PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

1026 Cooke Boulevard, Burlington, Ontario

Client

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71095 Maplehurst Plaza
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Project Number

BIGC-ENV-605A

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September 15, 2023

Executive Summary

B.I.G. Consulting Inc. (BIG) was retained by Halton Standard Condominium Corporation No. 416 (Client), to complete a Phase Two Environmental Site Assessment (ESA) at the property located at 1026 Cooke Boulevard, Burlington, Ontario (Site).

This Phase Two ESA was conducted in accordance with the Phase Two ESA standard defined by Ontario Regulation 153/04 (O.Reg.153/04), as amended.

The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified in the Phase One ESA completed by BIG in July 2023; and, to obtain soil and groundwater data to characterize the Site to support the filing of a Record of Site Condition (RSC) on the Ontario Ministry of the Environment, Conservation and Parks (MECP) Brownfields Environmental Site Registry (BESR).

The findings of the Phase Two ESA conducted at the Site are summarized as follows:

1. The general stratigraphy at the Site, as revealed in the borehole logs, consists of surficial asphalt pavement followed by fill materials overlying native sand and silty sand, silty clay/silty clay till, sandy silt and silt/ sandy silt till and sand and silt till underlain by silty clay/shale complex and weathered shale bedrock. Shale bedrock was encountered between 19.7 m bgs to 20.7 m bgs the Site.
2. The overburden materials encountered are comprised of sand, silty sand, sandy silt, silt, sandy silt till, sand and silt till, silty clay, silty clay till and silty clay/shale complex. Based on the textural descriptions of these materials as inferred from borehole observations, coarse textured standards were applied as part of this Phase Two ESA.
3. The groundwater depths within the groundwater table across the Site ranged between approximately 7.92 m and 9.33 m bgs on July 3, 2023.
4. The soil analytical results indicated that no parameters were detected at concentrations above the applicable MECP (2011a) Table 3 Site Condition Standards in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional land use and coarse textured soils.
5. EC was detected in soil in exceedance of the applicable MECP Table 3 SCS at three (3) borehole locations (BH/MW1, BH/MW2, and BH/MW5) and SAR was detected in soil in exceedance of the applicable MECP Table 3 SCS at five (5) borehole locations (BH/MW1 to BH/MW5). BH/MW1 to BH/MW5 are located in a parking lot and de-icing salts have been used for vehicular or pedestrian traffic. 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 3 SCS. As de-icing salts are used at the Site for vehicular and pedestrian safety, EC and SAR are not considered COCs.
6. The groundwater analytical results indicated that no parameters were detected at concentrations above the applicable MECP (2011a) Table 3 Site Condition Standards in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional land use and coarse textured soils.

Conclusions and Recommendations

In order to proceed with the RSC filing, the following is recommended:

1. It should be noted that given the existing building located on-Site, some APECs were not investigated due to inaccessibility. Additional investigation to characterize the APECs will be required after demolition of the existing building.
2. Update Phase Two ESA.
3. File the RSC.

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1 Introduction

B.I.G. Consulting Inc. (BIG) was retained by Halton Standard Condominium Corporation No. 416 (Client)to conduct a Phase Two Environmental Site Assessment (ESA) for the property located at 1026 Cooke Boulevard, Burlington, Ontario (Site).

The objective of the investigation was to support the filing of a Record of Site Condition (RSC) in accordance with Ontario Regulation 153/04 (O.Reg.153/04), as amended. It is BIG's understanding that the Client is planning on redeveloping the Site for residential purposes in the future. Contact information for the Client is provided in Section 1.2.

The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified in the Phase One ESA completed by BIG in July 2023 and, to obtain soil and groundwater data to characterize the Site to support the preparation of the filing of an RSC on the Ontario Ministry of the Environment, Conservation and Parks (MECP) Brownfields Environmental Site Registry (BESR).

1.1 Site Description

The Site is located to the west of Cooke Boulevard and north of Plains Road East, in Burlington, Ontario, as shown on Figure 1. For simplicity of the description in this report, Cooke Boulevard is considered running north-south. The Site is rectangular in shape and measures approximately 3,200 m² in size. The Site is currently occupied by a slab-on-grade two-storey commercial building (the Site building). The Site building has a footprint of approximately 1,275 m^2 and occupies approximately 40 % of the Site. The areas surrounding the Site buildings are covered with landscaping and asphalt.

The Site is bound to the north by commercial properties, to the east by Cooke Boulevard followed by commercial and industrial properties, to the south by residential and commercial properties and to the west by residential and commercial properties.

1.2 Legal Description and Property Ownership

Refer to the table below for the Site identification information.

Site Details	
Municipal Addresses	1026 Cooke Boulevard, Burlington, Ontario
Current Owner	Halton Standard Condominium Corporation No. 416
Owner Address	71095 Maplehurst Plaza, Burlington, Ontario, L7T 4J8
Owner Contact Person	Name: Mr. David J. White Email: white@realcaptial.ca
Legal Description	**Unit 1, 1026 Cooke Boulevard**: Unit 1, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930. **Unit 2, 1026 Cooke Boulevard**: Unit 2, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930. **Unit 3, 1026 Cooke Boulevard**: Unit 3, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930.

Site Details	
	Unit 4, 1026 Cooke Boulevard: Unit 4, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930. **Unit 5, 1026 Cooke Boulevard**: Unit 5, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930.; City of Burlington.
Property Identification Numbers (PINs)	**Unit 1, 1026 Cooke Boulevard:** 25718-0001 (LT) **Unit 2, 1026 Cooke Boulevard:** 25718-0002 (LT) **Unit 3, 1026 Cooke Boulevard:** 25718-0003 (LT) **Unit 4, 1026 Cooke Boulevard:** 25718-0004 (LT) **Unit 5, 1026 Cooke Boulevard:** 25718-0005 (LT)
Property Size	3,200 m²
Approximate Universal Transverse Mercator (UTM) coordinates	Zone: 17 Easting: 593051.15 Northing: 4795668.02 (1m, NAD83, QGIS)

1.3 Current and Proposed Future Uses

At the time of the Phase Two ESA investigation the Site was currently occupied by one (1) slab-on-grade two-storey commercial building (the Site building). BIG understands that the proposed development will be comprised of one (1) high rise residential building with four (4) levels of underground parking garage.

The future use of the Phase Two Property is residential land use. Section 168.3.1 of the *Environmental Protection Act* does not prohibit the proposed future use of the Property. Current surrounding land uses are included on Figure 3.

1.4 Applicable Site Condition Standards

Analytical results obtained for Site 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 MECP document "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act',* ("SGWS" Standards), (MECP, 2011a). Tabulated background SCS (Table 1) applicable to environmentally sensitive sites and effects based generic SCS (Tables 2 to 9) applicable to non-environmentally sensitive sites are provided in the SGWS Standards. The effects based SCS (Tables 2 to 9) 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).

Tables 1 to 9 of SGW Standards are summarized as follows:

a) Table 1 - applicable to sites where background concentrations must be met (full depth), such as sensitive sites where site-specific criteria have not been derived;
b) Table 2 - applicable to sites with potable groundwater and full depth restoration;
c) Table 3 - applicable to sites with non-potable groundwater and full depth restoration;
d) Table 4 - applicable to sites with potable groundwater and stratified restoration;

e) Table 5 - applicable to sites with non-potable groundwater and stratified restoration;
f) Table 6 - applicable to sites with potable groundwater and shallow soils;
g) Table 7 - applicable to sites with non-potable groundwater and shallow soils;
h) Table 8 - applicable to sites with potable groundwater and that are within 30 m of a water body; and,
i) Table 9 - applicable to sites with non-potable groundwater that are within 30 m of a water body.

Application of the generic or background SCS to a specific site is based on a consideration of site conditions related to soil pH (i.e., surface and subsurface soil), thickness and extent of overburden material, (i.e., shallow soil conditions), 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.

For assessment purposes, BIG selected the MECP Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use and coarse soil. The selection of this category was based on the following factors:

a) More than two-thirds of the Site has an overburden thickness greater than 2 m.
b) The Site is not located within 30 m of a surface water body or an area of natural significance.
c) The soil at the Site has a 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 considered as non-potable for the following reasons: the Site is fully serviced by the City of Burlington water distribution system, the property is not located within an area designated in a municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of groundwater and the property, the property or one of the properties in the Phase One study area does not have a well-used or intended for use as a source of water for human consumption or agriculture, and all properties located, in whole or in part, within 250 metres of the boundaries of the property, are supplied by a municipal drinking water system, as defined in the Safe Drinking Water Act, 2002.
f) The future land use of the Site is residential.
g) The predominant soil type on the Site was considered to be coarse textured as per the borehole observations (refer to Appendix C).
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 Two ESA:

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

The following information was obtained from these maps:

a) The Site is at an elevation of approximately 100 metres above sea level (m asl). The surrounding properties to the north and west are generally at higher elevations than the Site, while the surrounding properties to the south and east are generally at lower elevations than the Site. The Site is relatively flat.
b) No water bodies are located on the Site. A tributary of Grindstone Creek is situated approximately 370 m north of the Site. Lake Ontario is situated approximately 870 m south of the Site. The inferred groundwater flow direction is likely towards the south/southeast.
c) The bedrock in the general area consists of shale, limestone, dolostone and siltstone and is part of the Queenston Formation.
d) The surficial geology of the Site is described as coarse-textured glaciolacustrine deposits consisting of sand, gravel, minor silt, clay and littoral deposits.
e) The physiography of the Site is within Iroquois Plain and is characterized as sand plains.

2.2 Past Environmental Investigations

The following environmental investigation was reviewed in support of this Phase Two ESA report:

a) BIG (2023) Phase One Environmental Site Assessment, 1026 Cooke Boulevard, Burlington, Ontario, dated July 12, 2023, prepared by B.I.G. Consulting Inc.

The applicable environmental information related to the Site are the soil and groundwater conditions and the information are summarized below:

BIG (2023) Phase One Environmental Site Assessment	
Objective	Identify former and existing area of potential environmental concern at the Site.
Area of Potential Environmental Concern Identified	• Importation of fill material of unknown quality on-Site. • Usage of De-icing salts on-Site. • Former chemical product manufacturer is located at 1038 Cooke Boulevard, north adjacent. • Former sign manufacturer and print shop are located at 1021 Waterdown Road, southwest adjacent. • Former auto services and former UST are located at 35 Plains Road East, southeast adjacent. • Former dry cleaner is located at 1025 Waterdown Road, southwest adjacent.

BIG (2023) Phase One Environmental Site Assessment	
	• Former semiconductor and other electronic component manufacturer is located at 1047 Cooke Boulevard, approximately 20 m northeast. • Former semiconductor and other electronic component manufacturer and other plastic product manufacturer are located at 1050 Cooke Boulevard, approximately 45 m north. • Former electronic parts manufacturer and print shop are located at 1062 Cooke Boulevard, approximately 90 m north.

3 Scope of the Investigation

3.1 Overview of Site Investigation

The objective of the Phase Two ESA was to assess the APECs identified in BIG's Phase One ESA; and, to obtain soil and groundwater data to characterize the Site to support the filing of an RSC on the MECP's BESR.

3.1.1 Scope of Work

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

a) Request public 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 five (5) boreholes (BH1 to BH5) up to a maximum depth of 24.9 m below ground surface (bgs);
c) Instrument five (5) of boreholes as a monitoring wells (BH/MW1 to BH/MW5);
d) Collect representative soil samples for laboratory chemical analysis of petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbon (PAHs), and metals and inorganics.
e) Develop the newly installed groundwater monitoring wells;
f) Collect groundwater levels from the newly installed and previously installed monitoring wells;
g) Collect groundwater samples from the newly installed and previously installed monitoring wells for laboratory chemical analysis of PHCs, VOCs, PAHs, and metals and inorganics.
h) Complete an elevation survey of all newly installed monitoring wells to determine the groundwater flow direction in the overburden aquifer beneath the Site;
i) Analyze the data and prepare a report of the findings.

3.2 Media Investigated

The focus of the Phase Two ESA was on the environmental conditions of the surficial topsoil, overburden materials, 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 Phase One Conceptual Site Model

This section presents the Phase One Conceptual Site Model (P1CSM) providing a narrative, graphical and tabulated description integrating information related to the Site geologic and hydrogeologic conditions, areas of potential environmental concern/potential contaminating activities, and the presence and distribution of potential contaminants of concern. These components are discussed in the following sections.

The Site is located to the west of Cooke Boulevard and north of Plains Road East, in Burlington, Ontario, as shown on Figure 1. For simplicity of the description in this report, Cooke Boulevard is considered running north-south. The Site is rectangular in shape and measures approximately 3,200 m² in size. The Site is currently occupied by a slab-on-grade two-storey commercial building (the Site building). The Site building has a footprint of approximately 1,275 m^2 and occupies approximately 40 % of the Site. The areas surrounding the Site buildings are covered with landscaping and asphalt.

The legal description of the Site as obtained from the chain of title are:

- **Unit 1, 1026 Cooke Boulevard:** Unit 1, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930.
- **Unit 2, 1026 Cooke Boulevard:** Unit 2, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930.
- **Unit 3, 1026 Cooke Boulevard**: Unit 3, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930.
- **Unit 4, 1026 Cooke Boulevard**: Unit 4, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930.
- **Unit 5, 1026 Cooke Boulevard**: Unit 5, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930.; City of Burlington.

The Property Identification Numbers (PIN) are as follows.

- **Unit 1, 1026 Cooke Boulevard**: 25718-0001 (LT)
- **Unit 2, 1026 Cooke Boulevard**: 25718-0002 (LT)
- **Unit 3, 1026 Cooke Boulevard**: 25718-0003 (LT)
- **Unit 4, 1026 Cooke Boulevard**: 25718-0004 (LT)
- **Unit 5, 1026 Cooke Boulevard:** 25718-0005 (LT)

A legal survey plan is included in Appendix E.

The approximate Universal Transverse Mercator (UTM) coordinates for the Site centroid was NAD83 17-4795668.02 m N, 593051.15 m E. The UTM coordinates are based on measurements obtained from QGIS. The accuracy of the centroid is estimated to range from 1 m.

