitoring wells will be purged first of three to five wetted well volumes of water to remove standing water and draw in fresh formation water as previously described. Dedicated well materials will be used for well purging and sample collection.

Recommended groundwater sample volumes will be collected into pre-cleaned, laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. The samples will be placed in an insulated cooler chilled with ice for storage and transport. Where needed, bottles will be checked for head-space.

All groundwater samples will be assigned unique identification numbers, and the date, time, project number and company name will be specified on each bottle. The samples will be submitted to the contractual laboratory within analytical test group holding times under COC protocols. New disposable chemical resistant gloves will be used for each sampling location to prevent sample cross-contamination.

## g) Residue Management Procedures

The residue materials produced during the borehole drilling, soil sampling programs and monitoring well sampling programs comprised of decontamination fluids from equipment cleaning, and waters from well development and purging will be placed in sealed drums for future off-Site disposal.

# 4. Field Quality Assurance/Quality Control Program

The objective of the field quality assurance/quality control (QA/QC) program is to obtain soil and groundwater samples and other field measurements that provide data of acceptable quality that meets the



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objectives of the Phase II ESA. The objectives of the QA/QC program will be achieved through the implementation of procedures for the collection of unbiased (i.e., non-contaminated) samples, sample documentation and the collection of appropriate QC samples to provide a measure of sample reproducibility and accuracy. The field QA/QC measures will comprise:

- a) Decontamination Protocols;
- b) Equipment Calibration;
- c) Sample Preservation;
- d) Sample Documentation; and,
- e) Field Quality Control Samples.

Details on the field QA/QC measures are provided in the following sections.

#### a) Decontamination Protocols

Decontamination protocols will be followed during field sampling where non-dedicated sampling equipment is used to prevent sample cross contamination. For the borehole drilling and soil sampling, split soil sampling devices will be cleaned/decontaminated between sampling intervals and auger flights between borehole locations. For the monitoring well installation, well components are not to come into contact with the ground surface prior to insertion into boreholes. Electronic water level meters will be decontaminated between monitoring well locations during well development, purging activities and rising head tests. All decontamination fluids will be collected and stored in sealed containers.

#### b) Equipment Calibration

All equipment requiring calibration will be calibrated according to manufacturer's requirements using analytical grade reagents, or by the supplier prior to conducting field activities.

#### c) Sample Preservation

All samples will be preserved using appropriate analytical test group specific reagents, as required, and upon collection placed in ice-filled insulated coolers for storage and transport.

#### d) Sample Documentation

All samples will be assigned a unique identification number, which is to be recorded along with the date, time, project number and company name. All samples will be handled and transported following COC protocols.



Appendix B – Borehole Logs



roje roje	ect Number: ect Client: ect Name: ect Location:	BIGC-ENV-554A  Distrikt Capital  Phase II ESA  590 Argus Road, Oakville, Onta	ario						Drilling Method: Drilling Machine: Date Started:		See Borehole Location Plan  100 mm Solid Stem Augering  Truck Mounted Drill  22 May 25 Date Completed: 22 May 25					Logged by: Compiled by: Reviewed by: Revision No.:	
	LITH	OLOGY PROFILE	SOIL SAMPLING		_	(E)	FIELD T  Penetrati  O SPT			★ Rinse	B TES	s 3 10 12 Reading	COMMEN				
6	eodetic Ground	DESCRIPTION  d Surface Elevation: 104.45 m	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION	MTO Va △ Intact ▲ Remo * Undrain 20	t	Nilcon Vane* Intact Remould Strength (kPa) 60 80	Lowe W <sub>P</sub> Plast 20	r Explosive W O	(ppm) 100 400 E Limit (LEL) W <sub>L</sub> Liquid 60 80	INSTRUMENTATION	COMMEN	115
<b>X</b>	100 mm granu	d gravel, trace silt, trace organics,	SS	1	41	6	- - - -	104 -	0			o <sup>17</sup>					
	- black stains,		SS	2	84	8	_ - - 1 - -		0			o16					
× -	BEDROCK: Sidamp to moist	hale, highly weathered, grey, 1.5, hard	SS	3	95	63	- - - - - - 2	103 -			O	o <sup>11</sup>					
			SS	4	125	50/8cm	- - - - -	102 -		50 8cm		o <sup>2</sup>					
			SS	5	260	50/5cm	- - 3 - - -	101 -		50 5cm		o <sup>3</sup> · · · ·					
			SS	6	48	50/15cm	- - - - - - -	<u>Z</u>		50 15cm		o <sup>4</sup>					
			SS	7	50	53/28cm	}	7 100 –		53 28cm	)	o <sup>14</sup>					
	 wet		SS	8	100	50/8cm	5 - - - -	99 –		50 8cm		o <sup>16</sup>					
=======================================	End of Boreho	98.35 <b>ble</b> 6.1					- - - - 6										
	completion of	en upon completion of drilling. er level reading at 3.89 m bgs upon drilling. er level reading at 3.9 m bgs on May															

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	ECORD	OF BOREH	OLE N	<b>o.</b>	BH2	2			_ Drillinç	g Locati	ion:	See Boreh	nole L	ocation	n Plan			Logged by:	B.i.G. Consultive MC
Pro	ject Client:	Distrikt Capital							Drilling	Metho	od:	100 mm	Solid	Stem A	ugerin	g		Compiled by:	KK
Pro	ject Name:	Phase II ESA							Drilling	g Machi	ne:	Truck Mou	unted	Drill				Reviewed by:	<u>ss</u>
Pro	ject Location:	590 Argus Road, Oa	akville, Onta	ario					Date Started:			22 May 25	<u> </u>	Date Completed: 22 May 25			ıy 25	Revision No.:	<u>0, 22-6-15</u>
	LITH	DLOGY PROFILE		SO	IL SA	MPLI	NG			FIE	ELD 1	ESTING			TEST	NG			
Lithology Plot	Geodetic Ground	DESCRIPTION  I Surface Elevation: 105. //EMENT: 50 mm aspha	02 m	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DЕРТН (m)	ELEVATION (m)	O SP¹ MTO \ △ Inta ▲ Rer	T /ane* ct nould	● DCPT Nilcon Vane  Intact  Remould  ar Strength (kP 60 80	e*	Soil Va parts per 100 2 Lower Ex W <sub>P</sub>	Values 6 8 pour Re million (pr 00 300 kplosive Lii W 0 60	ading om) 400 mit (LEL) W Liquid 80	INSTRUMENTATION INSTALLATION	COMMEN	тѕ
<b>**</b>	∖100 mm granu	lar base d gravel, brown, moist, c	0.2	SS	1	38	16	- - - -		0			<sub>0</sub> 1						
		ey silt, trace sand, black wn/grey, moist, stiff	stains,	SS	2	100	10	- - - - - 1 - -	104 —	0				o13····					
	BEDROCK: SI limestone laye	nale, highly weathered, c rs, reddish brown, damp	103.50 occasionall.5 to moist	SS	3	92	26	- - - - - - 2	103 -		O		07						
	grey			SS	4	100	50/13cn	- - - - -			5( 13cm			12					
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				SS	5	100	50/10cn	- - - - - 5 - -	100 -		10cm	) )		o <sup>13</sup>					
				_ss_	6	100	50/5cm	- - - - - - 6 - -	99 –		5( 5cm	) )		o <sup>14</sup>					
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	<ol><li>Ground wate</li></ol>	ole  en upon completion of d er level reading measure mpletion of drilling.		SS	7	100	50/5cm				50 5cm	· · ·		10					
12-5	G. Consulting In 5500 Tomken Rd sissauga, ON L4\ ada	,	∑ Groundwa	ater dep	oth on co	ompletio	on of dril	ling:	<u>4.30 m</u> .	:	•	: :		:	: :	:			
T: 4	16-214-4880 16-551-2633	fr	orehole details a om a qualified G ommisioned and	Seotechn	ical Engi	neer. Als	o, boreh	ole infor	mation sl	nding of a nould be r	III poten ead in c	tial conditions onjunction wit	present th the ge	and requester	uires inter al report f	pretative as or which it	ssistance was		Scale: 1 : 47

Page: 1 of 1

RI	ECORD	OF MONITORING	WE	LL I	No.	BH	/ <b>M</b> \	<u>N3</u>					10	B.I.G. CONSULTING
Pro	ect Number:	BIGC-ENV-554A						_ Drilling	g Location:	See Boreho	le Location Plan		Logged by:	KK
	ect Client:	Distrikt Capital						Drilling	g Method:		olid Stem Augering		Compiled by:	KK
	ect Name:	Phase II ESA							g Machine:	Truck Moun			Reviewed by:	
Pro		590 Argus Road, Oakville, Onta						_ Date \$	Started:	22 May 25	_ Date Completed: 22 M	ay 25	Revision No.:	0, 22-6-15
	LITH	OLOGY PROFILE	SC	DIL SA	MPL	_				resting	LAB TESTING  ★ Rinse pH Values	z		
Lithology Plot	Geodetic Grour	DESCRIPTION  and Surface Elevation: 104.84 m	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEРТН (m)	ELEVATION (m)	O SPT  MTO Vane*  △ Intact  ▲ Remould	onTesting	2 4 6 8 10 12  Soil Vapour Reading parts per million (pm) 100 200 300 400  ▲ Lower Explosive Limit (LEL) W <sub>P</sub> W W <sub>L</sub> Plastic 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMEN	тѕ
<b>***</b>	FILL: sand ar brown, moist,	nd gravel, trace silt, trace organics, loose	SS	1	79	9	- - - -		0		08			
₩		yey silt, trace sand, black stains, own/grey, moist, firm 104.08 Shale, highly weathered, grey, 0.8				-	<u> </u>	104 -						
	damp to mois	maic, mgmy weamered, grey,	SS	2	79	38	- 1 - - - -	104	0		o <sup>10</sup>			
			SS	3	58	58/28cm	- - - - - - 2	103 -	28	58. O Joenn	o <sup>5</sup>			
			SS	4	100	50/5cm	- - - -		5 5cr	) O n	o <sup>10</sup>			
			SS	5	100	50/8cm	- - - - 3	102 -	- - - - 5 8cr	) O	o <sup>5</sup>			
							- \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	<b>▼</b> 101 –						
	 wet		SS	6	100	50/13cm	Ē	100 -	5 13cr	0				
							- 5 - - - - - -	99 —						
	<ol><li>Ground wa m bgs upon c</li></ol>	pen upon completion of drilling. ter level reading measured at 3.35 ompletion of drilling. er level reading at 3.37m bgs on	_\$\$_	7	100	=50/3cm	6	99 -	5 3cr	<del>0 :                                   </del>				
12-5	<b>i. Consulting Ir</b> 500 Tomken Ro issauga, ON L4	d.						3.5 m.	th of: 3.37					

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₹E	ECORD	OF MONITORING	3 WE	LLI	No.	BH	/MV	<u>V4</u>					III	B.I.G. Consulted No.
roj	ect Number:	BIGC-ENV-554A						Drilling	g Location:	See Boreho	ele Location Plan		_ Logged by:	KK
Proj	ect Client:	Distrikt Capital						Drilling	g Method:	100 mm Se	olid Stem Augering		_ Compiled by:	KK
Proj	ect Name:	Phase II ESA						Drilling	g Machine:	Truck Mour	nted Drill		_ Reviewed by:	ss
Proj	ect Location:	590 Argus Road, Oakville, O	ntario					Date :	Started:	22 May 25	Date Completed: 22 Ma	ay 25	Revision No.:	0, 22-6-15
	LITH	OLOGY PROFILE	SC	DIL SA	MPLI	NG			FIELD	TESTING	LAB TESTING			
Lithology Plot	Geodetic Groun	DESCRIPTION  d Surface Elevation: 105.05 m	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEРТН (m)	ELEVATION (m)	O SPT  MTO Vane*  Δ Intact  ▲ Remould	DCPT  Nilcon Vane*     Intact     Remould  lear Strength (kPa) 60 80	★ Rinse pH Values  2 4 6 8 10 12  Soil Vapour Reading  △ parts per million (ppm) 100 200 300 400  ▲ Lower Explosive Limit (LEL)  W <sub>p</sub> W <sub>L</sub> Plastic  20 40 60 80	INSTRUMENTATION INSTALLATION	COMMEN	тѕ
	ASPHALT PA 120 mm grant	<b>VEMENT:</b> 50 mm asphalt over 104.8 lar base d gravel, trace silt, trace organics,	38 -2 SS	1	84	7	- - - - -	<u> </u>	0		o <sup>28</sup>	등의 등의 등등 등등		
	- silty clay/clay oxidations, bro	rey silt, trace sand, black stains, own/grey, moist, firm	SS	2	100	6	- - - 1 - -	104 -	0		o <sup>19</sup>			
	BEDROCK: S brown, damp t	103.shale, highly weathered, reddish 1 o moist		3	100	81	_ _ _ _ _ 2	103 -		O	o <sup>6</sup>			
			SS	4	100	50/10cn	- - - - - -		100	50 O m	o <sup>7</sup>			
	grey		= \$\$	5	100	50/3cm	- 3 - 3 - <u>1</u>	102 -	3c	50 O				
			SS	6	100	50/13cn	- - 4 - - - -	101 -	130	50 O	011			
							- <u>5</u> - 5 - - - - -	<u>Z</u> 100 –						
	End of Boreh	98.5 ole 6	95 SS	7	100	50/3cm	- - - - 6	99 -	30	50 m				
	<ol><li>Ground wat m bgs upon co</li></ol>	pen upon completion of drilling. er level reading measured at 4.88 ompletion of drilling. er level reading at 3.44 on May 31,												
12-5	<b>i. Consulting In</b> 500 Tomken Rd issauga, ON L4\	i.						<u>4.9 m</u> .						

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Proj Proj Proj	ect Number: lect Client: lect Name:	OF BOREH BIGC-ENV-554A Distrikt Capital Phase II ESA 590 Argus Road, 0			BHS	5			Drilling Drilling	y Location: y Method: y Machine:		le Location Plan lid Stem Augering ted Drill  Date Completed: 22 M	av 26	Logged by: Compiled by: Reviewed by: Revision No.:	
-10]									Date				1 1	Revision No	0, 22-0-15
Litrology Piot	Coodetie Crown	DESCRIPTION	DE 42	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	Penetra O SPT MTO Vane* △ Intact ▲ Remould	TESTING  tionTesting  DCPT  Nilcon Vane*  Remould  Remould  ear Strength (kPa)  60 80	LAB TESTING  ★ Rinse pH Values 2 4 6 8 10 12  Soil Vapour Reading parts per million (ppm) 100 200 300 400  ▲ Lower Explosive Limit (LEL) W <sub>e</sub> W Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMEN	TS
	- 100 min grand	d gravel, trace silt, trac	റ⊿ി	SS	1	41	14	- - - -	105 -	0		o <sup>5</sup>			
	BEDROCK: S brown, damp t	hale, highly weathered o moist	104.37 , reddish 0.8	SS	2	92	20	- - - - - 1 - -	104 -	0		o <sup>6</sup>			
				SS	3	100	73	- - - - - 2	103 -		0	09			
				SS	4	100	5/10cm	- - - -	10c	5 O m		o <sup>6</sup>			
	grey			SS	5	56	76/20cm	— 3 - - - - -	102 -		76 20cm	o <sup>15</sup>			
								- - - - 4 - - -	101 —		0				
				SS	6	100	50/8cm	- - - - 5 - - - - - -	100 – Z :	800	0	o16			
			•	<del>- \$\$</del> -	7	100	<del>50/3cm</del>	- - - 6 - - - -	99 —		0				
			97.43	20	0	400	50/200-	- - - 7 - - - -	98 -		0	o <sup>10</sup>			
	<ol><li>Ground wat</li></ol>	ole  nen upon completion of er level reading measu ompletion of drilling.	7.7 f drilling.	SS	8	100	50/8cm			80	O: :				
2-5	5. Consulting In 500 Tomken Rd issauga, ON L4 <sup>1</sup>		∑ Groundwa	ater dep	oth on c	ompletic	on of drill	ling:	<u>5.3 m</u> .	; ;	<u>: : :</u>				
: 41	6-214-4880 16-551-2633		Borehole details a from a qualified G commissioned and	Seotechn	nical Eng	ineer. Als	o, boreho	ole infor	mation sl	nding of all pote	ntial conditions pre	esent and requires interpretative a he geotechnical report for which it	ssistance was		Scale: 1 : 47

Page: 1 of 1

RE	CORD	OF MONITORING	WE	LL N	No.	<u>BH</u>	/ <b>M</b> \	<u>N6</u>					10	B.I.G. Consulting
Proj	ect Number:	BIGC-ENV-554A						_ Drilling	Location:	See Boreh	ole Location Plan		Logged by:	KK
Proj	ect Client:	Distrikt Capital						Drilling	Method:	100 mm S	Solid Stem Augering		Compiled by:	KK
Proj	ect Name:	Phase II ESA						Drilling	Machine:	Truck Mou	inted Drill		Reviewed by:	ss
Proj	ect Location:	590 Argus Road, Oakville, Onta	ario					Date 9	Started:	22 May 26	Date Completed: 22 M	ay 26	Revision No.:	0, 22-6-15
	LITH	OLOGY PROFILE	SC	DIL SA	MPLI	1			FIELD	TESTING	LAB TESTING	_ [		
Lithology Plot	Geodetic Groun	DESCRIPTION  d Surface Elevation: 105.36 m	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	O SPT  MTO Vane*  Δ Intact  ▲ Remould	■ DCPT  Nilcon Vane     ♦ Intact     • Remould ear Strength (kPa 60 80	Lower Explosive Limit (LEL)  W <sub>P</sub> W W <sub>L</sub>	INSTRUMENTATION INSTALLATION	COMMEN	тѕ
	Ti io illili giali	silt, trace to some sand, brown,	SS	1	70	11	-  -  -  -  -	105 —	0		o <sup>15</sup>			
₩		hale, highly weathered, reddish 0.8					<b> </b>							
	brown, damp	to moist	SS	2	92	24	_ 1 - - - - -	104 -	0		09			
			SS	3	100	100	- - - - - 2				Фо <sup>8</sup>			
							F	100		0 :				
			SS	4	100	50/8cm	- - - - - -	103 —	8cı	0 0 1	o <sup>3</sup>			
			SS	5	95	88/28cm	- 3	Z - = . 102 <del>-</del>		88 28cm	o <sup>12</sup>			
							- - - 4 -							
	grey		SS	6	100	50/8cm	- - - - - -	101 -		0	o <sup>11</sup>			
							- 5 - - - -	100 -						
							-							
	- wet	20.40			100	50/40	6		5	0	o <sup>12</sup>			
	<ol><li>Ground was m bgs upon c</li></ol>	pen upon completion of drilling. ter level reading measured at 3.15 ompletion of drilling. er level reading at 2.92 mbgs on	SS	7	100	50/10cm			100	O	0'7			
12-5	. <b>Consulting Ir</b> 500 Tomken Ro ssauga, ON L4	d.						<u>3.1 m</u> .						

B.I.G. Consulting Inc. 12-5500 Tomken Rd. Mississauga, ON L4W 2Z4 Canada T: 416-214-4880 F: 416-551-2633

Groundwater depth observed on 2022-05-31 at a depth of: 2.92

Pro	ECORD ject Number: ject Client: ject Name:	OF BOREI BIGC-ENV-554A Distrikt Capital Phase II ESA	HOLE N	<b>0.</b> ]	BH7	-			_ Drilling	Locatio	d: <u>1</u>	ee Boreh 00 mm S uck Mou	Solid	Stem A		1		Logged by: Compiled by		ATING.
	-	590 Argus Road,	Oakville, Onta	ario					_	Started:	_	May 26			mplete	d: <b>22 M</b> a	ıy 26	Revision No		15
	LITH	OLOGY PROFIL	.E	SC	IL SA	MPLI	NG		- 	FIE	LD TE	STING	$\overline{\top}$	LAB	TESTI	NG				_
Lithology Plot	Goodetic Group	DESCRIPTION	05 08 m	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DЕРТН (m)	ELEVATION (m)	Pel O SPT MTO Va Δ Intac ▲ Rem	netration  ane* N t  ould  oul		A	Rinse pl- 2 4 Soil Va parts per 100 2 Lower Ex W <sub>P</sub>	Values 6 8 pour Rea million (pp 0 300 plosive Lin W	10 12 ading m) 400	INSTRUMENTATION INSTALLATION	СОММЕ	ENTS	
	110 mm grant	d gravel, trace silt, tra	ഹ	SS	1	100	12	- - - - -	105 — - - - - -	0				o <sup>14</sup>						
	- silty clay/clay oxidations, bro	ey silt, trace sand, bla own/grey, moist, firm	ck stains,	ss	2	95	15	- - - 1 - -	104 —	0:				o <sup>13</sup> ····						
	BEDROCK: S brown, damp t	hale, highly weathered to moist	103.56 d, reddish 1.5	SS	3	92	69	- - - - - - 2	103 —			0	o <sup>i</sup>	7						
	grey			SS	4	135	50/13cm	- - - -	- - - - -		50 13cm		o <sup>5</sup>							
				SS	5	100	50/8cm	- - - - - -	102 - - - - - - -		50 8cm			o <sup>24</sup>						
								- - - 4  - -	101 —											
	wet			SS	6	100	50/13cm	- - - - - 5 -	100 —		50 13cm			014						
								- - - - - - - 6	- - - - -											
				- \$\$	<del>- 7</del> -	100	<del>50/3cm</del>	- - - - -	99 —		50 O 3cm			o <sup>15</sup>						
								- - - 7 - - -	98 —											
	<ol><li>Ground wat</li></ol>	ole  been upon completion of er level reading measompletion of drilling.		SS	- 8	100	50/5cm	-			50 5cm			o <sup>18</sup>						
12-5 Miss Can T: 4	G. Consulting In 5500 Tomken Rd sissauga, ON L4 ada 16-214-4880 16-551-2633	l.	Groundwa  Groundwa  Borehole details a	as prese	nted, do	not cons	titute a th	orough	3.2 m. understar	I nding of all	l potential	conditions	presen	t and requestechnic	uires interpal report fo	oretative as	esistance was		Scale: 1:	47

Pro Pro	ject Client: ject Name:	BIGC-ENV-554A  Distrikt Capital  Phase II ESA  590 Argus Road, Oakville, Onta	prio					Drilling Drilling	J Location: J Method: J Machine: Started:	100 mm S Truck Mou	Solid S	tem A Drill	ugerin	g ed: <b>22 N</b>	lav 26	Logged by: Compiled by: Reviewed by: Revision No.:	
1 10		OLOGY PROFILE		OIL SA	MPLI	NG	1	. Date (		TESTING			TEST		T T	TCVISION NO	0, 22-0-10
Lithology Plot	Geordatic Groun	DESCRIPTION  d Surface Elevation: 105.12 m  VEMENT: 50 mm asphalt ovef 04.96	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DЕРТН (m)	ELEVATION (m)	Penetra O SPT MTO Vane* △ Intact ▲ Remould	■ DCPT  Nilcon Vane     ♦ Intact     • Remould ear Strength (kPage)	<b>★</b> F 2 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4	Rinse pH 4 Soil Va parts per 100 20	Values 6 8 pour Re million (p. 00 300 plosive Li W	10 12 ading pm) 400	INSTALLATION	COMMEN	ITS
	FILL:silty clay	Jular base 0.22/clayey silt, trace sand, occassional ations, brown/grey, moist, firm to	SS	1	92	7	- - - - -	105 -	0		c	16					
*** *** ***		103.60	SS	2	84	12	- - 1 - - - -	104 -	0		· · · · · · · · · · · 1	1					
	BEDROCK: S brown, damp	ihale, highly weathered, reddish 1.5 to moist	SS	3	58	70/28cm	- - - - 2 -	103 -		70 28cm		<sub>2</sub> 17					
			SS	4	100	50/3cm	- - - - - - - 3		. 301		o <sup>7</sup>				<b>X</b> X		
	grey		SS	5	100	50/10cn	— 3 · - - - - - - - - - - -	102 -	5 10cr	0	o <sup>3</sup>						
			SS	6	100	50/13cn	- - - - - - - 5 - -	100 —	5 13cr	0 O n	o <sup>4</sup>						
		98.92	SS	7	100	50/8cm	- - - - - - 6	99 —	.5	0	o <sup>5</sup>						
	<ol><li>Ground was m bgs upon o</li></ol>	ole 6.2  pen upon completion of drilling. ter level reading measured at 5.80 ompletion of drilling. er level reading at 4.55 mbgs on							8ci	n							