Potentially Contaminating Activities

The Phase One ESA conducted by BIG in 2023 identified the following PCAs:

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
1.	1026 Cooke Boulevard	Importation of unknown quality of fill material (PCA#30 – Importation of Fill Material of Unknown Quality)	On-Site	Yes	On-Site
2.		De-icing salts usage (PCA "Other" – Usage of De-icing Salts)			
3.	1038 Cooke Boulevard	Former chemical product manufacturer (PCA#8 – Chemical Manufacturing, Processing and Bulk Storage)	Off-Site (north adjacent)	Yes	Located upgradient

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
4.	1021 Waterdown Road	Former sign manufacturer and print shop (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)	Off-Site (southwest adjacent)	Yes	Close proximity
5.	35 Plains Road East	Former auto services (PCA#10 – Commercial Autobody Shops)	Off-Site (southeast adjacent)	Yes	Close proximity
6.		Former UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
7.	1025 Waterdown Road	Former dry cleaner (PCA#37 – Operation of Dry Cleaning Equipment (where chemicals are used))	Off-Site (southwest adjacent)	Yes	Close proximity
8.	1047 Cooke Boulevard	Former semiconductor and other electronic component manufacturer (PCA#19 – Electronic and Computer Equipment Manufacturing)	Off-Site (20 m northeast)	Yes	Located upgradient
9.	1050 Cooke Boulevard	Former semiconductor and other electronic component manufacturer (PCA#19 – Electronic and Computer Equipment Manufacturing)	Off-Site (45 m north)	Yes	Located upgradient
10.		Former other plastic product manufacturer (PCA#43 – Plastics (including Fibreglass) Manufacturing and Processing)			
11.	1062 Cooke Boulevard	Former electronic parts manufacturer (PCA#19 – Electronic and Computer Equipment Manufacturing)	Off-Site (90 m north)	Yes	Located upgradient
12.		Print shop (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)			
13.	1022 Waterdown Road	Former dry cleaner (PCA#37 – Operation of Dry Cleaning Equipment	Off-Site (80 m west)	No	Inferred trans-gradient

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
		(where chemicals are used))			
14.	7 Plains Road West	Auto service garage (PCA#10 – Commercial Autobody Shops)	Off-Site (90 m southwest)	No	Located downgradient
15.		Former UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
16.	71 Plains Road East	Former service station (PCA#10 – Commercial Autobody Shops)	Off-Site (90 m east)	No	Inferred trans-gradient
17.		Former UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
18.		Former transformer oil spill (PCA#55 – Transformer Manufacturing, Processing and Use)			
19.	14 Plains Road East	Former service station (PCA#10 – Commercial Autobody Shops)	Off-Site (100 m south)	No	Located downgradient
20.		Gas station (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
21.	1060 Waterdown Road	Former concrete manufacturer (PCA#12 – Concrete, Cement and Lime Manufacturing)	Off-Site (115 m west)	No	Inferred trans-gradient
22.	18 Plains Road West	Former truck repair services (PCA#10 – Commercial Autobody Shops)	Off-Site (135 m south)	No	Located downgradient
23.		Former USTs (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
24.		Former dry cleaner (PCA#37 – Operation of Dry Cleaning Equipment (where chemicals are used).)			

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
25.		Former painting workshop (PCA#39 Paints Manufacturing, Processing and Bulk Storage)			
26.	1074 Cooke Boulevard	Former semiconductors, electronic coils, inductors, electronic components manufacturer (PCA#19 – Electronic and Computer Equipment Manufacturing)	Off-Site (135 m north)	No	Located at a significant distance
27.		Former print shop (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)			
28.	2 Masonry Court	Former semiconductor and other electronic component manufacturer (PCA#19 – Electronic and Computer Equipment Manufacturing)	Off-Site (135 m north)	No	Located at a significant distance
29.	91 Plains Road East	Former retail fuel tank (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (180 m east)	No	Inferred trans-gradient
30.	29 Plains Road West	Former service station (PCA#10 – Commercial Autobody Shops)	Off-Site (180 m west)	No	Inferred trans-gradient
31.		Former UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
32.	92 Plains Road East	Former heating oil AST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (210 m east)	No	Inferred trans-gradient
33.	1120 Cooke Boulevard	Former concrete manufacturer (PCA#12 – Concrete, Cement and Lime Manufacturing)	Off-Site (230 m north)	No	Located at a significant distance
34.		Former fuel storage tank (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			

(1) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a Phase One study area.

The identification of the PCAs both on-Site and off-Site within the Phase One study area are shown on Figure 3. Based on the rationale provided, it is the opinion of the Qualified Person (QP) that twelve (12) PCAs are considered APECs at the Site. Further discussion is provided below.

Areas of Potential Environmental Concern

Based on the evaluation of PCAs located on- and off-Site, twelve (12) APECs were identified, as presented below:

APEC	Location of APEC on Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1: Importation of unknown quality of fill material	Entire Site	#30 – Importation of Fill Material of Unknown Quality	On-Site	PAHs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Soil and Groundwater
APEC 2: De-icing salts usage	Exterior of the Site Building	"Other" – Usage of De-icing Salts	On-Site	Electrical Conductivity, SAR, Na and Cl-	Soil and Groundwater
APEC 3: Former chemical product manufacturer	Northern portion	#8 – Chemical Manufacturing, Processing and Bulk Storage	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 4: Former sign manufacturer and print shop	Southwestern portion	#31 – Ink Manufacturing, Processing and Bulk Storage	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 5: Former auto services	Southeastern portion	#10 – Commercial Autobody Shops	Off-Site	PHCs, BTEX and VOCs	Groundwater
APEC 6: Former UST	Southeastern portion	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs and BTEX	Groundwater
APEC 7: Former dry cleaner	Southwestern portion	#37 – Operation of Dry Cleaning Equipment (where chemicals are used)	Off-Site	VOCs	Groundwater
APEC 8: Former semiconductor and other electronic component manufacturer	Northeastern portion	#19 – Electronic and Computer Equipment Manufacturing	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater

APEC	Location of APEC on Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 9: Former semiconductor and other electronic component manufacturer	Northern portion	#19 – Electronic and Computer Equipment Manufacturing	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 10: Former plastic product manufacturer	Northern portion	#43 – Plastics (including Fibreglass) Manufacturing and Processing	Off-Site	VOCs	Groundwater
APEC 11: Former electronic parts manufacturer	Northern portion	#19 – Electronic and Computer Equipment Manufacturing	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 12: Print shop	Northern portion	#31 – Ink Manufacturing, Processing and Bulk Storage	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater

(1) Areas of potential environmental concern means the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment including through,
   a. Identification of past or present uses on, in or under the phase one property and,
   b. Identification of potentially contaminating activities.

(2) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area.

PHCs = petroleum hydrocarbons; BTEX = benzene, toluene, ethylbenzene, xylenes; VOCs = volatile organic compounds; PAHs = polycyclic aromatic hydrocarbons; As = arsenic; Sb = antimony; Se = selenium; B-HWS = boron-hot water soluble; Cr (VI) = hexavalent chromium; Hg = mercury; CN- = cyanide; SAR = sodium adsorption ratio; Na = sodium; Cl- = chloride.

The surficial geology of the Site is described as coarse-textured glaciolacustrine deposits consisting of sand, gravel, minor silt, clay and littoral deposits. The physiography of the Site is within Iroquois Plain and is characterized as sand plain. The bedrock in the general area consists of shale, limestone, dolostone and siltstone and is part of the Queenston Formation.

Based on the review of the OBM and Toporama map, the Site is at an elevation of approximately 100 metres above sea level (m asl). The surrounding properties to the north and west are generally at higher elevations than the Site, while the surrounding properties to the south and east are generally at lower elevations than the Site. The Site is relatively flat.

No water bodies are located on the Site. A tributary of Grindstone Creek is situated approximately 370 m north of the Site. Lake Ontario is situated approximately 870 m south of the Site. The inferred groundwater flow direction is likely towards the south/southeast.

Based on the review of available resources from the City of Burlington and the Ministry of Natural Resources and Forestry (MNRF), no areas of natural significance were identified at the Site or within the Phase One Study Area.

The Site utilities and services were identified at the Site based on the relevant utility infrastructure observed during the Site reconnaissance and are summarized in the table below. It is noted that the precise underground location of the utilities cannot be determined without professional locate services.

Utility	Source	Location	Site Entry
Storm Sewer	Municipality – City of Burlington	Northeast	Catch basins are located on northeastern portion of the Site. A storm sewer line is anticipated to enter the Site from the northeastern Site boundary
Sanitary Sewer	Municipality – City of Burlington	East	Manholes are located along Cooke Boulevard. A sanitary sewer line is anticipated to enter the Site from the eastern Site boundary
Water	Municipality – City of Burlington	East	Given that the Site is located in a mixed residential, commercial, and industrial area, the water lines are anticipated to run along Cooke Boulevard.
Natural Gas	Enbridge Gas	North	Natural gas pipes and meter are located on the northern portion of the Site building, the natural gas lines are anticipated to run along Cooke Boulevard.
Electricity	Burlington Hydro	Southeast	A transformer is located in the southeastern portion of the Site. Overhead hydro lines were observed along Cooke Boulevard.

3.4 Deviations from Sampling and Analysis Plan

The field investigative and sampling program was carried out following the requirements of the SSAP, shown in Appendix A. No deviations from the SSAP were reported which affected the sampling and data quality objectives for the Site.

3.5 Impediments

The entire 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 five (5) 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 overburden soils 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 cable, telephone, natural gas, electrical lines, as well as water, sewer, storm water and sanitary lateral conduits were marked out by public locating companies. In addition, a private utility locating service was also retained to clear the individual borehole locations.

The fieldwork for the soil investigative portion of the Phase Two ESA was carried out between June 26 to June 30, 2023.

The boreholes were advanced by using a power operated hollow stem continuous auger equipment (track mounted drill rig) under full-time supervision of BIG staff to a maximum depth of 24.9 m bgs to sufficiently assess the APECs identified in the Phase One ESA. The approximate locations of the boreholes and monitoring wells are shown on Figure 4.

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 C. Representative soil samples were recovered at regular intervals using a stainless-steel split spoon sampler in all boreholes.

4.3 Soil Sampling

Soil samples for geologic characterization and chemical analysis were collected on a discrete basis in the overburden materials using 5 cm diameter, 60 cm long, split spoon samplers advanced into the subsurface using a track 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 C.

Measures were taken in the field and during transport to preserve sample integrity prior to chemical analysis. Recommended volumes of soil samples selected for chemical analysis were collected from the recovered cores into pre-cleaned, laboratory-supplied glass sample jars/vials identified for the specified analytical test group. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory, Bureau Veritas (BV) of Mississauga, Ontario. The samples were transported/submitted within the acceptable holding times to BV following Chain of Custody protocols for chemical 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. Drill cuttings were placed in labeled, sealed drums upon completion of sampling. Five (5) of the boreholes that were advanced were instrumented with monitoring wells (BH/MW1 to BH/MW5).

Soil samples submitted for specific chemical 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 boreholes logs presented in Appendix C.

Three (3) duplicate soil samples were collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample I.D.	Analytical Test Group
BH/MW2-SS1	DUP2010	PAHs
BH/MW3-SS2	DUP3020	Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR
BH/MW5-SS2	DUP5020	PHCs, VOCs

4.4 Field Screening Measurements

A portion of each soil core was placed in a sealed "Ziploc®" plastic bag and allowed to reach ambient temperature prior to field screening using a MiniRae 3000 Photo Ionization Detection (PID) instrument, calibrated with isobutylene gas. The measurements were made by inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These readings provide a real-time indication of the relative concentration of combustible vapours encountered in the subsurface during drilling and are used to aid in the assessment of the vertical and horizontal extent of contamination and the selection of soil samples for analysis.

The field screening measurements, in parts per million (ppm) isobutylene equivalents, are presented on the borehole logs in Appendix C.

Each sample was additionally examined for visual, textural, and olfactory classification at the time of sampling.

4.5 Groundwater: Monitoring Well Installation

Five (5) boreholes were instrumented with groundwater monitoring wells at the Site (BH/MW1 to BH/MW5). 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 were installed by a licensed well contractor.

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

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. Monitoring well completion details are summarized in Table 3.

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;
d) Cleaning of augers between sampling locations; and,
e) The use of hollow stem augers to prevent loose and potentially contaminated material in overlying layers from sloughing into the boreholes and coming into contact with groundwater.

4.6 Monitoring Well Development

Upon completion of monitoring well installation, the new monitoring wells were developed to remove fine sediment particles from the sand pack and enhance hydraulic communication with the surrounding formation waters. The newly installed monitoring wells were developed between June 28 and July 3, 2023 using dedicated Waterra® tubing 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 monitoring well, were conducted on newly installed monitoring wells so that groundwater flow and direction below the Site could be assessed and groundwater samples could be collected. These groundwater monitoring activities were conducted on July 3, 2023. Water levels were measured with respect to the top of casing by means of an electronic water level meter. The water level measurements were recorded on water level log sheets or in a bound field notebook. The water level meter probe was decontaminated between monitoring well locations.

4.8 Monitoring Well Purging

Monitoring wells were purged prior to groundwater sample collection. Approximately three (3) wetted well volumes of water, or until dry, were purged from 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.

Well purging was monitored by taking field measurements of turbidity, redox, pH, specific conductance and temperature and water level for every standing well (i.e., wetted casing) volume removed. Well purging continued until the purged water had chemically stabilized as indicated by field parameter measurements, and the water was of sufficient clarity as indicated by turbidity measurements. The groundwater was considered to be chemically stable when the pH measurements of three (3) successive purge well volumes agreed to within ± 1 pH units, the specific conductance within ± 10%, and turbidity ± 10% of the average value of the three readings with the temperature within ± 3%. Field parameters including pH, conductivity and temperature were monitored during monitoring well purging using a Horiba U-52 multiparameter water quality meter. All development water was collected and stored on-Site in labeled, sealed containers.

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

4.9 Field Measurements of Water Quality Parameters

Field parameters including pH, conductivity, and temperature were monitored during well development using a Horiba U-52 multiparameter water quality meter.