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 $\frac{\mathbf{Y}}{2}$  Groundwater depth observed on 2022-05-31 at a depth of:  $4.55 \, \mathrm{r}$ 

Appendix C – Analytical Results



	1	1	1	ı			•				
							Samı				
							Bureau Veritas J				
							Sample Coll	ection Date			
							Sample Coll	ection Time			
Parameter	Criteria	Units	RDL	BH1-SS1	BH2-SS1	BH3-SS1	BH4-SS1	BH5-SS1	BH6-SS1	BH7-SS1	BH8-SS1
				C2E9485 / STX556	C2E9485 / STX557	C2E9485 / STX558	C2E9485 / STX559	C2E9485 / STX560	C2E9485 / STX562	C2E9485 / STX563	C2E9485 / STX564
				05/25/22	05/25/22	05/25/22	05/25/22	05/25/22	05/26/22	05/26/22	05/26/22
Polycyclic Aromatic Hydrocarb	ons (PAHs)										
Acenaphthene	7.9	ug/g	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0075	<0.0050	<0.0050	<0.0050
Acenaphthylene	0.15	ug/g	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene	0.67	ug/g	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(a)anthracene	0.5	ug/g	0.0050	0.01	<0.0050	<0.0050	<0.0050	0.011	<0.0050	<0.0050	0.0098
Benzo(a)pyrene	0.3	ug/g	0.0050	0.011	<0.0050	<0.0050	<0.0050	0.015	<0.0050	<0.0050	0.011
Benzo(b/j)fluoranthene	0.78	ug/g	0.0050	0.018	<0.0050	0.0061	<0.0050	0.021	<0.0050	<0.0050	0.017
Benzo(g,h,i)perylene	6.6	ug/g	0.0050	0.014	<0.0050	0.0065	<0.0050	0.017	<0.0050	<0.0050	0.011
Benzo(k)fluoranthene	0.78	ug/g	0.0050	0.0056	<0.0050	<0.0050	<0.0050	0.006	<0.0050	<0.0050	0.0051
Chrysene	7	ug/g	0.0050	0.01	<0.0050	<0.0050	<0.0050	0.012	<0.0050	<0.0050	0.01
Dibenzo(a,h)anthracene	0.1	ug/g	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.69	ug/g	0.0050	0.019	<0.0050	0.0051	<0.0050	0.028	<0.0050	<0.0050	0.024
Fluorene	62	ug/g	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	ug/g	0.0050	0.01	<0.0050	<0.0050	<0.0050	0.013	<0.0050	<0.0050	0.0098
1-Methylnaphthalene	0.99	ug/g	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
2-Methylnaphthalene	0.99	ug/g	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
1+2-Methylnaphthalene		ug/g	0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071
Naphthalene	0.6	ug/g	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Phenanthrene	6.2	ug/g	0.0050	0.007	<0.0050	0.01	<0.0050	0.017	<0.0050	<0.0050	0.0095
Pyrene	78	ug/g	0.0050	0.016	<0.0050	0.0055	<0.0050	0.024	<0.0050	<0.0050	0.02

Legend	
Exceeds Criteria	Result
Criteria	Reg153/04 T6-Soil/Res-C



	1						Sami	ole ID			
								ob ID / Sample ID			
								lection Date			
B	Cultural a		201	DIII CC1	DU2 CC4	D113 CC4		lection Time	DUC CC4	D117.004	D110 CC4
Parameter	Criteria	Units	RDL	BH1-SS1	BH2-SS1	BH3-SS1	BH4-SS1	BH5-SS2	BH6-SS1	BH7-SS1	BH8-SS1
				C2E9485 / STX556	C2E9485 / STX557	C2E9485 / STX558	C2E9485 / STX559	C2E9485 / STX561	C2E9485 / STX562	C2E9485 / STX563	C2E9485 / STX564
	I		I	05/25/22	05/25/22	05/25/22	05/25/22	05/26/22	05/26/22	05/26/22	05/26/22
Metals (including Hydride-Forming Metals)		,	0.20					1			
Acid Extractable Antimony (Sb)	7.5	ug/g	0.20	0.5	0.33	0.24	<0.20	0.73	0.76	0.41	0.55
Acid Extractable Arsenic (As)	18	ug/g	1.0	5.6	6.2	5.3	2.6	6.5	9.2	4.5	6.1
Acid Extractable Barium (Ba)	390	ug/g	0.50	73	54	54	120	83	110	170	110
Acid Extractable Beryllium (Be)	4	ug/g	0.20	0.73	0.81	0.58	1.3	1	1.2	0.82	0.75
Acid Extractable Boron (B)	120	ug/g	5.0	12	16	6.2	15	20	14	14	12
Acid Extractable Cadmium (Cd)	1.2	ug/g	0.10	0.34	0.12	<0.10	<0.10	<0.10	<0.10	0.1	0.19
Acid Extractable Chromium (Cr)	160	ug/g	1.0	20	22	15	28	25	28	22	21
Acid Extractable Cobalt (Co)	22	ug/g	0.10	11	13	6.1	16	14	14	13	11
Acid Extractable Copper (Cu)	140	ug/g	0.50	100	190	58	31	91	95	43	65
Acid Extractable Lead (Pb)	120	ug/g	1.0	37	13	20	4.6	8.9	12	14	23
Acid Extractable Molybdenum (Mo)	6.9	ug/g	0.50	1.3	1.2	0.76	1.4	2.7	3.6	1.2	2.1
Acid Extractable Nickel (Ni)	100	ug/g	0.50	23	29	16	38	32	33	28	24
Acid Extractable Selenium (Se)	2.4	ug/g	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acid Extractable Silver (Ag)	20	ug/g	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Acid Extractable Thallium (TI)	1	ug/g	0.050	0.11	0.11	0.082	0.12	0.094	0.095	0.1	0.1
Acid Extractable Uranium (U)	23	ug/g	0.050	1.2	0.95	0.69	1.4	1.7	1.6	0.75	1.1
Acid Extractable Vanadium (V)	86	ug/g	5.0	30	31	29	37	35	42	32	32
Acid Extractable Zinc (Zn)	340	ug/g	5.0	150	86	44	73	62	65	66	71
Other Regulated Parameters	*			•							
Hot Water Extractable Boron	1.5	ug/g	0.050	1.1	0.45	0.28	0.2	0.2	0.48	0.33	0.48
WAD Cyanide (Free)	0.051	ug/g	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Electrical Conductivity	0.7	mS/cm	0.002	1.1	0.87	0.81	0.46	0.33	0.61	1.3	1.2
Hexavalent Chromium (CrVI)	8	ug/g	0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Acid Extractable Mercury (Hg)	0.27	ug/g	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Available (CaCl2) pH		pH		7.09	7.85	7.28	7.3	7.85	7.77	7.8	7.16
Sodium Adsorption Ratio	5	N/A		12	4.2	6.4	1.5	1	3.8	8.3	18

Legend	
Exceeds Criteria	Result
Criteria	Reg153/04 T6-Soil/Res-C



Table B.1 - Polycyclic Aromatic Hydrocarbons (PAHs) in Soil

Distrikt Capital Corporation Phase II Environmental Site Assessment 590 Argus Road, Oakville, Ontario BIGC-ENV-554C October 2022

						Sample ID		
					Burea	u Veritas Job ID / Sam	ple ID	
					9	Sample Collection Date	2	
					9	Sample Collection Time	2	
Parameter	Criteria 1	Units	RDL	BH/MW1	BH/MW3	BH/MW4	BH/MW6	BH/MW8
				C2E7927 / STP222	C2E7927 / STP223	C2E7927 / STP224	C2E7927 / STP225	C2E7927 / STP226
				05/31/22	05/31/22	05/31/22	05/31/22	05/31/22
Petroleum Hydrocarbons (PHCs)			•	•				
F1 (C6-C10)	420	ug/L	25	<25	<25	<25	<25	<25
F1 (C6-C10) - BTEX	420	ug/L	25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	ug/L	100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	ug/L	200	<200	<200	<200	<200	<200
F4 (C34-C50)	500	ug/L	200	<200	<200	<200	<200	<200
Reached Baseline at C50	-	ug/L	-	YES	YES	YES	YES	YES
F4G (Gravimetric)	-	ug/L	-	-	-	-	-	-

Legend	
Exceeds Criteria	Result
Criteria	Reg153/04 T6-Soil/Res-C



	1			Sample ID									
				Bureau Veritas Job ID / Sample ID  Sample Collection Date									
				<b>—</b>		Sample Coll							
Parameter	Criteria	Units	RDL	BH/I	MW1	BH/MW3	BH/MW4	BH/MW6	BH/MW8				
raidificter	Criteria	O.m.cs	NDL	C2E7927 / STP222	C2S4043 / TWS683	C2E7927 / STP223	C2E7927 / STP224	C2E7927 / STP225	C2E7927 / STP226				
				05/31/22	09-30-22	05/31/22	05/31/22	05/31/22	05/31/22				
Volatile Organic Compounds (VOCs)				03/31/22	03 30 22	03/31/22	03/31/22	03/31/22	03/31/22				
Benzene	0.5	ug/L	0.17	1.1	<0.20	<0.17	0.18	<0.17	<0.17				
Toluene	24	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	1.4	0.47				
Ethylbenzene	2.4	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
m+p-Xylene	-	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
o-Xylene	-	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
Xylenes, Total	72	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
Acetone	2700	ug/L	10	<10	<10	<10	<10	<10	<10				
Bromodichloromethane	16	ug/L	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
Bromoform	5	ug/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0				
Bromomethane	0.89	ug/L	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
Carbon Tetrachloride	0.2	ug/L	0.20	<0.20	<0.19	<0.20	<0.20	<0.20	<0.20				
Chlorobenzene	30	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
Chloroform	2	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
Dibromochloromethane	25	ug/L	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
1,2-Dichlorobenzene	3	ug/L	0.50	<0.50	<0.40	<0.50	<0.50	<0.50	<0.50				
1,3-Dichlorobenzene	59	ug/L	0.50	<0.50	<0.40	<0.50	<0.50	<0.50	<0.50				
1,4-Dichlorobenzene	0.5	ug/L	0.50	<0.50	<0.40	<0.50	<0.50	<0.50	<0.50				
Dichlorodifluoromethane	590	ug/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0				
1,1-Dichloroethane	5	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
1,2-Dichloroethane	0.5	ug/L	0.50	<0.50	<0.49	<0.50	<0.50	<0.50	<0.50				
1,1-Dichloroethylene	0.5	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
cis-1,2-Dichloroethylene	1.6	ug/L	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
trans-1,2-Dichloroethylene	1.6	ug/L	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
1,2-Dichloropropane	0.58	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
cis-1,3-Dichloropropene	0.5	ug/L	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30				
trans-1,3-Dichloropropene	0.5	ug/L	0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40				
1,3-Dichloropropene (cis+trans)	0.5	ug/L	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
Ethylene Dibromide	0.2	ug/L	0.20	<0.20	<0.19	<0.20	<0.20	<0.20	<0.20				
Hexane	5	ug/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0				
Methyl Ethyl Ketone (MEK)	1800	ug/L	10	<10	<10	<10	<10	<10	<10				
Methyl Isobutyl Ketone (MIBK)	640	ug/L	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0				
Methyl tert-butyl ether (MTBE)	15	ug/L	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
Methylene Chloride (Dichloromethane)	26	ug/L	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0				
Styrene	5.4	ug/L	0.50	<0.50	<0.40	<0.50	<0.50	<0.50	<0.50				
1,1,1,2-Tetrachloroethane	1.1	ug/L	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
1,1,2,2-Tetrachloroethane	0.5	ug/L	0.50	<0.50	<0.40	<0.50	<0.50	<0.50	<0.50				
Tetrachloroethylene	0.5	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
1,1,1-Trichloroethane	23	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
1,1,2-Trichloroethane	0.5	ug/L	0.50	<0.50	<0.40	<0.50	<0.50	<0.50	<0.50				
Trichloroethylene	0.5	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				
Trichlorofluoromethane	150	ug/L	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50				
Vinyl Chloride	0.5	ug/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20				

Legend	
Exceeds Criteria	Result
Criteria	Reg153/04 T6-Soil/Res-C



**Appendix D - Laboratory Certificates of Analysis** 





Your Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Your C.O.C. #: 881358-01-01

**Attention: Rebecca Morrison** 

B.I.G Consulting Inc. 12-5500 Tomken Road Mississauga, ON CANADA L4W 2Z4

Report Date: 2022/06/06

Report #: R7154284 Version: 1 - Final

### **CERTIFICATE OF ANALYSIS**

BUREAU VERITAS JOB #: C2E7927 Received: 2022/05/31, 18:49

Sample Matrix: Water # Samples Received: 5

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	<b>Laboratory Method</b>	Analytical Method
1,3-Dichloropropene Sum	5	N/A	2022/06/03		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Water (1)	4	2022/06/03	2022/06/04	CAM SOP-00316	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1)	1	2022/06/05	2022/06/05	CAM SOP-00316	CCME PHC-CWS m
Volatile Organic Compounds and F1 PHCs	5	N/A	2022/06/03	CAM SOP-00230	EPA 8260C m

#### Remarks:

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

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

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

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

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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

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



Your Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Your C.O.C. #: 881358-01-01

**Attention: Rebecca Morrison** 

B.I.G Consulting Inc. 12-5500 Tomken Road Mississauga, ON CANADA L4W 2Z4

Report Date: 2022/06/06

Report #: R7154284 Version: 1 - Final

# **CERTIFICATE OF ANALYSIS**

BUREAU VERITAS JOB #: C2E7927 Received: 2022/05/31, 18:49

**Encryption Key** 

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Deepthi Shaji, Project Manager

Email: Deepthi.Shaji@bureauveritas.com Phone# (905)817-5700 Ext:7065843

This report has been generated and distributed using a secure automated process.

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



Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

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

Bureau Veritas ID			STP222		STP223	STP224	STP225		
Sampling Date			2022/05/31		2022/05/31	2022/05/31	2022/05/31		
Sampling Date			15:30		15:40	15:50	16:00		
COC Number			881358-01-01		881358-01-01	881358-01-01	881358-01-01		
	UNITS	Criteria	BH/MW1	QC Batch	BH/MW3	BH/MW4	BH/MW6	RDL	QC Batch
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/L	0.5	ND	8026677	ND	ND	ND	0.50	8026677
Volatile Organics								•	
Acetone (2-Propanone)	ug/L	2700	ND	8026806	ND	ND	ND	10	8026806
Benzene	ug/L	5.0	1.1	8026806	ND	0.18	ND	0.17	8026806
Bromodichloromethane	ug/L	16.0	ND	8026806	ND	ND	ND	0.50	8026806
Bromoform	ug/L	25.0	ND	8026806	ND	ND	ND	1.0	8026806
Bromomethane	ug/L	0.89	ND	8026806	ND	ND	ND	0.50	8026806
Carbon Tetrachloride	ug/L	0.79	ND	8026806	ND	ND	ND	0.20	8026806
Chlorobenzene	ug/L	30	ND	8026806	ND	ND	ND	0.20	8026806
Chloroform	ug/L	2.4	ND	8026806	ND	ND	ND	0.20	8026806
Dibromochloromethane	ug/L	25.0	ND	8026806	ND	ND	ND	0.50	8026806
1,2-Dichlorobenzene	ug/L	3.0	ND	8026806	ND	ND	ND	0.50	8026806
1,3-Dichlorobenzene	ug/L	59	ND	8026806	ND	ND	ND	0.50	8026806
1,4-Dichlorobenzene	ug/L	1.0	ND	8026806	ND	ND	ND	0.50	8026806
Dichlorodifluoromethane (FREON 12)	ug/L	590	ND	8026806	ND	ND	ND	1.0	8026806
1,1-Dichloroethane	ug/L	5	ND	8026806	ND	ND	ND	0.20	8026806
1,2-Dichloroethane	ug/L	1.6	ND	8026806	ND	ND	ND	0.50	8026806
1,1-Dichloroethylene	ug/L	1.6	ND	8026806	ND	ND	ND	0.20	8026806
cis-1,2-Dichloroethylene	ug/L	1.6	ND	8026806	ND	ND	ND	0.50	8026806
trans-1,2-Dichloroethylene	ug/L	1.6	ND	8026806	ND	ND	ND	0.50	8026806
1,2-Dichloropropane	ug/L	5.0	ND	8026806	ND	ND	ND	0.20	8026806
cis-1,3-Dichloropropene	ug/L	0.5	ND	8026806	ND	ND	ND	0.30	8026806
trans-1,3-Dichloropropene	ug/L	0.5	ND	8026806	ND	ND	ND	0.40	8026806
Ethylbenzene	ug/L	2.4	ND	8026806	ND	ND	ND	0.20	8026806
Ethylene Dibromide	ug/L	0.2	ND	8026806	ND	ND	ND	0.20	8026806
Hexane	ug/L	51	ND	8026806	ND	ND	ND	1.0	8026806
Methylene Chloride(Dichloromethane)	ug/L	50	ND	8026806	ND	ND	ND	2.0	8026806

No Fill Grey

Black

No Exceedance

Exceeds 1 criteria policy/level Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Potable Ground Water- All Types of Property Uses - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

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

Bureau Veritas ID			STP222		STP223	STP224	STP225		
Sampling Date			2022/05/31		2022/05/31	2022/05/31	2022/05/31		
Sampling Date			15:30		15:40	15:50	16:00		
COC Number			881358-01-01		881358-01-01	881358-01-01	881358-01-01		
	UNITS	Criteria	BH/MW1	QC Batch	BH/MW3	BH/MW4	BH/MW6	RDL	QC Batch
Methyl Ethyl Ketone (2-Butanone)	ug/L	1800	ND	8026806	ND	ND	ND	10	8026806
Methyl Isobutyl Ketone	ug/L	640	ND	8026806	ND	ND	ND	5.0	8026806
Methyl t-butyl ether (MTBE)	ug/L	15	ND	8026806	ND	ND	ND	0.50	8026806
Styrene	ug/L	5.4	ND	8026806	ND	ND	ND	0.50	8026806
1,1,1,2-Tetrachloroethane	ug/L	1.1	ND	8026806	ND	ND	ND	0.50	8026806
1,1,2,2-Tetrachloroethane	ug/L	1.0	ND	8026806	ND	ND	ND	0.50	8026806
Tetrachloroethylene	ug/L	1.6	ND	8026806	ND	ND	ND	0.20	8026806
Toluene	ug/L	24	ND	8026806	ND	ND	1.4	0.20	8026806
1,1,1-Trichloroethane	ug/L	200	ND	8026806	ND	ND	ND	0.20	8026806
1,1,2-Trichloroethane	ug/L	4.7	ND	8026806	ND	ND	ND	0.50	8026806
Trichloroethylene	ug/L	1.6	ND	8026806	ND	ND	ND	0.20	8026806
Trichlorofluoromethane (FREON 11)	ug/L	150	ND	8026806	ND	ND	ND	0.50	8026806
Vinyl Chloride	ug/L	0.5	ND	8026806	ND	ND	ND	0.20	8026806
p+m-Xylene	ug/L	-	ND	8026806	ND	ND	ND	0.20	8026806
o-Xylene	ug/L	-	ND	8026806	ND	ND	ND	0.20	8026806
Total Xylenes	ug/L	300	ND	8026806	ND	ND	ND	0.20	8026806
F1 (C6-C10)	ug/L	750	ND	8026806	ND	ND	ND	25	8026806
F1 (C6-C10) - BTEX	ug/L	750	ND	8026806	ND	ND	ND	25	8026806
F2-F4 Hydrocarbons	•	•	•	•	•	•	•	-	
F2 (C10-C16 Hydrocarbons)	ug/L	150	ND	8034389	ND	ND	ND	100	8032116
F3 (C16-C34 Hydrocarbons)	ug/L	500	ND	8034389	ND	ND	ND	200	8032116
F4 (C34-C50 Hydrocarbons)	ug/L	500	ND	8034389	ND	ND	ND	200	8032116
Reached Baseline at C50	ug/L	-	Yes	8034389	Yes	Yes	Yes		8032116
Surrogate Recovery (%)									
o-Terphenyl	%	-	99	8034389	98	97	98		8032116
4-Bromofluorobenzene	%	-	92	8026806	90	91	91		8026806
D4-1,2-Dichloroethane	%	-	109	8026806	108	109	107		8026806
D8-Toluene	%	-	93	8026806	96	95	96		8026806

No Fill Grey Black No Exceedance

Exceeds 1 criteria policy/level Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Potable Ground Water- All Types of Property Uses - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

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

Bureau Veritas ID			STP225			STP226		
Samuling Data			2022/05/31			2022/05/31		
Sampling Date			16:00			16:10		
COC Number			881358-01-01			881358-01-01		
	UNITS	Criteria	BH/MW6 Lab-Dup	RDL	QC Batch	BH/MW8	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	0.5				ND	0.50	8026677
Volatile Organics								
Acetone (2-Propanone)	ug/L	2700				ND	10	8026806
Benzene	ug/L	5.0				ND	0.17	8026806
Bromodichloromethane	ug/L	16.0				ND	0.50	8026806
Bromoform	ug/L	25.0				ND	1.0	8026806
Bromomethane	ug/L	0.89				ND	0.50	8026806
Carbon Tetrachloride	ug/L	0.79				ND	0.20	8026806
Chlorobenzene	ug/L	30				ND	0.20	8026806
Chloroform	ug/L	2.4				ND	0.20	8026806
Dibromochloromethane	ug/L	25.0				ND	0.50	8026806
1,2-Dichlorobenzene	ug/L	3.0				ND	0.50	8026806
1,3-Dichlorobenzene	ug/L	59				ND	0.50	8026806
1,4-Dichlorobenzene	ug/L	1.0				ND	0.50	8026806
Dichlorodifluoromethane (FREON 12)	ug/L	590				ND	1.0	8026806
1,1-Dichloroethane	ug/L	5				ND	0.20	8026806
1,2-Dichloroethane	ug/L	1.6				ND	0.50	8026806
1,1-Dichloroethylene	ug/L	1.6				ND	0.20	8026806
cis-1,2-Dichloroethylene	ug/L	1.6				ND	0.50	8026806
trans-1,2-Dichloroethylene	ug/L	1.6				ND	0.50	8026806
1,2-Dichloropropane	ug/L	5.0				ND	0.20	8026806
cis-1,3-Dichloropropene	ug/L	0.5				ND	0.30	8026806
trans-1,3-Dichloropropene	ug/L	0.5				ND	0.40	8026806
Ethylbenzene	ug/L	2.4				ND	0.20	8026806
Ethylene Dibromide	ug/L	0.2				ND	0.20	8026806
Hexane	ug/L	51				ND	1.0	8026806

No Fill Grey

Black

No Exceedance

Exceeds 1 criteria policy/level Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Potable Ground Water- All Types of Property Uses - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