4.10 Groundwater Sampling

Upon completion of purging, the newly installed monitoring wells BH/MW1 to BH/MW5 were sampled on July 5, 2023.

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 Bureau Veritas (BV) under Chain of Custody protocols, within 24 hours of sample collection or approved holding times.

4.11 Sediment Sampling

As no water body was present at the Site, sediment sampling was not part of the Phase Two ESA.

4.12 Analytical Testing

Analytical testing was performed by BV which is 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".

4.12.1 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, the rationale for each sample and the requested analyses are summarized below.

Table 2: Summary of Soil Samples Submitted for Chemical Analyses

Soil Sample ID	Rationale	Requested Analyses	Consultant
BH/MW1-SS1	APECs 1, 2 and Site characterization	PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG
BH/MW1-SS2	Site characterization	PHCs, VOCs	BIG
BH/MW2-SS1	APECs 1, 2 and Site characterization	PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG
BH/MW2-SS3	Site characterization	PHCs, VOCs	BIG
BH/MW3-SS2	APECs 1, 2 and Site characterization	PHCs, VOCs, PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG
BH/MW4-SS2	APECs 1, 2 and Site characterization	PHCs, VOCs, PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG
BH/MW5-SS2	Site characterization	PHCs, VOCs	BIG
BH/MW5-SS4	APECs 1, 2 and Site characterization	PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG

4.12.2 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 3: Summary of Groundwater Samples Submitted for Chemical Analyses

Monitoring Well ID	Rationale	Requested Analyses	Consultant
BH/MW1	APECs 1, 2, 3, 9, 10, 11, and 12 characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG
BH/MW2	APECs 1, 2 and Site characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG
BH/MW3	APECs 1, 2, 3, 8, 9, 10, 11, and 12 characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG
BH/MW4	APECs 1, 2 and Site characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG
BH/MW5	APECs 1, 2, 5, and 6 characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG

4.13 Elevation Survey

An elevation survey was conducted to obtain vertical control of the newly installed borehole and monitoring well locations. The ground surface elevations of each newly installed monitoring well location was surveyed relative to the geodetic benchmarks. The geodetic benchmark is a catch basin within the northeastern portion of the Site. The benchmark had an elevation of 100.54 m asl. A summary of groundwater levels and elevations is provided below.

Table 4: Summary of Groundwater Levels and Elevations

Monitoring Well ID	Ground Surface Elevation	Groundwater Level (m bgs)	Groundwater Elevation (m asl)	Groundwater Monitoring Date
BH/MW1	101.98	9.33	92.65	July 3, 2023
BH/MW2	101.67	9.00	92.67	July 3, 2023
BH/MW3	100.64	7.92	92.72	July 3, 2023
BH/MW4	101.71	9.06	92.65	July 3, 2023
BH/MW5	101.01	8.38	92.63	July 3, 2023

The elevation survey was completed using BIG's own Sokkia B40. The survey equipment was calibrated by BIG personnel prior to use.

4.14 Quality Assurance and Quality Control Measures

Quality Assurance/Quality Control (QA/QC) measures, as set out in the Sampling and Analysis Plan, 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 chemical analyses were collected from the retrieved soil cores and placed directly into pre-cleaned, laboratory-supplied glass jars or vials. Sample volumes were consistent with analytical test group requirements as specified by the receiving laboratory.

Groundwater samples were collected into pre-cleaned laboratory-supplied vials or 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 PHC F1, PHC F2, BTEX, and VOCs were inspected for the presence of gas bubbles and the presence of head space, where volatiles may partition into.

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

Documentation procedures were followed to confirm sample identification and track 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 contractual laboratory.

Field QA/QC samples were collected during the soil and groundwater sampling. Duplicate samples were collected to evaluate sampling precision and trip blanks were included to evaluate the potential for sample cross-contamination during handling and transport.

Three (3) duplicate soil samples were collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample I.D.	Analytical Test Group
BH/MW2-SS1	DUP2010	PAHs
BH/MW3-SS2	DUP3020	Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR
BH/MW5-SS2	DUP5020	PHCs, VOCs

One (1) duplicate groundwater sample was collected for QA/QC purposes as summarized below.

Monitoring Well	Duplicate Sample I.D.	Analytical Test Group
BH/MW4	DUP40	PHCs, VOCs, PAHs, Metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-

There were no significant deviations from the SSAP.

5 Review and Evaluation

5.1 Geology

The soil investigation conducted at the Site consisted of the advancement of five (5) boreholes into the overburden materials up to a maximum depth of 24.9 m bgs. Borehole logs describing geologic details of the soil cores recovered during the Site drilling activities are presented in Appendix C. 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 revealed in the borehole logs, consists of surficial asphalt pavement followed by fill materials overlying native sand and silty sand, silty clay/silty clay till, sandy silt and silt/ sandy silt till and sand and silt till underlain by silty clay/shale complex and weathered shale bedrock. Shale bedrock was encountered between 19.7 m bgs to 20.7 m bgs the Site.

A brief description of the soil stratigraphy at the Site, in order of depth, is summarized in the following sections. The interpreted Site geology is shown on the enclosed cross sections (Figures 7 and 8).

5.1.1 Surficial Material

All boreholes were advanced through the existing asphalt pavement, consisting of approximately 80 to 100 mm (average 86 mm) thick asphaltic concrete over approximately 150 to 320 mm (average 222 mm) thick granular base.

5.1.2 Fill Material

Below the asphalt pavement, fill materials were encountered to depths varying between 1.5 and 4.6 m bgs in all boreholes. The fills are heterogeneous and predominantly consisted of sand with a trace of clay, silt and gravel .

5.1.3 Native Material

Sand and Silty Sand

Below fill material in all boreholes, native sand and silty sand deposits were encountered. The sandy deposits extended to depths varying from 12.2 to 13.7 m bgs. These deposits were brown to reddish brown in color and contained a trace of clay and gravel.

Silty Clay

A stratum of silty clay was encountered below or within the sand, silty sand and sandy silt deposits in all boreholes. This deposit extended to depths ranging from approximately 6.1 to 18.3 m bgs.

Silty Clay Till

A stratum of silty clay till was encountered below sand or silty clay deposits in boreholes BH/MW2, BH/MW3 and BH/MW5. This deposit extended to depths ranging from approximately 15.6 to 18.3 m bgs. Cobbles and boulders were also anticipated in these deposits.

Sandy Silt and Silt

A stratum of sandy silt/silt was encountered below silty clay or silty clay till in boreholes BH/MW2 to BH/MW4. The sandy silt/silt deposits extended to depths varying from 16.8 to 18.3 m bgs.

Sandy Silt Till and Sand and Silt Till

A stratum of sandy silt till and sand and silt till was encountered below silty clay or silt in boreholes BH/MW1, BH/MW2 and BH/MW4. The tills extended to a depth of approximately 19.8 m bgs.

Silty Clay/Shale Complex

A stratum of silty clay/shale complex was encountered below the native sandy silt, sandy silt till and silty clay till in all boreholes except BH/MW4. The deposits extended to depths ranging from approximately 19.7 to 20.6 m bgs. This stratum was difficult to penetrate with the drilling augers due to the fragmented shale/limestone content and its hard consistency. Cobbles and boulders were also anticipated in these deposits.

5.1.4 Bedrock

Below the sand and silt till or silty clay/shale complex in all boreholes, reddish brown to grey, highly weathered to fresh shale bedrock from Queenston Formation was encountered/inferred. Boreholes BH/MW2 to BH/MW5 were terminated within the shale bedrock at depths ranging from 19.8 to 24.8 m bgs while the split spoon got refusal within probable shale bedrock in BH/MW1.

Refer to the geological cross sections in Figures 7 and 8 for an overview of the Site stratigraphy.

5.2 Groundwater Elevations and Flow Direction

The monitoring well network advanced at the Site consists of five (5) monitoring wells advanced by BIG screened within the overburden material. The 3 m long screens were installed within the overburden to intercept the overburden groundwater aquifer.

Based on the previous environmental investigations completed at the Site, the inferred groundwater flow direction was considered to be to the south/southeast in the Phase One ESA. Based on the static water levels observed, groundwater flow across the Site is interpreted to be to the south direction. The interpreted groundwater flow direction is presented on Figure 6.

5.2.1 Groundwater: Hydraulic Gradients

The horizontal hydraulic gradient, between each monitoring well pair, is calculated using the following equation:

$$i = Ah/As$$

Where,

i = horizontal hydraulic gradient;

Ah (m) = groundwater elevation difference; and,

As (m) = separation distance.

The horizontal hydraulic gradient in groundwater, based on groundwater measurements collected on July 3, 2023 was 0.002 m/m between BH/MW3 and BH/MW4 and 0.001 m/m between BH/MW4 and BH/MW5. The geomean of the horizontal hydraulic gradient is 0.002 m/m.

It is noted that vertical hydraulic gradients were not evaluated for this site as a second water bearing unit was not identified at depths investigated at the Site.

5.2.2 Groundwater: Hydraulic Conductivity

Hydraulic conductivity testing was completed in the hydrogeological investigation conducted by BIG. Single Well Response Test (SWRT) analysis was conducted at selected monitoring wells (BH/MW1, BH/MW2, BH/MW3, BH/MW4, BH/MW5). The hydraulic conductivity values for each of the tested wells were calculated from the SWRT data using Aqtesolv Software and the Hvorlsev solution for unconfined conditions. The hydraulic conductivity (K) ranged from 4.53×10^{-5} to 3.01×10^{-6} m/s, with a geometric mean of 1.58×10^{-5} m/s.

5.3 Soil Texture

The native materials encountered are comprised of sand, silty sand, sandy silt, silt, sandy silt till, sand and silt till, silty clay, silty clay till and silty clay/shale complex. Based on the textural descriptions of these materials as inferred from borehole observations, coarse textured standards were applied as part of this Phase Two ESA.

5.4 Soil Field Screening

All soil samples were submitted for chemical analyses based on field observations, location, and depth.

5.5 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 B and copies of the laboratory Certificates of Analysis for the analyzed soil samples are provided in Appendix F.

5.5.1 PHCs

The soil samples submitted for PHCs analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS:

Refer to Table B.1 for a summary of the soil results analyzed for PHCs.

5.5.2 BTEX

The soil samples submitted for BTEX analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Tables B.2 for a summary of the soil results analyzed for BTEX.

5.5.3 VOCs

The soil samples submitted for VOCs analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Table B.2 for a summary of the soil results analyze for VOCs.

5.5.4 PAHs

The soil samples submitted for PAHs analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS:

Refer to Table B.3 for a summary of the soil results analyzed for PAHs.

5.5.5 Metals

The soil samples submitted for Metals analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS

Refer to Table B.4 for a summary of the soil results analyzed for metals.

5.5.6 EC and SAR

EC was detected in soil in exceedance of the applicable MECP Table 3 SCS at three (3) borehole locations (BH/MW1, BH/MW2, and BH/MW5) and SAR was detected in soil in exceedance of the applicable MECP Table 3 SCS at five (5) borehole locations (BH/MW1 to BH/MW5). BH/MW1 to BH/MW5 are located in a parking lot and de-icing salts have been salt for vehicular or pedestrian traffic.

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 3 SCS. As de-icing salts are used at the Site for vehicular and pedestrian safety, EC and SAR are not considered COCs.

Refer to Table B.4 for a summary of the soil results analyzed for EC and SAR.

5.5.7 Chemical Transformation and Soil Contaminant Sources

No parameters were identified in soil at concentrations in exceedance of the applicable MECP Table 3 SCS. As such it is not expected that any chemical transformations (i.e., presence of parent compounds and daughter products) has occurred on the Site.

5.5.8 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.

5.6 Groundwater Quality

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

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

5.6.1 PHCs

Groundwater samples submitted for PHCs analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Table B.5 for a summary of the groundwater results analyzed for PHCs.

5.6.2 BTEX

Groundwater samples submitted for BTEX analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Tables B.6 for a summary of the groundwater results analyzed for BTEX.

5.6.3 VOCs

Groundwater samples submitted for VOC analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Table B.6 for a summary of the groundwater results analyzed for VOCs.

5.6.4 PAHs

Groundwater samples submitted for PAHs analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Table B.7 for a summary of the groundwater results analyzed for PAHs.

5.6.5 Metals

Groundwater samples submitted for Metals analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Table B.8 for a summary of the groundwater results analyzed for metals.

5.6.6 Sodium and Chloride

Groundwater samples submitted for sodium and chloride analysis indicated that all parameters were detected below the applicable MECP Table 3 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Table B.8 for a summary of the groundwater results analyzed for sodium and chloride.

5.6.7 Chemical Transformation and Contaminant Sources

No parameters were detected in groundwater above the applicable MECP Table 3 SCS. Therefore, chemical transformations and contaminant sources are not considered.

5.6.8 Evidence of Non-Aqueous Phase Liquid

Inspection of the purged groundwater retrieved from the monitoring wells did not indicate the presence of NAPL, staining, sheen, or odour in groundwater.

5.7 Sediment Quality

As no surface water body was located on-Site, the Phase Two ESA did not include sediment sampling.

5.8 Quality Assurance and Quality Control 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 and groundwater 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;
e) Sample documentation including Chain of Custody protocols; and
f) The collection of QC samples.

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, amended as of July 1, 2011 (MECP 2011b). Samples were preserved at the required temperatures in pre-chilled insulated coolers and met applicable holding time requirements, when relinquished to the receiving laboratory.

Field QA/QC samples were collected during the soil and groundwater sampling. Duplicate samples were collected to evaluate sampling precision.

Three (3) duplicate soil samples were collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample I.D.	Analytical Test Group
BH/MW2-SS1	DUP2010	PAHs
BH/MW3-SS2	DUP3020	Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR
BH/MW5-SS2	DUP5020	PHCs, VOCs

One (1) duplicate groundwater sample was collected for QA/QC purposes as summarized below.