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

Bureau Veritas ID			STP225			STP226		
Samulina Data			2022/05/31			2022/05/31		
Sampling Date			16:00			16:10		
COC Number			881358-01-01			881358-01-01		
	UNITS	Criteria	BH/MW6 Lab-Dup	RDL	QC Batch	BH/MW8	RDL	QC Batch
Methylene Chloride(Dichloromethane)	ug/L	50				ND	2.0	8026806
Methyl Ethyl Ketone (2-Butanone)	ug/L	1800				ND	10	8026806
Methyl Isobutyl Ketone	ug/L	640				ND	5.0	8026806
Methyl t-butyl ether (MTBE)	ug/L	15				ND	0.50	8026806
Styrene	ug/L	5.4				ND	0.50	8026806
1,1,1,2-Tetrachloroethane	ug/L	1.1				ND	0.50	8026806
1,1,2,2-Tetrachloroethane	ug/L	1.0				ND	0.50	8026806
Tetrachloroethylene	ug/L	1.6				ND	0.20	8026806
Toluene	ug/L	24				0.47	0.20	8026806
1,1,1-Trichloroethane	ug/L	200				ND	0.20	8026806
1,1,2-Trichloroethane	ug/L	4.7				ND	0.50	8026806
Trichloroethylene	ug/L	1.6				ND	0.20	8026806
Trichlorofluoromethane (FREON 11)	ug/L	150				ND	0.50	8026806
Vinyl Chloride	ug/L	0.5				ND	0.20	8026806
p+m-Xylene	ug/L	-				ND	0.20	8026806
o-Xylene	ug/L	-				ND	0.20	8026806
Total Xylenes	ug/L	300				ND	0.20	8026806
F1 (C6-C10)	ug/L	750				ND	25	8026806
F1 (C6-C10) - BTEX	ug/L	750				ND	25	8026806
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	150	ND	100	8032116	ND	100	8032116
F3 (C16-C34 Hydrocarbons)	ug/L	500	ND	200	8032116	ND	200	8032116
F4 (C34-C50 Hydrocarbons)	ug/L	500	ND	200	8032116	ND	200	8032116
Reached Baseline at C50	ug/L	-	Yes		8032116	Yes		8032116
Surrogate Recovery (%)								
o-Terphenyl	%	-	92		8032116	97		8032116
4-Bromofluorobenzene	%	-				91		8026806

No Fill
Grey
Black

No Exceedance

Exceeds 1 criteria policy/level Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Potable Ground Water- All Types of Property Uses - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

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

Bureau Veritas ID			STP225			STP226		
Sampling Date			2022/05/31			2022/05/31		
Sumpring Dute			16:00			16:10		
COC Number			881358-01-01			881358-01-01		
	UNITS	Criteria	BH/MW6 Lab-Dup	RDL	QC Batch	BH/MW8	RDL	QC Batch
D4-1,2-Dichloroethane	UNITS	Criteria -	•	RDL	QC Batch	BH/MW8	RDL	<b>QC Batch</b> 8026806

No Fill

No Exceedance

Grey Black

Exceeds 1 criteria policy/level

Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Potable Ground Water- All Types of Property Uses - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

# **GENERAL COMMENTS**

Each te	emperature is the	average of up to t	hree cooler temperatures taken at receipt
	Package 1	17.3°C	
Result	s relate only to the	e items tested.	



Bureau Veritas Job #: C2E792' Report Date: 2022/06/06

### **QUALITY ASSURANCE REPORT**

B.I.G Consulting Inc.

Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

			Matrix	Spike	SPIKED	BLANK	Method B	lank	RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8026806	4-Bromofluorobenzene	2022/06/03	98	70 - 130	99	70 - 130	94	%		
8026806	D4-1,2-Dichloroethane	2022/06/03	106	70 - 130	99	70 - 130	101	%		
8026806	D8-Toluene	2022/06/03	105	70 - 130	106	70 - 130	95	%		
8032116	o-Terphenyl	2022/06/03	100	60 - 130	100	60 - 130	102	%		
8034389	o-Terphenyl	2022/06/05	104	60 - 130	102	60 - 130	99	%		
8026806	1,1,1,2-Tetrachloroethane	2022/06/03	103	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	1,1,1-Trichloroethane	2022/06/03	98	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	1,1,2,2-Tetrachloroethane	2022/06/03	99	70 - 130	95	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	1,1,2-Trichloroethane	2022/06/03	107	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	1,1-Dichloroethane	2022/06/03	99	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	1,1-Dichloroethylene	2022/06/03	97	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	1,2-Dichlorobenzene	2022/06/03	97	70 - 130	99	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	1,2-Dichloroethane	2022/06/03	95	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	1,2-Dichloropropane	2022/06/03	101	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	1,3-Dichlorobenzene	2022/06/03	92	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	1,4-Dichlorobenzene	2022/06/03	105	70 - 130	114	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	Acetone (2-Propanone)	2022/06/03	109	60 - 140	104	60 - 140	ND, RDL=10	ug/L	NC	30
8026806	Benzene	2022/06/03	95	70 - 130	95	70 - 130	ND, RDL=0.17	ug/L	NC	30
8026806	Bromodichloromethane	2022/06/03	102	70 - 130	100	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	Bromoform	2022/06/03	102	70 - 130	98	70 - 130	ND, RDL=1.0	ug/L	NC	30
8026806	Bromomethane	2022/06/03	104	60 - 140	98	60 - 140	ND, RDL=0.50	ug/L	NC	30
8026806	Carbon Tetrachloride	2022/06/03	95	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	Chlorobenzene	2022/06/03	94	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	Chloroform	2022/06/03	99	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	cis-1,2-Dichloroethylene	2022/06/03	102	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	cis-1,3-Dichloropropene	2022/06/03	98	70 - 130	89	70 - 130	ND, RDL=0.30	ug/L	NC	30
8026806	Dibromochloromethane	2022/06/03	105	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	Dichlorodifluoromethane (FREON 12)	2022/06/03	79	60 - 140	81	60 - 140	ND, RDL=1.0	ug/L	NC	30
8026806	Ethylbenzene	2022/06/03	87	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	Ethylene Dibromide	2022/06/03	100	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	F1 (C6-C10) - BTEX	2022/06/03					ND, RDL=25	ug/L	NC	30



# QUALITY ASSURANCE REPORT(CONT'D)

B.I.G Consulting Inc.

Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

			Matrix	Spike	SPIKED	BLANK	Method B	lank	RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8026806	F1 (C6-C10)	2022/06/03	98	60 - 140	97	60 - 140	ND, RDL=25	ug/L	NC	30
8026806	Hexane	2022/06/03	100	70 - 130	104	70 - 130	ND, RDL=1.0	ug/L	NC	30
8026806	Methyl Ethyl Ketone (2-Butanone)	2022/06/03	114	60 - 140	109	60 - 140	ND, RDL=10	ug/L	NC	30
8026806	Methyl Isobutyl Ketone	2022/06/03	103	70 - 130	100	70 - 130	ND, RDL=5.0	ug/L	NC	30
8026806	Methyl t-butyl ether (MTBE)	2022/06/03	89	70 - 130	89	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	Methylene Chloride(Dichloromethane)	2022/06/03	103	70 - 130	102	70 - 130	ND, RDL=2.0	ug/L	NC	30
8026806	o-Xylene	2022/06/03	86	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	p+m-Xylene	2022/06/03	87	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	Styrene	2022/06/03	97	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	Tetrachloroethylene	2022/06/03	91	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	Toluene	2022/06/03	91	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC	30
8026806	Total Xylenes	2022/06/03					ND, RDL=0.20	ug/L	NC	30
8026806	trans-1,2-Dichloroethylene	2022/06/03	96	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	trans-1,3-Dichloropropene	2022/06/03	106	70 - 130	92	70 - 130	ND, RDL=0.40	ug/L	NC	30
8026806	Trichloroethylene	2022/06/03	99	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	25	30
8026806	Trichlorofluoromethane (FREON 11)	2022/06/03	96	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC	30
8026806	Vinyl Chloride	2022/06/03	95	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30
8032116	F2 (C10-C16 Hydrocarbons)	2022/06/04	102	60 - 130	102	60 - 130	ND, RDL=100	ug/L	NC	30
8032116	F3 (C16-C34 Hydrocarbons)	2022/06/04	101	60 - 130	102	60 - 130	ND, RDL=200	ug/L	NC	30
8032116	F4 (C34-C50 Hydrocarbons)	2022/06/04	99	60 - 130	99	60 - 130	ND, RDL=200	ug/L	NC	30
8034389	F2 (C10-C16 Hydrocarbons)	2022/06/05	93	60 - 130	96	60 - 130	ND, RDL=100	ug/L	NC	30
8034389	F3 (C16-C34 Hydrocarbons)	2022/06/05	93	60 - 130	100	60 - 130	ND, RDL=200	ug/L	NC	30
8034389	F4 (C34-C50 Hydrocarbons)	2022/06/05	92	60 - 130	99	60 - 130	ND, RDL=200	ug/L	NC	30

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

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

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

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

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

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



Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

### **VALIDATION SIGNATURE PAGE**

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

Anastassia Hamanov, Scientific Specialist

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



Client Project #: BIGC-ENV-554A

Site Location: 590 Argus Road, Oakville

Sampler Initials: MM

# Exceedance Summary Table – Reg153/04 T2-GW-C Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table	is for information purp	oses only and should not be consid	ered a compreh	ensive listing or	statement of c	onformance to
applicable regulatory guidelines	S.					



Your Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Your C.O.C. #: na

**Attention: Rebecca Morrison** 

B.I.G Consulting Inc. 12-5500 Tomken Road Mississauga, ON CANADA L4W 2Z4

Report Date: 2022/06/08

Report #: R7157387 Version: 1 - Final

### **CERTIFICATE OF ANALYSIS**

BUREAU VERITAS JOB #: C2E9485 Received: 2022/06/01, 17:14

Sample Matrix: Soil # Samples Received: 9

" Samples Received. 5					
		Date	Date		
Analyses	Quantity	Extracted	Analyzed	<b>Laboratory Method</b>	Analytical Method
Methylnaphthalene Sum	8	N/A	2022/06/08	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	8	2022/06/04	2022/06/06	CAM SOP-00408	R153 Ana. Prot. 2011
Free (WAD) Cyanide	1	2022/06/04	2022/06/06	CAM SOP-00457	OMOE E3015 m
Free (WAD) Cyanide	4	2022/06/06	2022/06/06	CAM SOP-00457	OMOE E3015 m
ree (WAD) Cyanide	3	2022/06/06	2022/06/07	CAM SOP-00457	OMOE E3015 m
Conductivity	8	2022/06/07	2022/06/07	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	5	2022/06/06	2022/06/06	CAM SOP-00436	EPA 3060/7199 m
Hexavalent Chromium in Soil by IC (1)	3	2022/06/06	2022/06/07	CAM SOP-00436	EPA 3060/7199 m
Acid Extractable Metals by ICPMS	8	2022/06/06	2022/06/07	CAM SOP-00447	EPA 6020B m
Moisture	9	N/A	2022/06/02	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	4	2022/06/06	2022/06/06	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	4	2022/06/06	2022/06/07	CAM SOP-00318	EPA 8270D m
oh CaCl2 EXTRACT	8	2022/06/07	2022/06/07	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	8	N/A	2022/06/08	CAM SOP-00102	EPA 6010C

#### Remarks:

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

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

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

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



Your Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Your C.O.C. #: na

**Attention: Rebecca Morrison** 

B.I.G Consulting Inc. 12-5500 Tomken Road Mississauga, ON CANADA L4W 2Z4

Report Date: 2022/06/08

Report #: R7157387 Version: 1 - Final

### **CERTIFICATE OF ANALYSIS**

#### **BUREAU VERITAS JOB #: C2E9485**

Received: 2022/06/01, 17:14

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Soils are reported on a dry weight basis unless otherwise specified.

### **Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager. Deepthi Shaji, Project Manager Email: Deepthi.Shaji@bureauveritas.com Phone# (905)817-5700 Ext:7065843

This report has been generated and distributed using a secure automated process.

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



Report Date: 2022/06/08

B.I.G Consulting Inc.

Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

### O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			STX556		STX557		STX558		
Sampling Date			2022/05/25		2022/05/25		2022/05/25		
COC Number			na		na		na		
	UNITS	Criteria	BH1-SS1	QC Batch	BH2-SS1	QC Batch	BH3-SS1	RDL	QC Batch
Calculated Parameters	-		•	·			·	-	
Sodium Adsorption Ratio	N/A	5.0	12	8028631	4.2	8028631	6.4		8028631
Inorganics	•	•	•	-			•		
Conductivity	mS/cm	0.7	1.1	8037096	0.87	8037096	0.81	0.002	8037096
Available (CaCl2) pH	рН	-	7.09	8036957	7.85	8036983	7.28		8036963
WAD Cyanide (Free)	ug/g	0.051	ND	8034712	ND	8036142	ND	0.01	8034712
Chromium (VI)	ug/g	8	ND	8034866	ND	8035307	ND	0.18	8034866
Metals		•		•					
Hot Water Ext. Boron (B)	ug/g	1.5	1.1	8033995	0.45	8033995	0.28	0.050	8033995
Acid Extractable Antimony (Sb)	ug/g	7.5	0.50	8034776	0.33	8034776	0.24	0.20	8034776
Acid Extractable Arsenic (As)	ug/g	18	5.6	8034776	6.2	8034776	5.3	1.0	8034776
Acid Extractable Barium (Ba)	ug/g	390	73	8034776	54	8034776	54	0.50	8034776
Acid Extractable Beryllium (Be)	ug/g	4	0.73	8034776	0.81	8034776	0.58	0.20	8034776
Acid Extractable Boron (B)	ug/g	120	12	8034776	16	8034776	6.2	5.0	8034776
Acid Extractable Cadmium (Cd)	ug/g	1.2	0.34	8034776	0.12	8034776	ND	0.10	8034776
Acid Extractable Chromium (Cr)	ug/g	160	20	8034776	22	8034776	15	1.0	8034776
Acid Extractable Cobalt (Co)	ug/g	22	11	8034776	13	8034776	6.1	0.10	8034776
Acid Extractable Copper (Cu)	ug/g	140	100	8034776	190	8034776	58	0.50	8034776
Acid Extractable Lead (Pb)	ug/g	120	37	8034776	13	8034776	20	1.0	8034776
Acid Extractable Molybdenum (Mo)	ug/g	6.9	1.3	8034776	1.2	8034776	0.76	0.50	8034776
Acid Extractable Nickel (Ni)	ug/g	100	23	8034776	29	8034776	16	0.50	8034776
Acid Extractable Selenium (Se)	ug/g	2.4	ND	8034776	ND	8034776	ND	0.50	8034776
Acid Extractable Silver (Ag)	ug/g	20	ND	8034776	ND	8034776	ND	0.20	8034776
Acid Extractable Thallium (TI)	ug/g	1	0.11	8034776	0.11	8034776	0.082	0.050	8034776
Acid Extractable Uranium (U)	ug/g	23	1.2	8034776	0.95	8034776	0.69	0.050	8034776
Acid Extractable Vanadium (V)	ug/g	86	30	8034776	31	8034776	29	5.0	8034776
Acid Extractable Zinc (Zn)	ug/g	340	150	8034776	86	8034776	44	5.0	8034776
Acid Extractable Mercury (Hg)	ug/g	0.27	ND	8034776	ND	8034776	ND	0.050	8034776

No Fill Grey Black

No Exceedance

Exceeds 1 criteria policy/level

Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

### O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			STX559			STX561			STX562		
Sampling Date			2022/05/25			2022/05/26			2022/05/26		
COC Number			na			na			na		
	UNITS	Criteria	BH4-SS1	RDL	QC Batch	BH5-SS2	RDL	QC Batch	BH6-SS1	RDL	QC Batch
Calculated Parameters											
Sodium Adsorption Ratio	N/A	5.0	1.5		8028631	1.0		8028631	3.8		8028631
Inorganics	•	-	•	•	•	•	•	•	•		
Conductivity	mS/cm	0.7	0.46	0.002	8037096	0.33	0.002	8037096	0.61	0.002	8037096
Moisture	%	-				14	1.0	8029482			
Available (CaCl2) pH	рН	-	7.30		8036957	7.85		8036963	7.77		8036957
WAD Cyanide (Free)	ug/g	0.051	ND	0.01	8034712	ND	0.01	8036142	ND	0.01	8034712
Chromium (VI)	ug/g	8	ND	0.18	8034866	ND	0.18	8035307	ND	0.18	8034866
Metals	•	•	•		-	•					
Hot Water Ext. Boron (B)	ug/g	1.5	0.20	0.050	8033995	0.20	0.050	8033995	0.48	0.050	8033995
Acid Extractable Antimony (Sb)	ug/g	7.5	ND	0.20	8034776	0.73	0.20	8034776	0.76	0.20	8034776
Acid Extractable Arsenic (As)	ug/g	18	2.6	1.0	8034776	6.5	1.0	8034776	9.2	1.0	8034776
Acid Extractable Barium (Ba)	ug/g	390	120	0.50	8034776	83	0.50	8034776	110	0.50	8034776
Acid Extractable Beryllium (Be)	ug/g	4	1.3	0.20	8034776	1.0	0.20	8034776	1.2	0.20	8034776
Acid Extractable Boron (B)	ug/g	120	15	5.0	8034776	20	5.0	8034776	14	5.0	8034776
Acid Extractable Cadmium (Cd)	ug/g	1.2	ND	0.10	8034776	ND	0.10	8034776	ND	0.10	8034776
Acid Extractable Chromium (Cr)	ug/g	160	28	1.0	8034776	25	1.0	8034776	28	1.0	8034776
Acid Extractable Cobalt (Co)	ug/g	22	16	0.10	8034776	14	0.10	8034776	14	0.10	8034776
Acid Extractable Copper (Cu)	ug/g	140	31	0.50	8034776	91	0.50	8034776	95	0.50	8034776
Acid Extractable Lead (Pb)	ug/g	120	4.6	1.0	8034776	8.9	1.0	8034776	12	1.0	8034776
Acid Extractable Molybdenum (Mo)	ug/g	6.9	1.4	0.50	8034776	2.7	0.50	8034776	3.6	0.50	8034776
Acid Extractable Nickel (Ni)	ug/g	100	38	0.50	8034776	32	0.50	8034776	33	0.50	8034776
Acid Extractable Selenium (Se)	ug/g	2.4	ND	0.50	8034776	ND	0.50	8034776	ND	0.50	8034776
Acid Extractable Silver (Ag)	ug/g	20	ND	0.20	8034776	ND	0.20	8034776	ND	0.20	8034776
Acid Extractable Thallium (TI)	ug/g	1	0.12	0.050	8034776	0.094	0.050	8034776	0.095	0.050	8034776
Acid Extractable Uranium (U)	ug/g	23	1.4	0.050	8034776	1.7	0.050	8034776	1.6	0.050	8034776
Acid Extractable Vanadium (V)	ug/g	86	37	5.0	8034776	35	5.0	8034776	42	5.0	8034776
Acid Extractable Zinc (Zn)	ug/g	340	73	5.0	8034776	62	5.0	8034776	65	5.0	8034776
Acid Extractable Mercury (Hg)	ug/g	0.27	ND	0.050	8034776	ND	0.050	8034776	ND	0.050	8034776
No French								•			

No Fill Grey

Black

No Exceedance

Exceeds 1 criteria policy/level

Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

### O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			STX563		STX564		
Sampling Date			2022/05/26		2022/05/26		
COC Number			na		na		
	UNITS	Criteria	BH7-SS1	QC Batch	BH8-SS1	RDL	QC Batch
Calculated Parameters	•	•	•			•	
Sodium Adsorption Ratio	N/A	5.0	8.3	8028631	18		8028631
Inorganics	•					•	
Conductivity	mS/cm	0.7	1.3	8037096	1.2	0.002	8037096
Available (CaCl2) pH	рН	-	7.80	8036963	7.16		8036963
WAD Cyanide (Free)	ug/g	0.051	ND	8034267	ND	0.01	8036142
Chromium (VI)	ug/g	8	ND	8034866	ND	0.18	8035307
Metals							
Hot Water Ext. Boron (B)	ug/g	1.5	0.33	8033995	0.48	0.050	8033995
Acid Extractable Antimony (Sb)	ug/g	7.5	0.41	8034776	0.55	0.20	8034776
Acid Extractable Arsenic (As)	ug/g	18	4.5	8034776	6.1	1.0	8034776
Acid Extractable Barium (Ba)	ug/g	390	170	8034776	110	0.50	8034776
Acid Extractable Beryllium (Be)	ug/g	4	0.82	8034776	0.75	0.20	8034776
Acid Extractable Boron (B)	ug/g	120	14	8034776	12	5.0	8034776
Acid Extractable Cadmium (Cd)	ug/g	1.2	0.10	8034776	0.19	0.10	8034776
Acid Extractable Chromium (Cr)	ug/g	160	22	8034776	21	1.0	8034776
Acid Extractable Cobalt (Co)	ug/g	22	13	8034776	11	0.10	8034776
Acid Extractable Copper (Cu)	ug/g	140	43	8034776	65	0.50	8034776
Acid Extractable Lead (Pb)	ug/g	120	14	8034776	23	1.0	8034776
Acid Extractable Molybdenum (Mo)	ug/g	6.9	1.2	8034776	2.1	0.50	8034776
Acid Extractable Nickel (Ni)	ug/g	100	28	8034776	24	0.50	8034776
Acid Extractable Selenium (Se)	ug/g	2.4	ND	8034776	ND	0.50	8034776
Acid Extractable Silver (Ag)	ug/g	20	ND	8034776	ND	0.20	8034776
Acid Extractable Thallium (TI)	ug/g	1	0.10	8034776	0.10	0.050	8034776
Acid Extractable Uranium (U)	ug/g	23	0.75	8034776	1.1	0.050	8034776
Acid Extractable Vanadium (V)	ug/g	86	32	8034776	32	5.0	8034776
Acid Extractable Zinc (Zn)	ug/g	340	66	8034776	71	5.0	8034776
Acid Extractable Mercury (Hg)	ug/g	0.27	ND	8034776	ND	0.050	8034776
No Fill No Evceedance							

No Fill Grey Black No Exceedance

Exceeds 1 criteria policy/level

Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

# O.REG 153 PAHS (SOIL)

Bureau Veritas ID			STX556	STX557	STX558	STX559	STX560	STX562		
Sampling Date			2022/05/25	2022/05/25	2022/05/25	2022/05/25	2022/05/25	2022/05/26		
COC Number			na	na	na	na	na	na		
	UNITS	Criteria	BH1-SS1	BH2-SS1	BH3-SS1	BH4-SS1	BH5-SS1	BH6-SS1	RDL	QC Batch
Inorganics										
Moisture	%	-	17	11	10	28	8.5	19	1.0	8029356
Calculated Parameters	•	•				-		-		
Methylnaphthalene, 2-(1-)	ug/g	-	ND	ND	ND	ND	ND	ND	0.0071	8028619
Polyaromatic Hydrocarbons										
Acenaphthene	ug/g	7.9	ND	ND	ND	ND	0.0075	ND	0.0050	8034677
Acenaphthylene	ug/g	0.15	ND	ND	ND	ND	ND	ND	0.0050	8034677
Anthracene	ug/g	0.67	ND	ND	ND	ND	ND	ND	0.0050	8034677
Benzo(a)anthracene	ug/g	0.5	0.010	ND	ND	ND	0.011	ND	0.0050	8034677
Benzo(a)pyrene	ug/g	0.3	0.011	ND	ND	ND	0.015	ND	0.0050	8034677
Benzo(b/j)fluoranthene	ug/g	0.78	0.018	ND	0.0061	ND	0.021	ND	0.0050	8034677
Benzo(g,h,i)perylene	ug/g	6.6	0.014	ND	0.0065	ND	0.017	ND	0.0050	8034677
Benzo(k)fluoranthene	ug/g	0.78	0.0056	ND	ND	ND	0.0060	ND	0.0050	8034677
Chrysene	ug/g	7	0.010	ND	ND	ND	0.012	ND	0.0050	8034677
Dibenzo(a,h)anthracene	ug/g	0.1	ND	ND	ND	ND	ND	ND	0.0050	8034677
Fluoranthene	ug/g	0.69	0.019	ND	0.0051	ND	0.028	ND	0.0050	8034677
Fluorene	ug/g	62	ND	ND	ND	ND	ND	ND	0.0050	8034677
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.010	ND	ND	ND	0.013	ND	0.0050	8034677
1-Methylnaphthalene	ug/g	0.99	ND	ND	ND	ND	ND	ND	0.0050	8034677
2-Methylnaphthalene	ug/g	0.99	ND	ND	ND	ND	ND	ND	0.0050	8034677
Naphthalene	ug/g	0.6	ND	ND	ND	ND	ND	ND	0.0050	8034677
Phenanthrene	ug/g	6.2	0.0070	ND	0.010	ND	0.017	ND	0.0050	8034677
Pyrene	ug/g	78	0.016	ND	0.0055	ND	0.024	ND	0.0050	8034677
Surrogate Recovery (%)										
D10-Anthracene	%	-	96	95	95	91	99	96		8034677
D14-Terphenyl (FS)	%	-	95	94	93	88	97	94		8034677
D8-Acenaphthylene	%	-	95	93	92	85	97	91		8034677

No Fill Grey

Black

No Exceedance

Exceeds 1 criteria policy/level Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

# O.REG 153 PAHS (SOIL)

Bureau Veritas ID			STX563			STX563			STX564		
Sampling Date			2022/05/26			2022/05/26			2022/05/26		
COC Number			na			na			na		
	UNITS	Criteria	BH7-SS1	RDL	QC Batch	BH7-SS1 Lab-Dup	RDL	QC Batch	BH8-SS1	RDL	QC Batch
Inorganics											
Moisture	%	-	17	1.0	8029356	17	1.0	8029356	17	1.0	8029356
Calculated Parameters											
Methylnaphthalene, 2-(1-)	ug/g	-	ND	0.0071	8028619				ND	0.0071	8028619
Polyaromatic Hydrocarbons		•	•			•		•			
Acenaphthene	ug/g	7.9	ND	0.0050	8034677				ND	0.0050	8034677
Acenaphthylene	ug/g	0.15	ND	0.0050	8034677				ND	0.0050	8034677
Anthracene	ug/g	0.67	ND	0.0050	8034677				ND	0.0050	8034677
Benzo(a)anthracene	ug/g	0.5	ND	0.0050	8034677				0.0098	0.0050	8034677
Benzo(a)pyrene	ug/g	0.3	ND	0.0050	8034677				0.011	0.0050	8034677
Benzo(b/j)fluoranthene	ug/g	0.78	ND	0.0050	8034677				0.017	0.0050	8034677
Benzo(g,h,i)perylene	ug/g	6.6	ND	0.0050	8034677				0.011	0.0050	8034677
Benzo(k)fluoranthene	ug/g	0.78	ND	0.0050	8034677				0.0051	0.0050	8034677
Chrysene	ug/g	7	ND	0.0050	8034677				0.010	0.0050	8034677
Dibenzo(a,h)anthracene	ug/g	0.1	ND	0.0050	8034677				ND	0.0050	8034677
Fluoranthene	ug/g	0.69	ND	0.0050	8034677				0.024	0.0050	8034677
Fluorene	ug/g	62	ND	0.0050	8034677				ND	0.0050	8034677
Indeno(1,2,3-cd)pyrene	ug/g	0.38	ND	0.0050	8034677				0.0098	0.0050	8034677
1-Methylnaphthalene	ug/g	0.99	ND	0.0050	8034677				ND	0.0050	8034677
2-Methylnaphthalene	ug/g	0.99	ND	0.0050	8034677				ND	0.0050	8034677
Naphthalene	ug/g	0.6	ND	0.0050	8034677				ND	0.0050	8034677
Phenanthrene	ug/g	6.2	ND	0.0050	8034677				0.0095	0.0050	8034677
Pyrene	ug/g	78	ND	0.0050	8034677				0.020	0.0050	8034677
Surrogate Recovery (%)											
D10-Anthracene	%	-	93		8034677				91		8034677
D14-Terphenyl (FS)	%	-	89		8034677				90		8034677
D8-Acenaphthylene	%	-	85		8034677				89		8034677

No Fill Grey No Exceedance

Exceeds 1 criteria policy/level Exceeds both criteria/levels

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition

Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil



Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

# **GENERAL COMMENTS**

Each te	emperature is the	average of up to	three cooler temperatures taken at receipt
	Package 1	4.7°C	
Result	s relate only to the	e items tested.	



### **QUALITY ASSURANCE REPORT**

B.I.G Consulting Inc.

Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

			Matrix	Spike	SPIKED	BLANK	Method B	lank	RP	D
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8034677	D10-Anthracene	2022/06/06	98	50 - 130	98	50 - 130	95	%		
8034677	D14-Terphenyl (FS)	2022/06/06	98	50 - 130	96	50 - 130	92	%		
8034677	D8-Acenaphthylene	2022/06/06	93	50 - 130	95	50 - 130	86	%		
8029356	Moisture	2022/06/02							3.6	20
8029482	Moisture	2022/06/02							9.9	20
8033995	Hot Water Ext. Boron (B)	2022/06/06	102	75 - 125	101	75 - 125	ND, RDL=0.050	ug/g	4.9	40
8034267	WAD Cyanide (Free)	2022/06/06	93	75 - 125	93	80 - 120	ND, RDL=0.01	ug/g	NC	35
8034677	1-Methylnaphthalene	2022/06/06	100	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	2-Methylnaphthalene	2022/06/06	98	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Acenaphthene	2022/06/06	94	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Acenaphthylene	2022/06/06	88	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Anthracene	2022/06/06	96	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Benzo(a)anthracene	2022/06/06	105	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Benzo(a)pyrene	2022/06/06	86	50 - 130	84	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Benzo(b/j)fluoranthene	2022/06/06	92	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Benzo(g,h,i)perylene	2022/06/06	98	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Benzo(k)fluoranthene	2022/06/06	91	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Chrysene	2022/06/06	99	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Dibenzo(a,h)anthracene	2022/06/06	93	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Fluoranthene	2022/06/06	102	50 - 130	102	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Fluorene	2022/06/06	95	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Indeno(1,2,3-cd)pyrene	2022/06/06	99	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Naphthalene	2022/06/06	84	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Phenanthrene	2022/06/06	96	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034677	Pyrene	2022/06/06	102	50 - 130	102	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8034712	WAD Cyanide (Free)	2022/06/06	84	75 - 125	90	80 - 120	ND, RDL=0.01	ug/g	NC	35
8034776	Acid Extractable Antimony (Sb)	2022/06/07	105	75 - 125	101	80 - 120	ND, RDL=0.20	ug/g	NC	30
8034776	Acid Extractable Arsenic (As)	2022/06/07	104	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g	8.4	30
8034776	Acid Extractable Barium (Ba)	2022/06/07	114	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	6.0	30
8034776	Acid Extractable Beryllium (Be)	2022/06/07	107	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	NC	30
8034776	Acid Extractable Boron (B)	2022/06/07	100	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	NC	30



# QUALITY ASSURANCE REPORT(CONT'D)

B.I.G Consulting Inc.

Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

			Matrix Spike		SPIKED	BLANK	Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8034776	Acid Extractable Cadmium (Cd)	2022/06/07	105	75 - 125	101	80 - 120	ND, RDL=0.10	ug/g	NC	30
8034776	Acid Extractable Chromium (Cr)	2022/06/07	111	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g	11	30
8034776	Acid Extractable Cobalt (Co)	2022/06/07	105	75 - 125	104	80 - 120	ND, RDL=0.10	ug/g	0.16	30
8034776	Acid Extractable Copper (Cu)	2022/06/07	108	75 - 125	105	80 - 120	ND, RDL=0.50	ug/g	2.8	30
8034776	Acid Extractable Lead (Pb)	2022/06/07	104	75 - 125	103	80 - 120	ND, RDL=1.0	ug/g	3.0	30
8034776	Acid Extractable Mercury (Hg)	2022/06/07	97	75 - 125	99	80 - 120	ND, RDL=0.050	ug/g	NC	30
8034776	Acid Extractable Molybdenum (Mo)	2022/06/07	109	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	NC	30
8034776	Acid Extractable Nickel (Ni)	2022/06/07	110	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	8.6	30
8034776	Acid Extractable Selenium (Se)	2022/06/07	100	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	NC	30
8034776	Acid Extractable Silver (Ag)	2022/06/07	105	75 - 125	103	80 - 120	ND, RDL=0.20	ug/g	NC	30
8034776	Acid Extractable Thallium (TI)	2022/06/07	104	75 - 125	105	80 - 120	ND, RDL=0.050	ug/g	NC	30
8034776	Acid Extractable Uranium (U)	2022/06/07	105	75 - 125	101	80 - 120	ND, RDL=0.050	ug/g	1.7	30
8034776	Acid Extractable Vanadium (V)	2022/06/07	120	75 - 125	103	80 - 120	ND, RDL=5.0	ug/g	3.1	30
8034776	Acid Extractable Zinc (Zn)	2022/06/07	118	75 - 125	102	80 - 120	ND, RDL=5.0	ug/g	1.8	30
8034866	Chromium (VI)	2022/06/06	86	70 - 130	91	80 - 120	ND, RDL=0.18	ug/g	NC	35
8035307	Chromium (VI)	2022/06/07	82	70 - 130	88	80 - 120	ND, RDL=0.18	ug/g	NC	35
8036142	WAD Cyanide (Free)	2022/06/07	85	75 - 125	99	80 - 120	ND, RDL=0.01	ug/g	NC	35
8036957	Available (CaCl2) pH	2022/06/07			100	97 - 103			0.44	N/A
8036963	Available (CaCl2) pH	2022/06/07			100	97 - 103			0.32	N/A
8036983	Available (CaCl2) pH	2022/06/07		_	100	97 - 103			0.22	N/A
8037096	Conductivity	2022/06/07			99	90 - 110	ND, RDL=0.002	mS/cm	0.44	10

N/A = Not Applicable

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

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

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

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

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

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



Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

### **VALIDATION SIGNATURE PAGE**

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



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

Client Project #: BIGC-ENV-554A

Site Location: 590 ARGUS ROAD, OAKVILLE, ONTARIO

Sampler Initials: KK

# Exceedance Summary Table – Reg153/04 T2-Soil/Res-C Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH1-SS1	STX556-01	Conductivity	0.7	1.1	0.002	mS/cm
BH1-SS1	STX556-01	Sodium Adsorption Ratio	5.0	12		N/A
BH2-SS1	STX557-01	Conductivity	0.7	0.87	0.002	mS/cm
BH2-SS1	STX557-01	Acid Extractable Copper (Cu)	140	190	0.50	ug/g
BH3-SS1	STX558-01	Conductivity	0.7	0.81	0.002	mS/cm
BH3-SS1	STX558-01	Sodium Adsorption Ratio	5.0	6.4		N/A
BH7-SS1	STX563-01	Conductivity	0.7	1.3	0.002	mS/cm
BH7-SS1	STX563-01	Sodium Adsorption Ratio	5.0	8.3		N/A
BH8-SS1	STX564-01	Conductivity	0.7	1.2	0.002	mS/cm
BH8-SS1	STX564-01	Sodium Adsorption Ratio	5.0	18		N/A

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.



Your Project #: BIGC-ENV-554C Site Location: 590 ARGUS RD Your C.O.C. #: 671662-19-01

**Attention: Rebecca Morrison** 

B.I.G Consulting Inc. 12-5500 Tomken Road Mississauga, ON CANADA L4W 2Z4

Report Date: 2022/10/03

Report #: R7326283 Version: 2 - Revision

### **CERTIFICATE OF ANALYSIS – REVISED REPORT**

BUREAU VERITAS JOB #: C2S4043 Received: 2022/09/30, 14:22

Sample Matrix: Water # Samples Received: 1

		Date	Date		
Analyses	Quantity	y Extracted	Analyzed	<b>Laboratory Method</b>	Analytical Method
1,3-Dichloropropene Sum	1	N/A	2022/10/03	}	EPA 8260C m
Volatile Organic Compounds in Water	1	N/A	2022/10/01	. CAM SOP-00228	EPA 8260C m

#### Remarks:

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

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

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

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

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: BIGC-ENV-554C Site Location: 590 ARGUS RD Your C.O.C. #: 671662-19-01

**Attention: Rebecca Morrison** 

B.I.G Consulting Inc. 12-5500 Tomken Road Mississauga, ON CANADA L4W 2Z4

Report Date: 2022/10/03

Report #: R7326283 Version: 2 - Revision

# **CERTIFICATE OF ANALYSIS – REVISED REPORT**

BUREAU VERITAS JOB #: C2S4043 Received: 2022/09/30, 14:22

**Encryption Key** 

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Deepthi Shaji, Project Manager