Monitoring Well	Duplicate Sample I.D.	Analytical Test Group
BH/MW4	DUP40	PHCs, VOCs, PAHs, Metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-

The field duplicate sample results were quantitatively evaluated by calculating the relative percent difference (RPDs). Assessment of the duplicate soil and groundwater samples, where quantifiable, showed that the results met analytical test group specific acceptance criteria as specified in the MECP Protocol document (MECP 2011b). Considering the heterogeneity of the fill material, the overall assessment indicates that the soil samples were collected within an acceptable level of precision, and the data is acceptable quality for meeting the objectives of the Phase Two ESA.

The subcontract laboratories used during this investigation were Bureau Veritas (BV). BV is accredited by the Standards Council of Canada/Canadian Association for Laboratory Accreditation (Accredited Laboratory No. A3200 and No. 15025, respectively), 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 reporting the results of all the chemical analyses performed on the submitted soil and groundwater samples. Copies of the BV Certificates of Analysis are provided in Appendix F. Review of the Certificates of Analysis prepared by BV 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 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 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. 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 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 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 results, the analytical results reported by BV are of acceptable quality and data qualifications are not required.

5.9 Phase Two Conceptual Site Model

This section presents a Conceptual Site Model (CSM) providing a narrative, graphical, and tabulated description integrating information related to the Site geologic and hydrogeologic conditions, areas of potential environmental concern/potential contaminating activities, the presence and distribution of potential contaminants of concern, contaminant fate and transport, and potential exposure pathways.

5.9.1 Introduction

The Site is located to the west of Cooke Boulevard and north of Plains Road East, in Burlington, Ontario, as shown on Figure 1. For simplicity of the description in this report, Cooke Boulevard is considered running north-south. The Site is rectangular in shape and measures approximately 3,200 m² in size.

The Site is currently occupied by a slab-on-grade two-storey commercial building (the Site building). The Site building has a footprint of approximately 1,275 m^2 and occupies approximately 40 % of the Site. The areas surrounding the Site buildings are covered with landscaping and asphalt. The Site is located within a mixed residential, commercial and industrial area of Burlington. The nearest surface water body is a tributary of Grindstone Creek which is situated approximately 370 m north of the Site. Lake Ontario is situated approximately 870 m south of the Site. A Site Location Map and Site layout Plan are shown in Figures 1 and 2, respectively.

Refer to the following table for the Site identification information.

Table 1: Site Information

Site Details	
Municipal Address	1026 Cooke Boulevard, Burlington, Ontario
Current Owner	Halton Standard Condominium Corporation No. 416
Owner Address	71095 Maplehurst Plaza, Burlington, Ontario, L7T 4J8
Owner Contact Person	Name: Mr. David J. White Email: white@realcaptial.ca
Legal Description	**Unit 1, 1026 Cooke Boulevard**: Unit 1, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930. **Unit 2, 1026 Cooke Boulevard**: Unit 2, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930. **Unit 3, 1026 Cooke Boulevard**: Unit 3, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930. **Unit 4, 1026 Cooke Boulevard**: Unit 4, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930. **Unit 5, 1026 Cooke Boulevard**: Unit 5, Level 1, Halton Standard Condominium Plan No. 416 and its Appurtenant Interest. The Description of the Condominium Property is: Lot 6, Plan 20M507, Burlington, Subject to Ease's as Set Out in Schedule 'A' of Declaration HR161930.; City of Burlington.
Property Identification Number (PIN)	**Unit 1, 1026 Cooke Boulevard:** 25718-0001 (LT) **Unit 2, 1026 Cooke Boulevard:** 25718-0002 (LT) **Unit 3, 1026 Cooke Boulevard:** 25718-0003 (LT) **Unit 4, 1026 Cooke Boulevard:** 25718-0004 (LT) **Unit 5, 1026 Cooke Boulevard:** 25718-0005 (LT)
Property Size	3,200 m^2
Approximate Universal Transverse Mercator (UTM)	Zone: 17 Easting: 593051.15 Northing: 4795668.02 (1m, NAD83, QGIS)

5.9.2 Potentially Contaminating Activities and Areas of Potential Environmental Concern

A Phase One ESA, in accordance with O. Reg. 153/04, as amended, has been conducted by BIG for the Site.

The surrounding land use plan and PCAs identified On-Site and in the Phase One ESA Study Area are shown on Figure 3. A list of all PCA's identified at the Site and within the Phase One ESA Study Area are presented below:

Table 2: Potentially Contaminating Activities in the Phase One Study Area

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
1.	1026 Cooke Boulevard	Importation of unknown quality of fill material (PCA#30 – Importation of Fill Material of Unknown Quality)	On-Site	Yes	On-Site
2.		De-icing salts usage (PCA "Other" – Usage of De-icing Salts)			
3.	1038 Cooke Boulevard	Former chemical product manufacturer (PCA#8 – Chemical Manufacturing, Processing and Bulk Storage)	Off-Site (north adjacent)	Yes	Located upgradient
4.	1021 Waterdown Road	Former sign manufacturer and print shop (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)	Off-Site (southwest adjacent)	Yes	Close proximity
5.	35 Plains Road East	Former auto services (PCA#10 – Commercial Autobody Shops)	Off-Site (southeast adjacent)	Yes	Close proximity
6.		Former UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
7.	1025 Waterdown Road	Former dry cleaner (PCA#37 – Operation of Dry Cleaning Equipment (where chemicals are used))	Off-Site (southwest adjacent)	Yes	Close proximity
8.	1047 Cooke Boulevard	Former semiconductor and other electronic component manufacturer (PCA#19 – Electronic and Computer Equipment Manufacturing)	Off-Site (20 m northeast)	Yes	Located upgradient

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
9.	1050 Cooke Boulevard	Former semiconductor and other electronic component manufacturer (PCA#19 – Electronic and Computer Equipment Manufacturing)	Off-Site (45 m north)	Yes	Located upgradient
10.		Former other plastic product manufacturer (PCA#43 – Plastics (including Fibreglass) Manufacturing and Processing)			
11.	1062 Cooke Boulevard	Former electronic parts manufacturer (PCA#19 – Electronic and Computer Equipment Manufacturing)	Off-Site (90 m north)	Yes	Located upgradient
12.		Print shop (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)			
13.	1022 Waterdown Road	Former dry cleaner (PCA#37 – Operation of Dry Cleaning Equipment (where chemicals are used))	Off-Site (80 m west)	No	Inferred trans-gradient
14.	7 Plains Road West	Auto service garage (PCA#10 – Commercial Autobody Shops)	Off-Site (90 m southwest)	No	Located downgradient
15.		Former UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
16.	71 Plains Road East	Former service station (PCA#10 – Commercial Autobody Shops)	Off-Site (90 m east)	No	Inferred trans-gradient
17.		Former UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
18.		Former transformer oil spill (PCA#55 – Transformer Manufacturing, Processing and Use)			

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
19.	14 Plains Road East	Former service station (PCA#10 – Commercial Autobody Shops)	Off-Site (100 m south)	No	Located downgradient
20.		Gas station (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
21.	1060 Waterdown Road	Former concrete manufacturer (PCA#12 – Concrete, Cement and Lime Manufacturing)	Off-Site (115 m west)	No	Inferred trans-gradient
22.	18 Plains Road West	Former truck repair services (PCA#10 – Commercial Autobody Shops)	Off-Site (135 m south)	No	Located downgradient
23.		Former USTs (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
24.		Former dry cleaner (PCA#37 – Operation of Dry Cleaning Equipment (where chemicals are used).)			
25.		Former painting workshop (PCA#39 Paints Manufacturing, Processing and Bulk Storage)			
26.	1074 Cooke Boulevard	Former semiconductors, electronic coils, inductors, electronic components manufacturer (PCA#19 – Electronic and Computer Equipment Manufacturing)	Off-Site (135 m north)	No	Located at a significant distance
27.		Former print shop (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)			
28.	2 Masonry Court	Former semiconductor and other electronic component manufacturer (PCA#19 – Electronic and	Off-Site (135 m north)	No	Located at a significant distance

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
		Computer Equipment Manufacturing)			
29.	91 Plains Road East	Former retail fuel tank (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (180 m east)	No	Inferred trans-gradient
30.	29 Plains Road West	Former service station (PCA#10 – Commercial Autobody Shops)	Off-Site (180 m west)	No	Inferred trans-gradient
31.		Former UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			
32.	92 Plains Road East	Former heating oil AST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (210 m east)	No	Inferred trans-gradient
33.	1120 Cooke Boulevard	Former concrete manufacturer (PCA#12 – Concrete, Cement and Lime Manufacturing)	Off-Site (230 m north)	No	Located at a significant distance
34.		Former fuel storage tank (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)			

(1) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area

The identification of the PCAs both on-Site and off-Site within the Phase One study area is shown on Figure 3.

Based on the rationale provided, it is the opinion of the Qualified Person (QP) that twelve (12) PCAs are considered APECs at the Site. Further discussion is provided below.

5.9.3 Areas of Potential Environmental Concern

Based on the evaluation of the PCAs located on- and off-Site, twelve (12) APECs are identified, as presented below:

Table 3: Areas of Potential Environmental Concern (APECs)

APEC	Location of APEC on Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1: Importation of unknown quality of fill	Entire Site	#30 – Importation of Fill Material of Unknown	On-Site	PAHs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Soil and Groundwater

APEC	Location of APEC on Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
material		Quality			
APEC 2: De-icing salts usage	Exterior of the Site Building	"Other" – Usage of De-icing Salts	On-Site	Electrical Conductivity, SAR, Na and Cl-	Soil and Groundwater
APEC 3: Former chemical product manufacturer	Northern portion	#8 – Chemical Manufacturing, Processing and Bulk Storage	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 4: Former sign manufacturer and print shop	Southwestern portion	#31 – Ink Manufacturing, Processing and Bulk Storage	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 5: Former auto services	Southeastern portion	#10 – Commercial Autobody Shops	Off-Site	PHCs, BTEX and VOCs	Groundwater
APEC 6: Former UST	Southeastern portion	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs and BTEX	Groundwater
APEC 7: Former dry cleaner	Southwestern portion	#37 – Operation of Dry Cleaning Equipment (where chemicals are used)	Off-Site	VOCs	Groundwater
APEC 8: Former semiconductor and other electronic component manufacturer	Northeastern portion	#19 – Electronic and Computer Equipment Manufacturing	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 9: Former semiconductor and other electronic	Northern portion	#19 – Electronic and Computer Equipment Manufacturing	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater

APEC	Location of APEC on Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
component manufacturer					
APEC 10: Former plastic product manufacturer	Northern portion	#43 – Plastics (including Fibreglass) Manufacturing and Processing	Off-Site	VOCs	Groundwater
APEC 11: Former electronic parts manufacturer	Northern portion	#19 – Electronic and Computer Equipment Manufacturing	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 12: Print shop	Northern portion	#31 – Ink Manufacturing, Processing and Bulk Storage	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater

(1) Areas of potential environmental concern means the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment including through,

a. Identification of past or present uses on, in or under the phase one property and,

b. Identification of potentially contaminating activities.

(2) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area.

PHCs = petroleum hydrocarbons; BTEX = benzene, toluene, ethylbenzene, xylenes; VOCs = volatile organic compounds; PAHs = polycyclic aromatic hydrocarbons; As = arsenic; Sb = antimony; Se = selenium; B-HWS = boron-hot water soluble; Cr (VI) = hexavalent chromium; Hg = mercury; CN- = cyanide; SAR = sodium adsorption ratio; Na = sodium; Cl- = chloride.

Refer to Figures 4 and 5 for the Site plan illustrating the borehole/monitoring well locations and APECs and to Table 4 below for details on APEC characterization.

Table 4: APECs Characterization Details

APEC	APEC Details	Media Potentially Impacted	Boreholes/ Monitoring Wells Advanced within APEC	Depth(s) of Soil Samples Submitted for Analysis (m bgs)	Well Screen Depth (m bgs)	Parameters Tested	Figure #
APEC 1	Fill material of unknown quality was identified on-Site. As the quality of the fill was unknown it could contain COCs	Soil + Groundwater	BH/MW1	0.08 - 0.76	9.2 - 12.2	PAHs, Metals, As, Sb, Se, Cr, (VI), Hg, B-HWS and CN-	11, 12, 16, 17
			BH/MW2	0.08 - 0.76	10.7 – 13.7		
			BH/MW3	0.76 - 1.37	9.2 - 12.2		
			BH/MW4	0.76 - 1.37	9.2 - 12.2		
			BH/MW5	2.29 –2.90	9.2 - 12.2		

APEC	APEC Details	Media Potentially Impacted	Boreholes/ Monitoring Wells Advanced within APEC	Depth(s) of Soil Samples Submitted for Analysis (m bgs)	Well Screen Depth (m bgs)	Parameters Tested	Figure #
APEC 2	De-icing salts were used during the winter months on the exterior portion of the Site buildings for vehicular and pedestrian safety	Soil + Groundwater	BH/MW1	0.08 - 0.76	9.2 - 12.2	Electrical Conductivity, SAR, Na and Cl-	13, 18
			BH/MW2	0.08 - 0.76	10.7 – 13.7		
			BH/MW3	0.76 - 1.37	9.2 - 12.2		
			BH/MW4	0.76 - 1.37	9.2 - 12.2		
			BH/MW5	2.29 –2.90	9.2 - 12.2		
APEC 3	Former chemical product manufacturer may have leaked COCs to the ground surface which could have migrated on-Site in groundwater	Groundwater	BH/MW1	-	9.2 - 12.2	VOCs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	15, 17
			BH/MW3	-	9.2 - 12.2		
APEC 4	Former sign manufacturer and print shop may have leaked COCs to the ground surface which could have migrated on-Site in groundwater	Groundwater	-	-	-	VOCs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	15, 17
APEC 5	Former auto service may have leaked COCs to the ground surface which could have migrated on-Site in groundwater	Groundwater	BH/MW5	-	9.2 - 12.2	PHCs, BTEX and VOCs	14, 15
APEC 6	Former UST may have leaked COCs to the ground surface which could have migrated on-	Groundwater	BH/MW5	-	9.2 - 12.2	PHCs and BTEX	14, 15

APEC	APEC Details	Media Potentially Impacted	Boreholes/ Monitoring Wells Advanced within APEC	Depth(s) of Soil Samples Submitted for Analysis (m bgs)	Well Screen Depth (m bgs)	Parameters Tested	Figure #
	Site in groundwater						
APEC 7	Former dry cleaner may have leaked COCs to the ground surface which could have migrated on-Site in groundwater	Groundwater	-	-	-	VOCs	15
APEC 8	Former semiconductor and other electronic component manufacturer may have leaked COCs to the ground surface which could have migrated on-Site in groundwater	Groundwater	BH/MW3	-	9.2 - 12.2	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	15, 17
APEC 9	Former semiconductor and other electronic component manufacturer may have leaked COCs to the ground surface which could have migrated on-Site in groundwater	Groundwater	BH/MW1	-	9.2 - 12.2	VOCs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	15, 17
			BH/MW3	-	9.2 - 12.2		
APEC 10	Former plastic product manufacturer may have leaked COCs to the ground surface which could have migrated on-Site in	Groundwater	BH/MW1	-	9.2 - 12.2	VOCs	15
			BH/MW3	-	9.2 - 12.2		

APEC	APEC Details	Media Potentially Impacted	Boreholes/ Monitoring Wells Advanced within APEC	Depth(s) of Soil Samples Submitted for Analysis (m bgs)	Well Screen Depth (m bgs)	Parameters Tested	Figure #
	groundwater						
APEC 11	Former electronic parts manufacturer may have leaked COCs to the ground surface which could have migrated on-Site in groundwater	Groundwater	BH/MW1	-	9.2 - 12.2	VOCs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	15, 17
			BH/MW3	-	9.2 - 12.2		
APEC 12	Print shop may have leaked COCs to the ground surface which could have migrated on-Site in groundwater	Groundwater	BH/MW1	-	9.2 - 12.2	VOCs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	15, 17
			BH/MW3	-	9.2 - 12.2		

It should be noted that given the existing building located on-Site, some APECs were not investigated due to inaccessibility. Additional investigation to characterize the APECs will be required after demolition of the existing building.