Email: Deepthi.Shaji@bureauveritas.com Phone# (905)817-5700 Ext:7065843

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



Client Project #: BIGC-ENV-554C Site Location: 590 ARGUS RD

Sampler Initials: CW

### O.REG 153 VOCS BY HS (WATER)

Bureau Veritas ID			TWS683			TWS683		
Sampling Date			2022/09/30			2022/09/30		
Sampling Date			13:00			13:00		
COC Number			671662-19-01			671662-19-01		
	UNITS	Criteria	BH/MW1	RDL	QC Batch	BH/MW1 Lab-Dup	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	0.5	ND	0.50	8257233			
Volatile Organics				•				
Acetone (2-Propanone)	ug/L	2700	ND	10	8257690	ND	10	8257690
Benzene	ug/L	0.5	ND	0.20	8257690	ND	0.20	8257690
Bromodichloromethane	ug/L	16.0	ND	0.50	8257690	ND	0.50	8257690
Bromoform	ug/L	5	ND	1.0	8257690	ND	1.0	8257690
Bromomethane	ug/L	0.89	ND	0.50	8257690	ND	0.50	8257690
Carbon Tetrachloride	ug/L	0.2	ND	0.19	8257690	ND	0.19	8257690
Chlorobenzene	ug/L	30	ND	0.20	8257690	ND	0.20	8257690
Chloroform	ug/L	2	ND	0.20	8257690	ND	0.20	8257690
Dibromochloromethane	ug/L	25.0	ND	0.50	8257690	ND	0.50	8257690
1,2-Dichlorobenzene	ug/L	3.0	ND	0.40	8257690	ND	0.40	8257690
1,3-Dichlorobenzene	ug/L	59	ND	0.40	8257690	ND	0.40	8257690
1,4-Dichlorobenzene	ug/L	0.5	ND	0.40	8257690	ND	0.40	8257690
Dichlorodifluoromethane (FREON 12)	ug/L	590	ND	1.0	8257690	ND	1.0	8257690
1,1-Dichloroethane	ug/L	5	ND	0.20	8257690	ND	0.20	8257690
1,2-Dichloroethane	ug/L	0.5	ND	0.49	8257690	ND	0.49	8257690
1,1-Dichloroethylene	ug/L	0.5	ND	0.20	8257690	ND	0.20	8257690
cis-1,2-Dichloroethylene	ug/L	1.6	ND	0.50	8257690	ND	0.50	8257690
trans-1,2-Dichloroethylene	ug/L	1.6	ND	0.50	8257690	ND	0.50	8257690
1,2-Dichloropropane	ug/L	0.58	ND	0.20	8257690	ND	0.20	8257690
cis-1,3-Dichloropropene	ug/L	0.5	ND	0.30	8257690	ND	0.30	8257690
trans-1,3-Dichloropropene	ug/L	0.5	ND	0.40	8257690	ND	0.40	8257690
Ethylbenzene	ug/L	2.4	ND	0.20	8257690	ND	0.20	8257690
Ethylene Dibromide	ug/L	0.2	ND	0.19	8257690	ND	0.19	8257690
Hexane	ug/L	5	ND	1.0	8257690	ND	1.0	8257690

No Fill Grey

Black

No Exceedance

Exceeds 1 criteria policy/level

Exceeds both criteria/levels

RDL = Reportable Detection Limit QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition

Potable Ground Water - All Types of Property Use



Client Project #: BIGC-ENV-554C Site Location: 590 ARGUS RD

Sampler Initials: CW

# O.REG 153 VOCS BY HS (WATER)

Bureau Veritas ID			TWS683			TWS683		
Sampling Date			2022/09/30			2022/09/30		
Sampling Date			13:00			13:00		
COC Number			671662-19-01			671662-19-01		
	UNITS	Criteria	BH/MW1	RDL	QC Batch	BH/MW1 Lab-Dup	RDL	QC Batch
Methylene Chloride(Dichloromethane)	ug/L	26	ND	2.0	8257690	ND	2.0	8257690
Methyl Ethyl Ketone (2-Butanone)	ug/L	1800	ND	10	8257690	ND	10	8257690
Methyl Isobutyl Ketone	ug/L	640	ND	5.0	8257690	ND	5.0	8257690
Methyl t-butyl ether (MTBE)	ug/L	15	ND	0.50	8257690	ND	0.50	8257690
Styrene	ug/L	5.4	ND	0.40	8257690	ND	0.40	8257690
1,1,1,2-Tetrachloroethane	ug/L	1.1	ND	0.50	8257690	ND	0.50	8257690
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	0.40	8257690	ND	0.40	8257690
Tetrachloroethylene	ug/L	0.5	ND	0.20	8257690	ND	0.20	8257690
Toluene	ug/L	24	ND	0.20	8257690	ND	0.20	8257690
1,1,1-Trichloroethane	ug/L	23	ND	0.20	8257690	ND	0.20	8257690
1,1,2-Trichloroethane	ug/L	0.5	ND	0.40	8257690	ND	0.40	8257690
Trichloroethylene	ug/L	0.5	ND	0.20	8257690	ND	0.20	8257690
Trichlorofluoromethane (FREON 11)	ug/L	150	ND	0.50	8257690	ND	0.50	8257690
Vinyl Chloride	ug/L	0.5	ND	0.20	8257690	ND	0.20	8257690
p+m-Xylene	ug/L	-	ND	0.20	8257690	ND	0.20	8257690
o-Xylene	ug/L	-	ND	0.20	8257690	ND	0.20	8257690
Total Xylenes	ug/L	72	ND	0.20	8257690	ND	0.20	8257690
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	-	82		8257690	81		8257690
D4-1,2-Dichloroethane	%	-	117		8257690	120		8257690
D8-Toluene	%	-	87		8257690	88		8257690

No Fill Grey

Black

No Exceedance

Exceeds 1 criteria policy/level

Exceeds both criteria/levels

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)

Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition

Potable Ground Water - All Types of Property Use



Client Project #: BIGC-ENV-554C Site Location: 590 ARGUS RD

Sampler Initials: CW

# **GENERAL COMMENTS**

Each to	emperature is the a	average of up to t	hree cooler temperatures taken at receipt					
	Package 1	15.0°C						
Revise	evised report : Project information updated as per client request.							
Recult	esults relate only to the items tested							



### **QUALITY ASSURANCE REPORT**

B.I.G Consulting Inc.

Client Project #: BIGC-ENV-554C Site Location: 590 ARGUS RD

Sampler Initials: CW

			Matrix	Spike	ke SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8257690	4-Bromofluorobenzene	2022/10/01	98	70 - 130	99	70 - 130	87	%		
8257690	D4-1,2-Dichloroethane	2022/10/01	105	70 - 130	101	70 - 130	115	%		
8257690	D8-Toluene	2022/10/01	113	70 - 130	114	70 - 130	89	%		
8257690	1,1,1,2-Tetrachloroethane	2022/10/01	108	70 - 130	106	70 - 130	ND, RDL=0.50	ug/L	NC	30
8257690	1,1,1-Trichloroethane	2022/10/01	105	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30
8257690	1,1,2,2-Tetrachloroethane	2022/10/01	110	70 - 130	106	70 - 130	ND, RDL=0.40	ug/L	NC	30
8257690	1,1,2-Trichloroethane	2022/10/01	110	70 - 130	105	70 - 130	ND, RDL=0.40	ug/L	NC	30
8257690	1,1-Dichloroethane	2022/10/01	102	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30
8257690	1,1-Dichloroethylene	2022/10/01	95	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30
8257690	1,2-Dichlorobenzene	2022/10/01	101	70 - 130	100	70 - 130	ND, RDL=0.40	ug/L	NC	30
8257690	1,2-Dichloroethane	2022/10/01	98	70 - 130	93	70 - 130	ND, RDL=0.49	ug/L	NC	30
8257690	1,2-Dichloropropane	2022/10/01	103	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30
8257690	1,3-Dichlorobenzene	2022/10/01	94	70 - 130	94	70 - 130	ND, RDL=0.40	ug/L	NC	30
8257690	1,4-Dichlorobenzene	2022/10/01	115	70 - 130	116	70 - 130	ND, RDL=0.40	ug/L	NC	30
8257690	Acetone (2-Propanone)	2022/10/01	108	60 - 140	101	60 - 140	ND, RDL=10	ug/L	NC	30
8257690	Benzene	2022/10/01	97	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC	30
8257690	Bromodichloromethane	2022/10/01	106	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
8257690	Bromoform	2022/10/01	110	70 - 130	106	70 - 130	ND, RDL=1.0	ug/L	NC	30
8257690	Bromomethane	2022/10/01	102	60 - 140	99	60 - 140	ND, RDL=0.50	ug/L	NC	30
8257690	Carbon Tetrachloride	2022/10/01	102	70 - 130	100	70 - 130	ND, RDL=0.19	ug/L	NC	30
8257690	Chlorobenzene	2022/10/01	100	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30
8257690	Chloroform	2022/10/01	104	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30
8257690	cis-1,2-Dichloroethylene	2022/10/01	105	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
8257690	cis-1,3-Dichloropropene	2022/10/01	91	70 - 130	87	70 - 130	ND, RDL=0.30	ug/L	NC	30
8257690	Dibromochloromethane	2022/10/01	103	70 - 130	100	70 - 130	ND, RDL=0.50	ug/L	NC	30
8257690	Dichlorodifluoromethane (FREON 12)	2022/10/01	118	60 - 140	112	60 - 140	ND, RDL=1.0	ug/L	NC	30
8257690	Ethylbenzene	2022/10/01	84	70 - 130	85	70 - 130	ND, RDL=0.20	ug/L	NC	30
8257690	Ethylene Dibromide	2022/10/01	101	70 - 130	97	70 - 130	ND, RDL=0.19	ug/L	NC	30
8257690	Hexane	2022/10/01	111	70 - 130	111	70 - 130	ND, RDL=1.0	ug/L	NC	30
8257690	Methyl Ethyl Ketone (2-Butanone)	2022/10/01	119	60 - 140	113	60 - 140	ND, RDL=10	ug/L	NC	30
8257690	Methyl Isobutyl Ketone	2022/10/01	114	70 - 130	110	70 - 130	ND, RDL=5.0	ug/L	NC	30



Bureau Veritas Job #: C2S4043
Report Date: 2022/10/03

QUALITY ASSURANCE REPORT(CONT'D)

B.I.G Consulting Inc.

Client Project #: BIGC-ENV-554C Site Location: 590 ARGUS RD

Sampler Initials: CW

			Matrix Spike S		SPIKED	SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	
8257690	Methyl t-butyl ether (MTBE)	2022/10/01	88	70 - 130	86	70 - 130	ND, RDL=0.50	ug/L	NC	30	
8257690	Methylene Chloride(Dichloromethane)	2022/10/01	109	70 - 130	104	70 - 130	ND, RDL=2.0	ug/L	NC	30	
8257690	o-Xylene	2022/10/01	82	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30	
8257690	p+m-Xylene	2022/10/01	72	70 - 130	74	70 - 130	ND, RDL=0.20	ug/L	NC	30	
8257690	Styrene	2022/10/01	82	70 - 130	90	70 - 130	ND, RDL=0.40	ug/L	NC	30	
8257690	Tetrachloroethylene	2022/10/01	97	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30	
8257690	Toluene	2022/10/01	102	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30	
8257690	Total Xylenes	2022/10/01					ND, RDL=0.20	ug/L	NC	30	
8257690	trans-1,2-Dichloroethylene	2022/10/01	103	70 - 130	101	70 - 130	ND, RDL=0.50	ug/L	NC	30	
8257690	trans-1,3-Dichloropropene	2022/10/01	103	70 - 130	98	70 - 130	ND, RDL=0.40	ug/L	NC	30	
8257690	Trichloroethylene	2022/10/01	102	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30	
8257690	Trichlorofluoromethane (FREON 11)	2022/10/01	101	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC	30	
8257690	Vinyl Chloride	2022/10/01	99	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30	

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

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

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

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

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

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



 $\hbox{B.I.G Consulting Inc.}\\$ 

Client Project #: BIGC-ENV-554C Site Location: 590 ARGUS RD

Sampler Initials: CW

### **VALIDATION SIGNATURE PAGE**

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

Cistin Carriere	
Cristina Carriere, Senior Scientific Specialist	

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



applicable regulatory guidelines.

B.I.G Consulting Inc.

Client Project #: BIGC-ENV-554C Site Location: 590 ARGUS RD

Sampler Initials: CW

# Exceedance Summary Table – Reg153/04 T6-GW Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table	e is for information purp	oses only and should not	be considered a compreher	nsive listing o	or statement of co	nformance to