5.9.4 Underground Utilities

One (1) gas line enters the Site from the eastern property boundary, extends towards west and enters the Site building on its northern building wall.

One (1) hydro line enters the Site from the eastern property boundary, extends westwards and connects to the transformer located on Site and enters the Site building on its southern building wall.

One (1) Bell line enters the Site from the eastern property boundary, extends westwards and enters the Site building on its southeastern building wall.

One (1) sanitary sewer line enters the Site from the eastern property boundary and extends westwards.

One (1) water line enters the Site from the eastern property boundary and extends westwards.

5.9.5 Physical Site Description

The Phase Two CSM provides a narrative and graphical interpretation of the Site surface features, near surface geologic and hydrogeologic conditions, potential contaminants of concern, contaminant fate and transport mechanisms, and relevant receptors and exposure pathways. These components are discussed in the following sections.

Surface Features

The Site is rectangular in shape and measures approximately 3,200 m² in size. The Site is currently occupied by a slab-on-grade two-storey commercial building (the Site building). The Site building has a footprint of approximately 1,275 m^2 and occupies approximately 40 % of the Site. The areas surrounding the Site buildings are covered with landscaping and asphalt.

Geologic and Hydrogeologic Setting

Information on the overburden and bedrock geology of the general Site area was obtained during the Phase One ESA. Based on the review, the following was summarized:

The surficial geology of the Site is described as coarse-textured glaciolacustrine deposits consisting of sand, gravel, minor silt, clay and littoral deposits. The physiography of the Site is within Iroquois Plain and is characterized as sand plain. The bedrock in the general area consists of shale, limestone, dolostone and siltstone and is part of the Queenston Formation.

Based on the review of the OBM and Toporama map, the Site is at an elevation of approximately 100 metres above sea level (m asl). The surrounding properties to the north and west are generally at higher elevations than the Site, while the surrounding properties to the south and east are generally at lower elevations than the Site. The Site is relatively flat.

Based on the review of available resources from the City of Burlington and the Ministry of Natural Resources and Forestry (MNRF), no areas of natural significance were identified at the Site or within the Phase One Study Area.

The general stratigraphy at the Site, as revealed in the borehole logs, consists of surficial asphalt pavement followed by fill materials overlying native sand and silty sand, silty clay/silty clay till, sandy silt and silt/ sandy silt till and sand and silt till underlain by silty clay/shale complex and weathered shale bedrock. Shale bedrock was encountered between 19.7 m bgs to 20.7 m bgs the Site. As previously indicated, more than two-thirds (2/3) of the Site consisted of soil equal to or greater than 2 m in depth.

A brief description of the soil stratigraphy at the Site, in order of depth, is summarized in the following sections. The interpreted Site geology is shown on the enclosed cross sections (Figures 7 and 8).

Surfacial Material

All boreholes were advanced through the existing asphalt pavement, consisting of approximately 80 to 100 mm (average 86 mm) thick asphaltic concrete over approximately 150 to 320 mm (average 222 mm) thick granular base.

Fill Material

Below the asphalt pavement, fill materials were encountered to depths varying between 1.5 and 4.6 m bgs in all boreholes. The fills are heterogeneous and predominantly consisted of sand with a trace of clay, silt and gravel.

Native Material

Sand and Silty Sand

Below fill material in all boreholes, native sand and silty sand deposits were encountered. The sandy deposits extended to depths varying from 12.2 to 13.7 m bgs. These deposits were brown to reddish brown in color and contained a trace of clay and gravel.

Silty Clay

A stratum of silty clay was encountered below or within the sand, silty sand and sandy silt deposits in all boreholes. This deposit extended to depths ranging from approximately 6.1 to 18.3 m bgs.

Silty Clay Till

A stratum of silty clay till was encountered below sand or silty clay deposits in boreholes BH/MW2, BH/MW3 and BH/MW5. This deposit extended to depths ranging from approximately 15.6 to 18.3 m bgs. Cobbles and boulders were also anticipated in these deposits.

Sandy Silt and Silt

A stratum of sandy silt/silt was encountered below silty clay or silty clay till in boreholes BH/MW2 to BH/MW4. The sandy silt/silt deposits extended to depths varying from 16.8 to 18.3 m bgs.

Sandy Silt Till and Sand and Silt Till

A stratum of sandy silt till and sand and silt till was encountered below silty clay or silt in boreholes BH/MW1, BH/MW2 and BH/MW4. The tills extended to a depth of approximately 19.8 m bgs.

Silty Clay/Shale Complex

A stratum of silty clay/shale complex was encountered below the native sandy silt, sandy silt till and silty clay till in all boreholes except BH/MW4. The deposits extended to depths ranging from approximately 19.7 to 20.6 m bgs. This stratum was difficult to penetrate with the drilling augers due to the fragmented shale/limestone content and its hard consistency. Cobbles and boulders were also anticipated in these deposits.

Bedrock

Below the sand and silt till or silty clay/shale complex in all boreholes, reddish brown to grey, highly weathered to fresh shale bedrock from Queenston Formation was encountered/inferred. Boreholes BH/MW2 to BH/MW5 were terminated within the shale bedrock at depths ranging from 19.8 to 24.8 m bgs while the split spoon got refusal within probable shale bedrock in BH/MW1.

Refer to the geological cross sections in Figures 7 and 8 for an overview of the Site stratigraphy.

Hydrogeologic Setting

The on-Site monitoring well network consists of a total of five (5) monitoring wells advanced by BIG screened within the overburden material.

Groundwater depths within the groundwater table across the Site ranged between approximately 7.92 m and 9.33 m bgs on July 3rd, 2023.

Based on the static water levels observed, the interpreted predominant groundwater flow was towards the south. The interpreted groundwater flow direction is presented on Figure 6.

Hydraulic conductivity testing was completed in the hydrogeological investigation conducted by BIG. Single Well Response Test (SWRT) analysis was conducted at selected monitoring wells (BH/MW1, BH/MW2, BH/MW3, BH/MW4, BH/MW5). The hydraulic conductivity values for each of the tested wells were calculated from the SWRT data using Aqtesolv Software and the Hvorlsev solution for unconfined conditions. The hydraulic conductivity (K) ranged from 4.53×10^{-5} to 3.01×10^{-6} m/s, with a geometric mean of 1.58×10^{-5} m/s. The horizontal hydraulic gradient in groundwater, based on groundwater measurements collected on July 3, 2023 was 0.002 m/m between BH/MW3 and BH/MW4 and 0.001 m/m between BH/MW4 and BH/MW5. The geomean of the horizontal hydraulic gradient is 0.002 m/m.

It is noted that vertical hydraulic gradients were not evaluated for this site as a second water bearing unit was not identified at depths investigated at the Site.

Refer to Figure 6 for the groundwater contour plans designed from the groundwater elevations collected as part of the Phase Two ESA.

5.9.6 Site Sensitivity

The Site Sensitivity classification with respect to the conditions set out under Section 41 and 43.1 of O.Reg. 153/04 were evaluated to determine if the Site is sensitive, as presented in the table below:

Table 5: Site Sensitivity

Sensitivity	Classification	Does Sensitivity Apply to Site?
Section 41 applies if	(i) property is within an area of natural significance	No
	(ii) property includes or is adjacent to an area of natural significance or part of such an area	No
	(iii) property includes land that is within 30 m of an area of natural significance or part of such an area	No
	(iv) soil at property has a pH value for surface soil less than 5 or greater than 9	No
	(v) soil at property has a pH value for sub-surface soil less than 5 or greater than 11	No
	(vi) a qualified person is of the opinion that, given the characteristics of the property and the certifications the qualified person would be required to make in a record of site condition in relation to the property as specified in Schedule A, it is appropriate to apply this section to the property	No
Section 43.1 applies if	(i) property is a shallow soil property	No
	(ii) property includes all or part of a water body or is adjacent to a water body or includes land that is within 30 m of a water body	No

5.9.7 Previous Investigations

BIG conducted a Phase One ESA in 2023. The applicable data from the previous report prepared by BIG was relied upon in the Phase Two ESA and Phase Two CSM.

5.9.8 Remediation

No remediation has occurred at the Site.

5.9.9 Soil Placed On, In or Under the Phase Two Property

No excess soil has been placed on, in or under the Phase Two property since the Site reconnaissance completed by BIG for the Phase One ESA in 2023.

5.9.10 Land Use

At the time of the Phase Two ESA investigation the Site was currently occupied by one (1) slab-on-grade two-storey commercial building. BIG understands that the proposed development will be comprised of one (1) high rise 38esidential building with four (4) levels of underground parking garage.

5.9.11 Contaminants of Concern

The MECP (2011a) Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Land Use and coarse textured soils were considered applicable for determining contaminants of concern (COCs), based on the reasons presented below:

Table 6: Site Condition Standards

Descriptor	Site-Specific Condition
Section 41 Site Sensitivity	Not applicable o The soil at the Site has pH values between 5 and 9 for surficial soil; and, between 5 and 11 for subsurface soil. o The Site is not located within, or adjacent to, an area of natural significance, or part of such an area; and the Site does not include land that is within 30 m of an area of natural significance, or part of such an area.
Section 43.1 Site Sensitivity	Not applicable o The Site is not considered a shallow soil property, based on the recovered soil cores, which indicated that more than two-thirds of the Site has an overburden thickness in excess of 2 m; and, o The Site is not located within 30 m of a surface water body; the nearest surface water body is the Don River is situated approximately 550 m west of the Site. Lake Ontario is situated approximately 5.4 km south of the Site.
Section 35 Ground Water	Non-Potable o The Site is supplied by the City of Burlington municipal water system. o The RSC property is not located within an area designated in a municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of groundwater. o The property or one of the properties in the Phase One study area does not have a well-used or intended for use as a source of water for human consumption or agriculture. o The property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the property, are supplied by a municipal drinking water system, as defined in the *Safe Drinking Water Act, 2002*.
Land Use	Residential/Parkland/Institutional o The future use of the Site will be residential land use
Soil Texture	Coarse textured o The predominant texture of soils at the Site is considered to be coarse textured as pre the borehole observations.

No COCs were identified in soil and groundwater at the Site.

EC was detected in soil in exceedance of the applicable MECP Table 3 SCS at three (3) borehole locations (BH/MW1, BH/MW2, and BH/MW5) and SAR was detected in soil in exceedance of the applicable MECP Table 3 SCS at five (5) borehole locations (BH/MW1 to BH/MW5). BH/MW1 to BH/MW5 are located in a parking lot and de-icing salts have been used for vehicular or pedestrian traffic. 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 3 SCS. As de-icing salts are used at the Site for vehicular and pedestrian safety, EC and SAR are not considered COCs.

5.9.12 Contaminant Fate and Transport

Soil Media

No soil impacts were identified on the Site.

Groundwater Media

No groundwater impacts were identified on the Site.

5.9.13 Preferential Pathways

No soil or groundwater COCs were identified on the Site, there are no preferential pathways.

5.9.14 Climatic Conditions

No soil or groundwater COCs were identified on the Site, climactic or meteorological conditions are not a potential contaminant transport mechanism and is not considered further.

5.9.15 Soil Vapour Migration

Given that no COCs were identified in soil or groundwater at the Site, soil vapour intrusion is not a potential contaminant transport mechanism.

5.9.16 Receptors and Exposure Pathways

Human Health Receptors and Exposure Pathways

As no COCs were identified in soil or groundwater at the Site, there are no complete exposure pathways for human receptors at the future residential development.

Scenario	Receptor	Exposure Pathways
Property Residents	Adult (including pregnant female), Teen, Child, Toddler, Infant	None
Workers – Long Term (indoor)	Adult (including pregnant female)	None
Workers – Short Term (outdoor)	Adult (including pregnant female)	None
Property Visitor - Recreational	Adult (including pregnant female), Teen, Child, Toddler, Infant	None
Property Visitor - Trespassers	Adult (including pregnant female), Teen, Child, Toddler, Infant	None
Workers – Construction	Adult (including pregnant female)	None

The human health conceptual on-Site model is included in Figure D.1 in Appendix D.

Ecological Receptors and Exposure Pathways

The Site is comprised of a developed commercial land capable of supporting some terrestrial receptors adapted to living in urban environments. Relevant terrestrial receptors are terrestrial vegetation, such as trees, grasses, and weeds; soil invertebrates, such as earthworms, millipedes and beetles; terrestrial birds, such as pigeons, sparrows, and robins; and terrestrial mammals such as moles, voles, and mice. As no soil or groundwater COCs were identified at the Site there are no complete exposure pathways for ecological receptors at the future residential development.

Primary Source	Secondary Source	Receptor	Exposure Pathway
Impacted Soil/Groundwater	Impacted Soil	Vegetation	None
		Soil invertebrates	None
		Terrestrial birds and mammals	None
	Ambient air	Vegetation	None
		Soil Invertebrates	None
		Terrestrial birds and mammals	None
	Impacted Groundwater	Terrestrial vegetation	None
		Soil invertebrates	None
		Terrestrial birds and mammals	None

Primary Source	Secondary Source	Receptor	Exposure Pathway
	Plant and animal tissue	Soil invertebrates	None
		Terrestrial birds and mammals	None

The ecological health conceptual on-Site model is included in Figure D.2 in Appendix D.

6 Summary of Findings

The findings of the Phase Two ESA conducted at the Site are summarized as follows:

1. The general stratigraphy at the Site, as revealed in the borehole logs, consists of surficial asphalt pavement followed by fill materials overlying native sand and silty sand, silty clay/silty clay till, sandy silt and silt/ sandy silt till and sand and silt till underlain by silty clay/shale complex and weathered shale bedrock. Shale bedrock was encountered between 19.7 m bgs to 20.7 m bgs the Site.
2. The overburden materials encountered are comprised of sand, silty sand, sandy silt, silt, sandy silt till, sand and silt till, silty clay, silty clay till and silty clay/shale complex. Based on the textural descriptions of these materials as inferred from borehole observations, coarse textured standards were applied as part of this Phase Two ESA.
3. The groundwater depths within the groundwater table across the Site ranged between approximately 7.92 m and 9.33 m bgs on July 3, 2023.
4. The soil analytical results indicated that no parameters were detected at concentrations above the applicable MECP (2011a) Table 3 Site Condition Standards in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional land use and coarse textured soils.
5. EC was detected in soil in exceedance of the applicable MECP Table 3 SCS at three (3) borehole locations (BH/MW1, BH/MW2, and BH/MW5) and SAR was detected in soil in exceedance of the applicable MECP Table 3 SCS at five (5) borehole locations (BH/MW1 to BH/MW5). BH/MW1 to BH/MW5 are located in a parking lot and de-icing salts have been used for vehicular or pedestrian traffic. 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 3 SCS. As de-icing salts are used at the Site for vehicular and pedestrian safety, EC and SAR are not considered COCs.
6. The groundwater analytical results indicated that no parameters were detected at concentrations above the applicable MECP (2011a) Table 3 Site Condition Standards in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional land use and coarse textured soils.

7 Conclusions and Recommendations

In order to proceed with the RSC filing, the following is recommended:

1. It should be noted that given the existing building located on-Site, some APECs were not investigated due to inaccessibility. Additional investigation to characterize the APECs will be required after demolition of the existing building.
2. Update Phase Two ESA.
3. File the RSC.

8 General Limitations

The information presented in this report is based on a limited investigation designed to provide information to support an assessment of the current environmental conditions within the subject property. The conclusions and recommendations presented in this report reflect Site conditions existing at the time of the investigation.

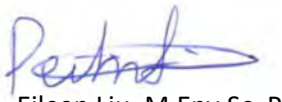
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Yours truly,

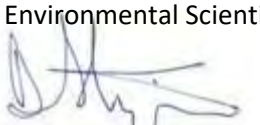
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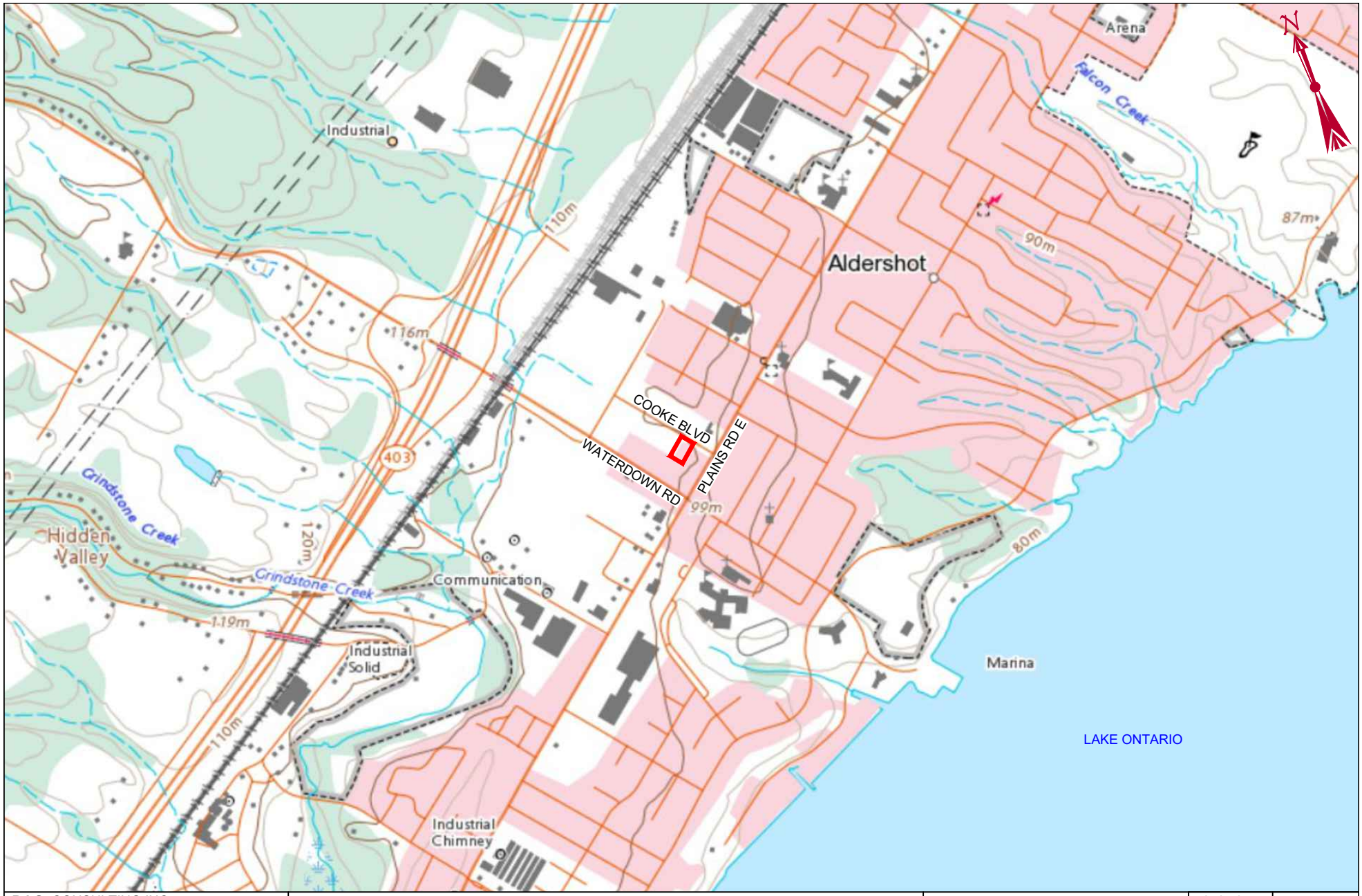
9 References

1. MECP (2011a) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*";
2. MECP (2011b) Protocol for Analytical Methods Used in the Assessment of Properties under Prt XV.1 of the *Environmental Protection Act*. PIBS 4696e01;
3. MECP (2018); Well Records Map. Retrieved from https://www.ontario.ca/environment-and-energy/map-well-records
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. Toporama. Retrieved from http://www.atlas.gc.ca/toporama/en/index.html

The following is a list of the environmental investigations reviewed in support of this report:

1. BIG (2023) Phase One Environmental Site Assessment, 1026 Cooke Boulevard, Burlington, Ontario, dated July 12, 2023, prepared by B.I.G. Consulting Inc.

Figures



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LEGEND

SITE BOUNDARY

SCALE

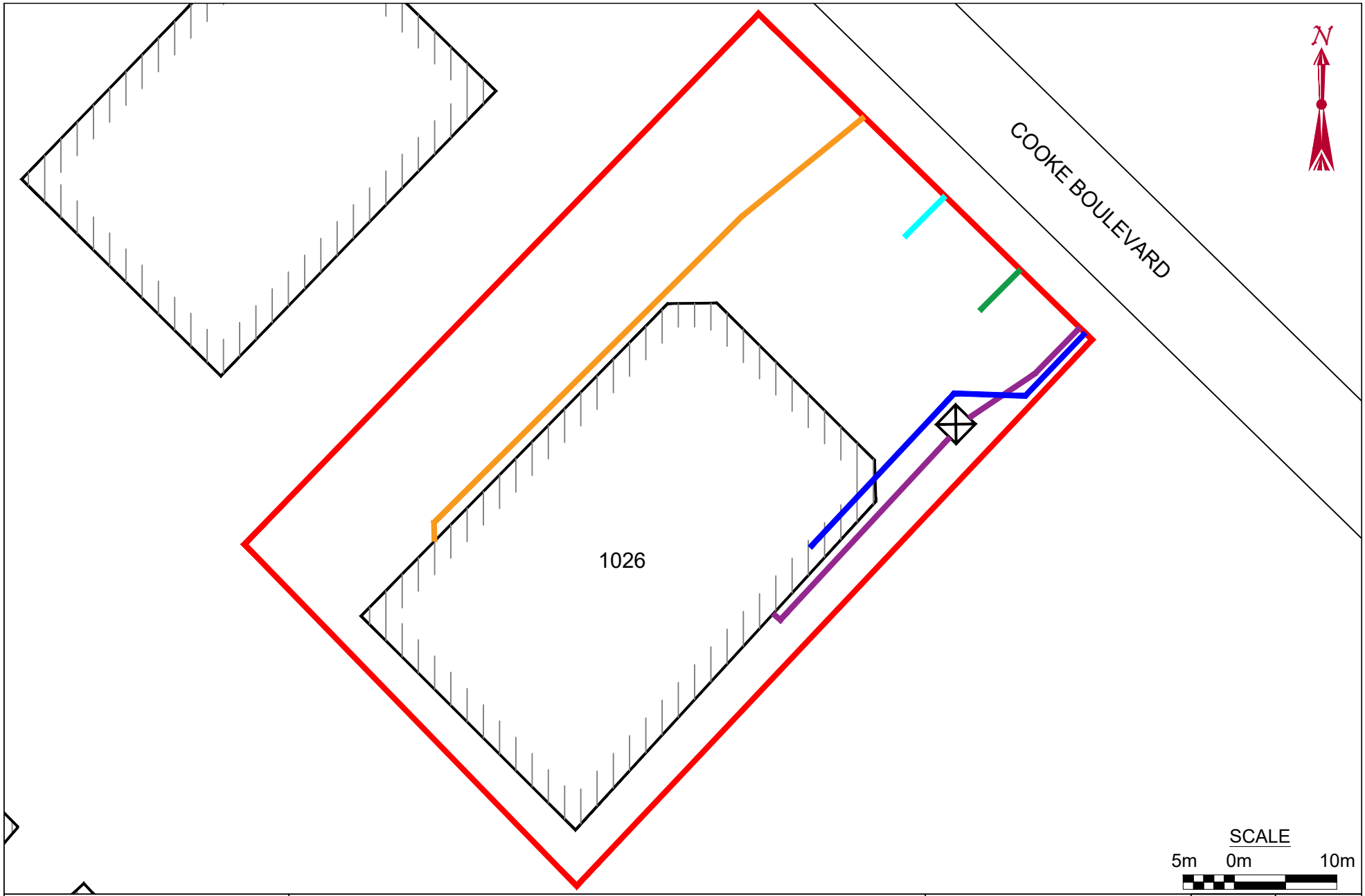
100m 0m 100m 200m 300m 400m 500m

IMAGERY OBTAINED FROM TOPORAMA, NATURAL RESOURCES CANADA, DATE 2022

TITLE AND LOCATION

SITE LOCATION PLAN
PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	1



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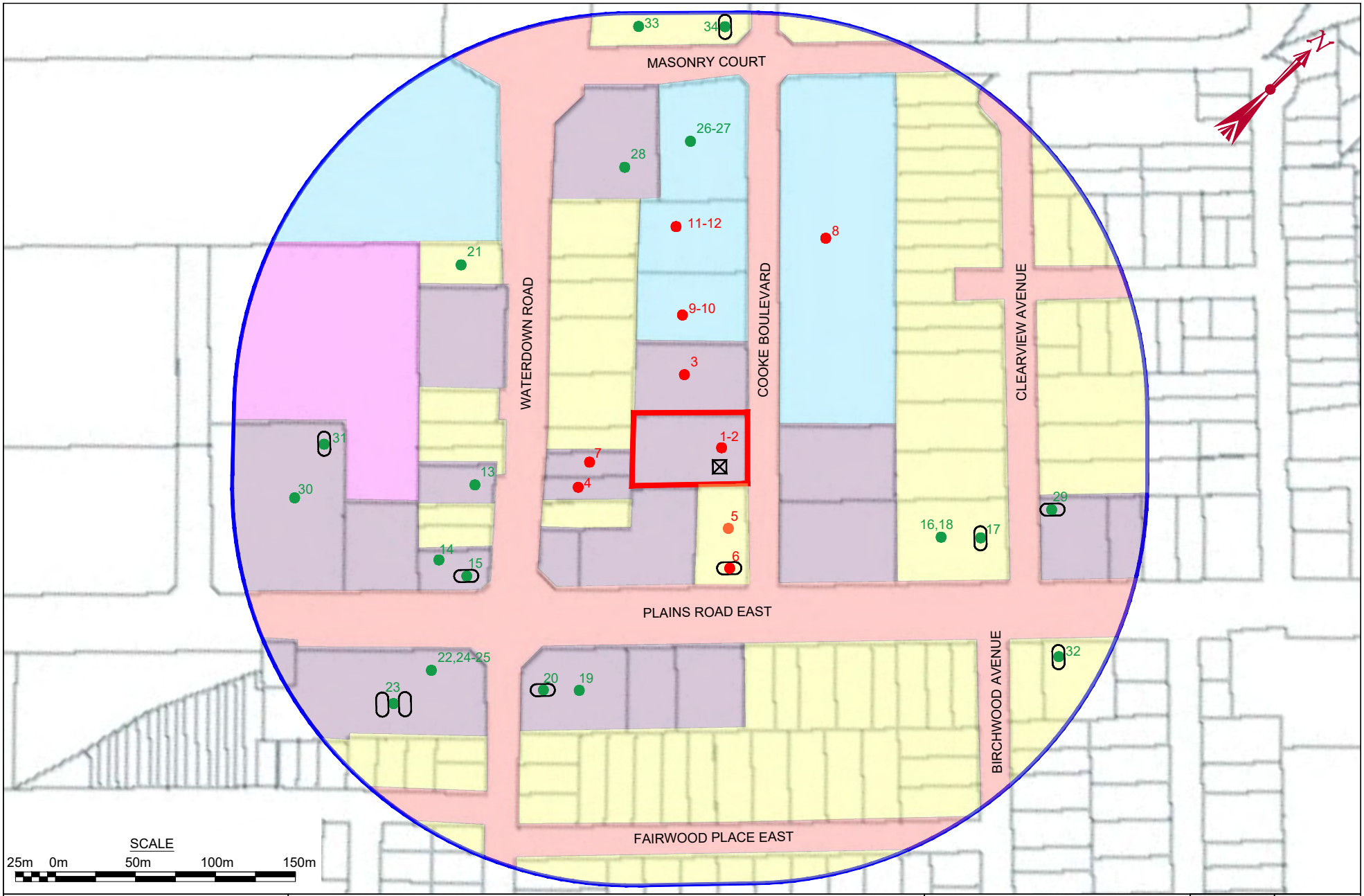
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- TRANSFORMER (NON-PCB)
- HYDRO
- BELL
- GAS
- SANITARY SEWER
- WATER

TITLE AND LOCATION

SITE LAYOUT AND UTILITIES PLAN
PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	2



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LEGEND

- SITE BOUNDARY
- PHASE TWO STUDY AREA BOUNDARY
- PCA IDENTIFIER CONTRIBUTING APEC
- PCA IDENTIFIER NOT CONTRIBUTING APEC
- LOCATION OF FORMER UNDERGROUND STORAGE TANK (UST)
- TRANSFORMER (NON-PCB)
- RESIDENTIAL LAND USE
- COMMERCIAL LAND USE
- COMMUNITY LAND USE
- INDUSTRIAL LAND USE
- AGRICULTURAL OR OTHER LAND USE

IMAGERY OBTAINED FROM COSINE ONLINE SERVICES, 2022

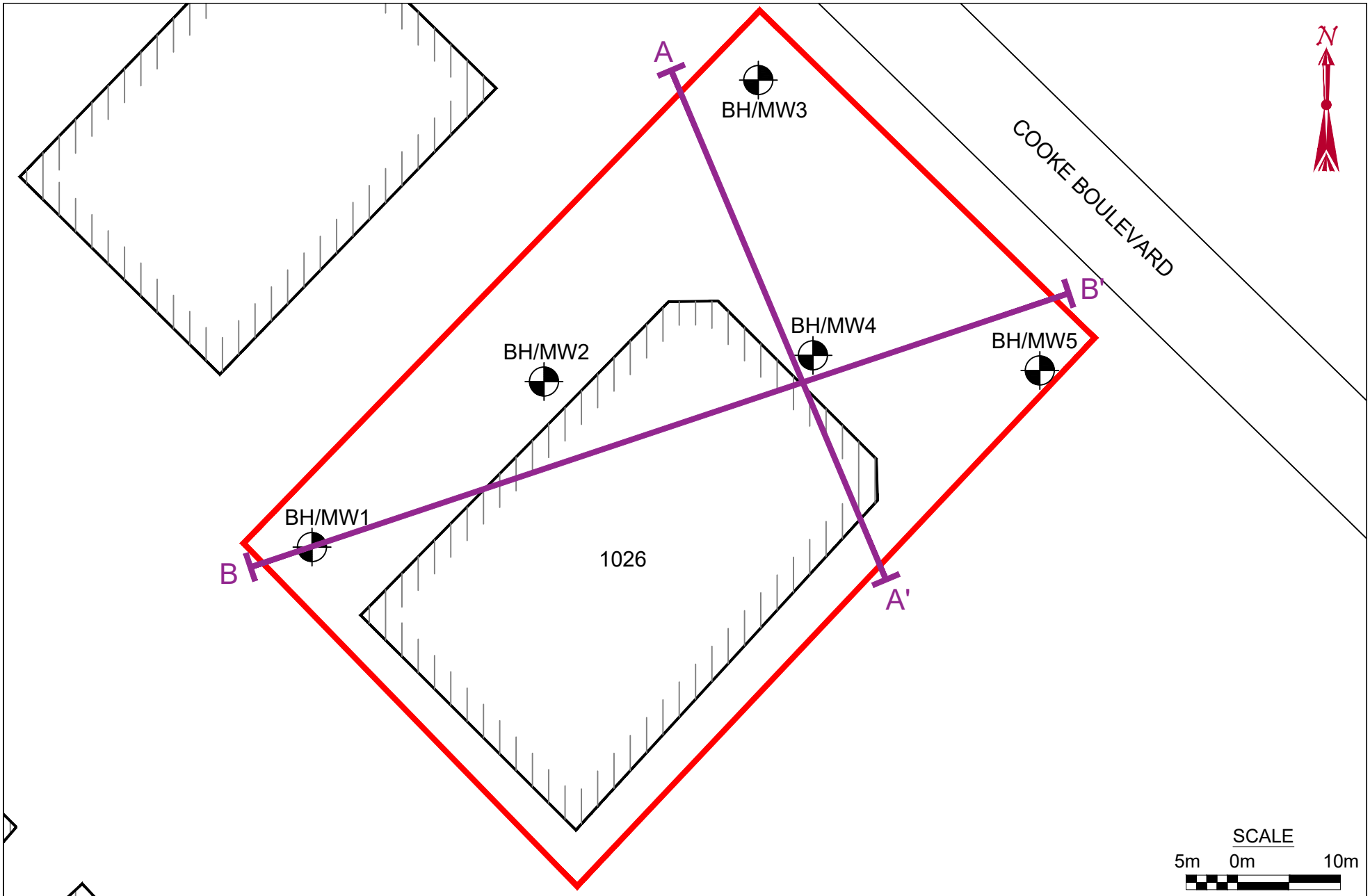
TITLE AND LOCATION

PHASE TWO STUDY AREA AND POTENTIALLY CONTAMINATING ACTIVITIES (PCAs)

PHASE TWO ESA

1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	3



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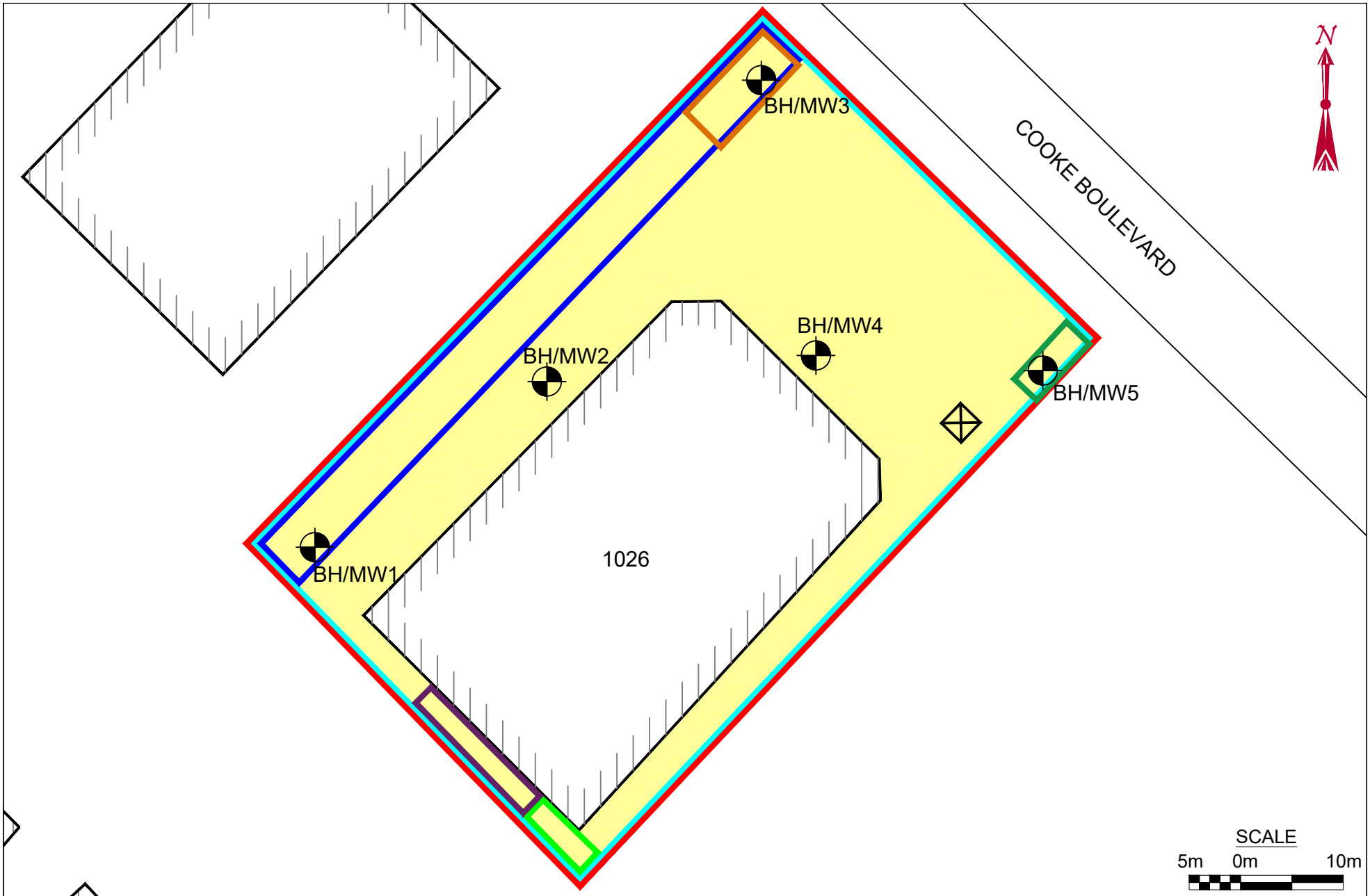
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- A—A' GEOLOGICAL CROSS SECTION (SEE FIGURE 7)
- B—B' GEOLOGICAL CROSS SECTION (SEE FIGURE 8)

TITLE AND LOCATION

BOREHOLE/MONITORING WELL LOCATION PLAN

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	4



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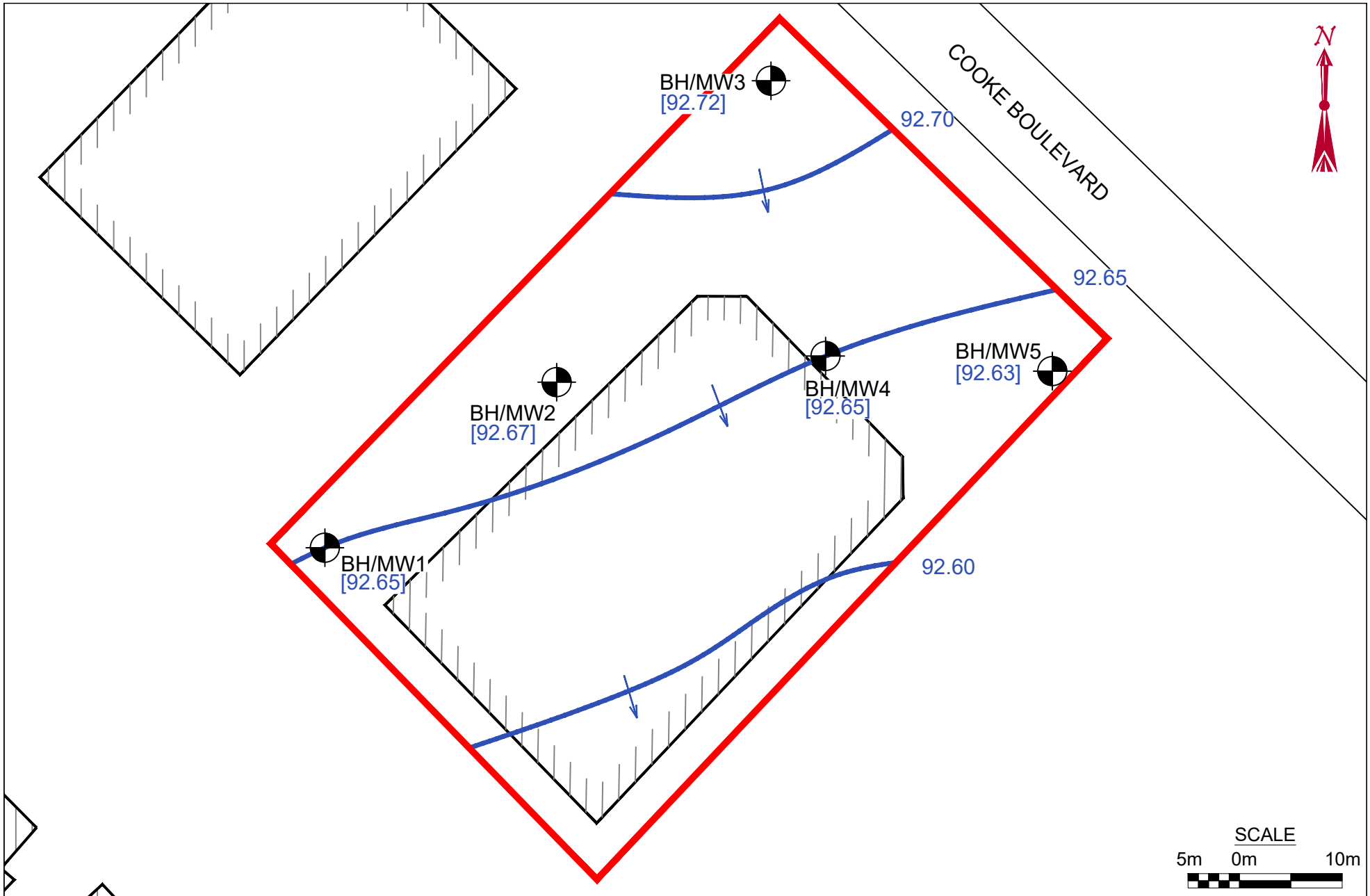
- SITE BOUNDARY
- BUILDING FOOTPRINT
- TRANSFORMER (NON-PCB)
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- APEC 1
- APEC 2
- APECs 3, 9-12
- APEC 4
- APECs 5-6
- APEC 7
- APEC 8

TITLE AND LOCATION

BOREHOLE/MONITORING WELL WITH AREAS OF POTENTIAL ENVIRONMENTAL CONCERNS (APECs)

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	5



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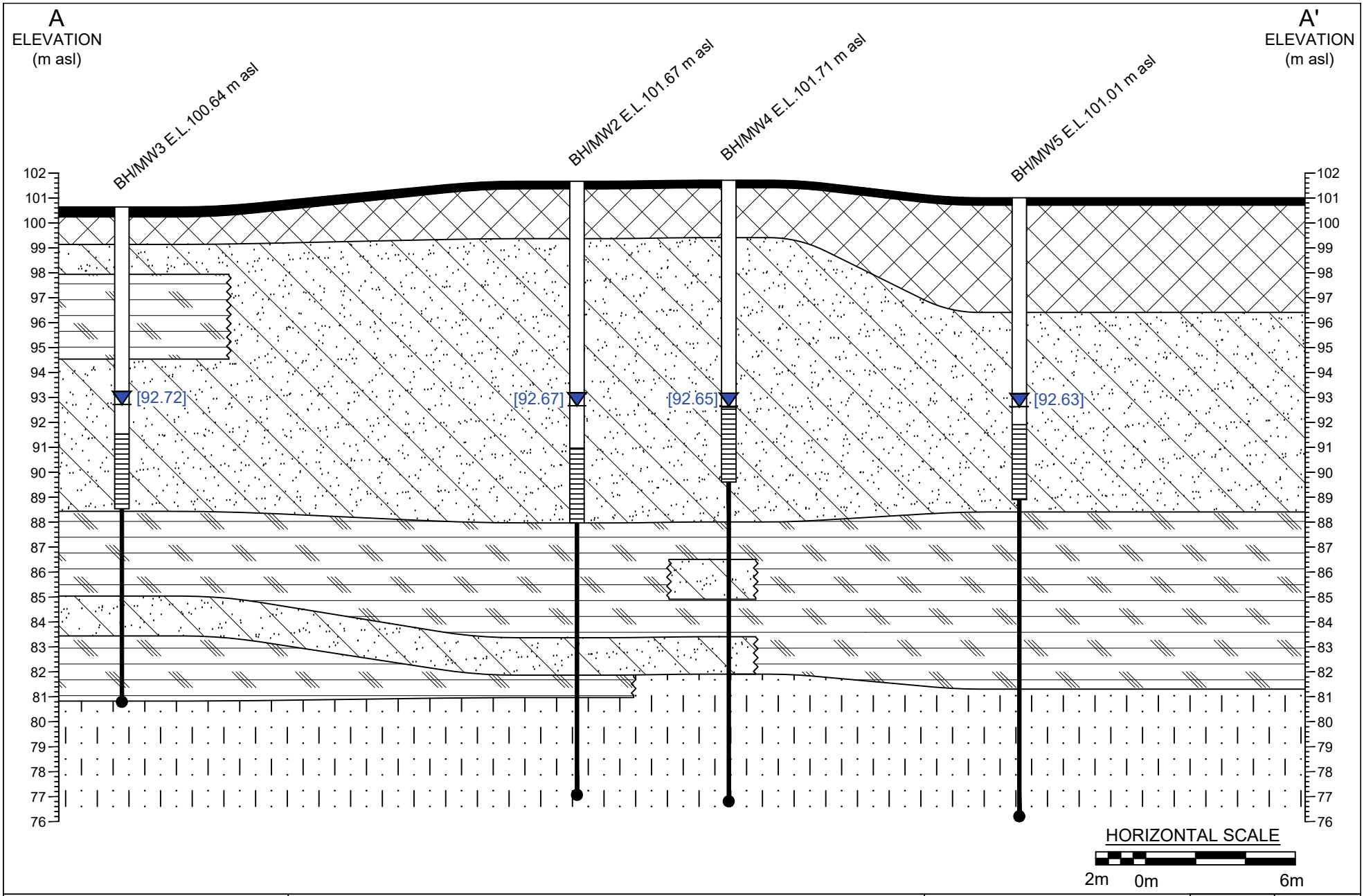
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- [XX.XX] WATER ELEVATION (m asl) (JULY 3, 2023)
- INTERPRETED DIRECTION OF GROUNDWATER FLOW
- INTERPRETED GROUNDWATER CONTOUR

TITLE AND LOCATION

INTERPRETED GROUNDWATER CONTOUR PLAN

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	6



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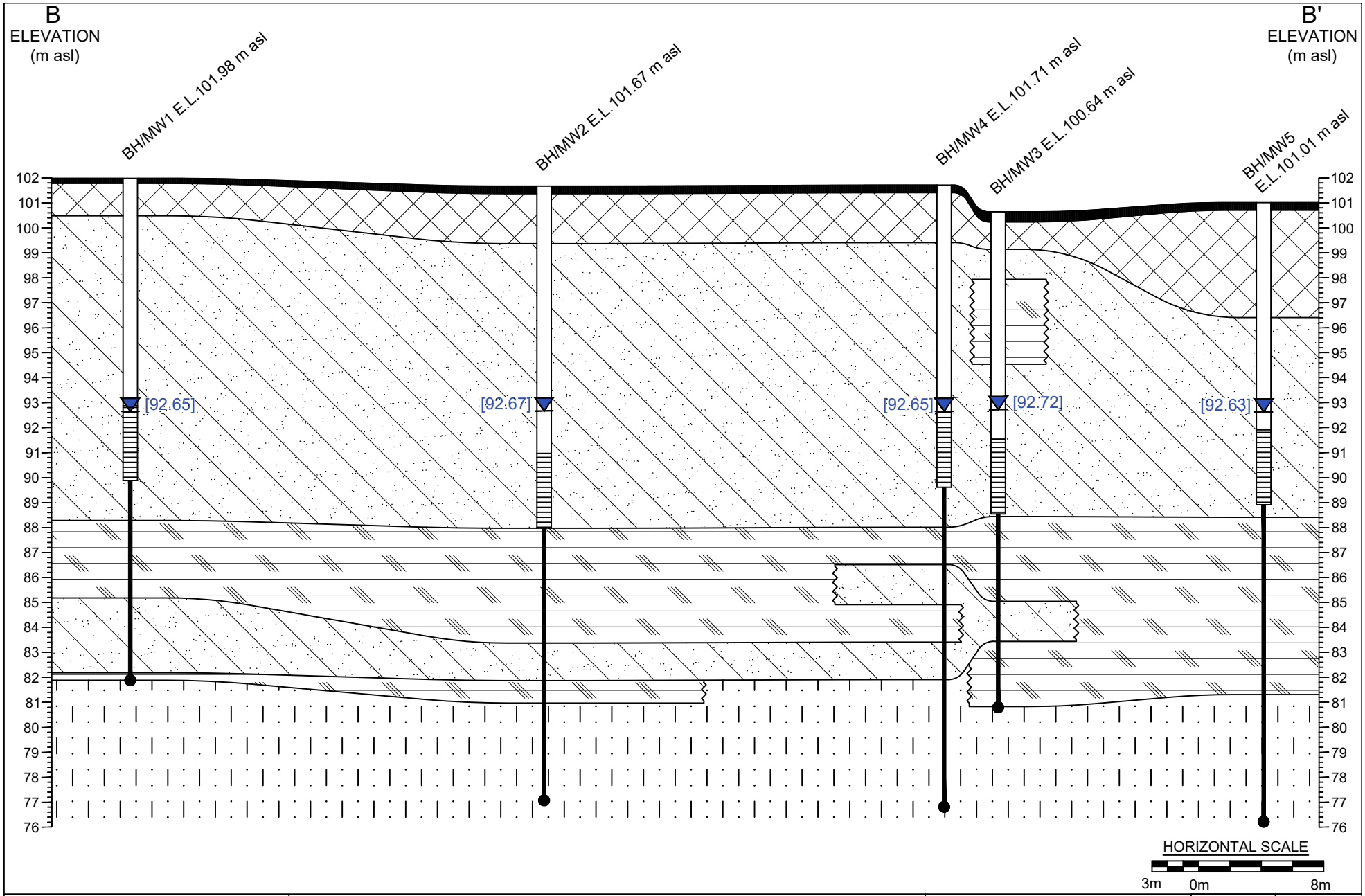
- ASPHALT PAVEMENT
- FILL
- SAND / SILTY SAND / SANDY SILT / SANDY SILT TILL / SAND AND SILT TILL
- SILTY CLAY / SILTY CLAY TILL / SILT / SHALE COMPLEX
- BEDROCK
- WATER LEVEL
- [XX.XX] WATER LEVEL MEASUREMENT (m asl) (JULY 03, 2023)

TITLE AND LOCATION

GEOLOGICAL CROSS SECTION A-A'

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	7



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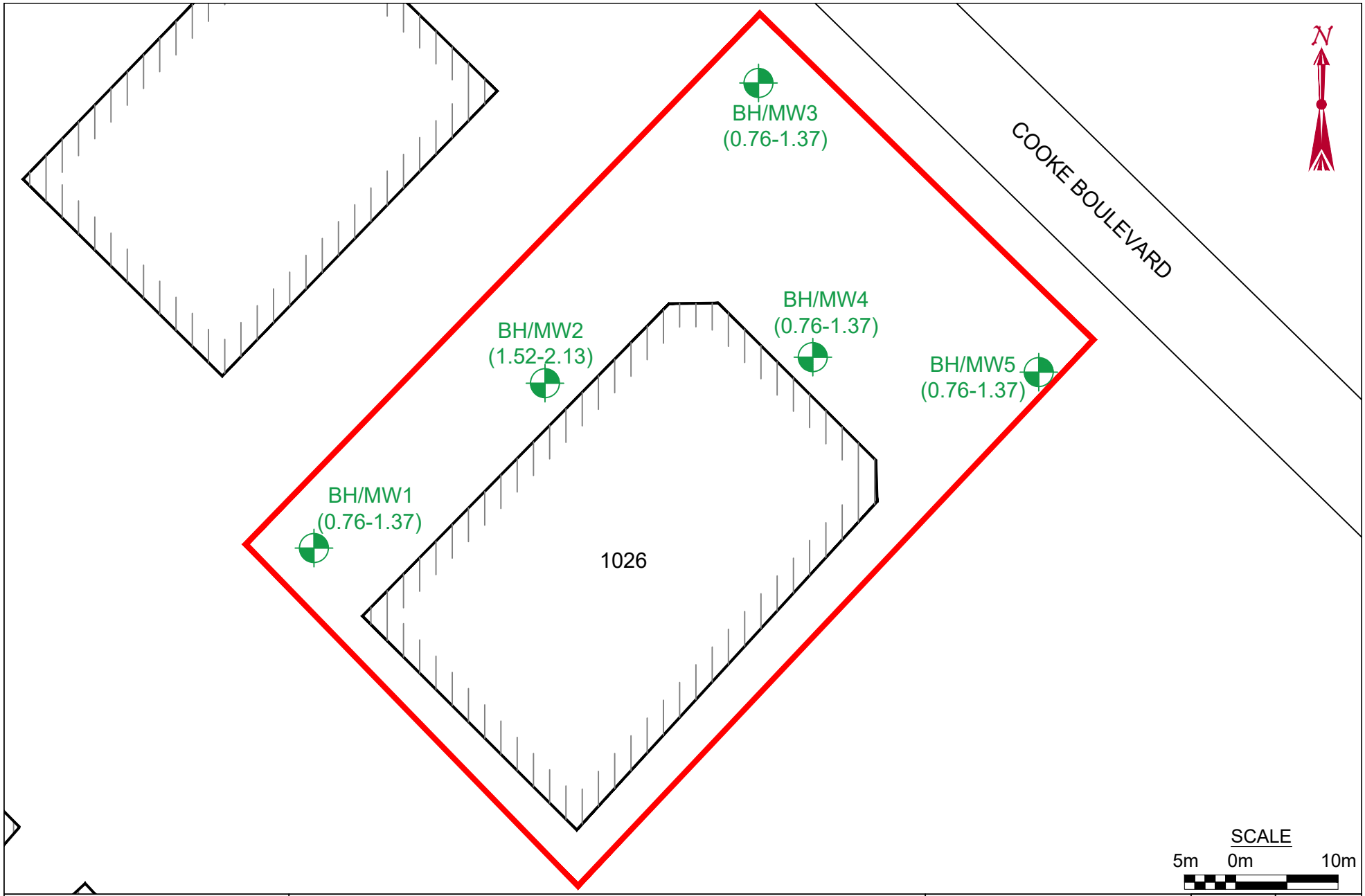
- ASPHALT PAVEMENT
- FILL
- SAND / SILTY SAND / SANDY SILT / SANDY SILT TILL / SAND AND SILT TILL
- SILTY CLAY / SILTY CLAY TILL / SILT / SHALE COMPLEX
- BEDROCK
- WATER LEVEL
- [XX.XX] WATER LEVEL MEASUREMENT (m asl) (JULY 03, 2023)

TITLE AND LOCATION

GEOLOGICAL CROSS SECTION B-B'

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	8



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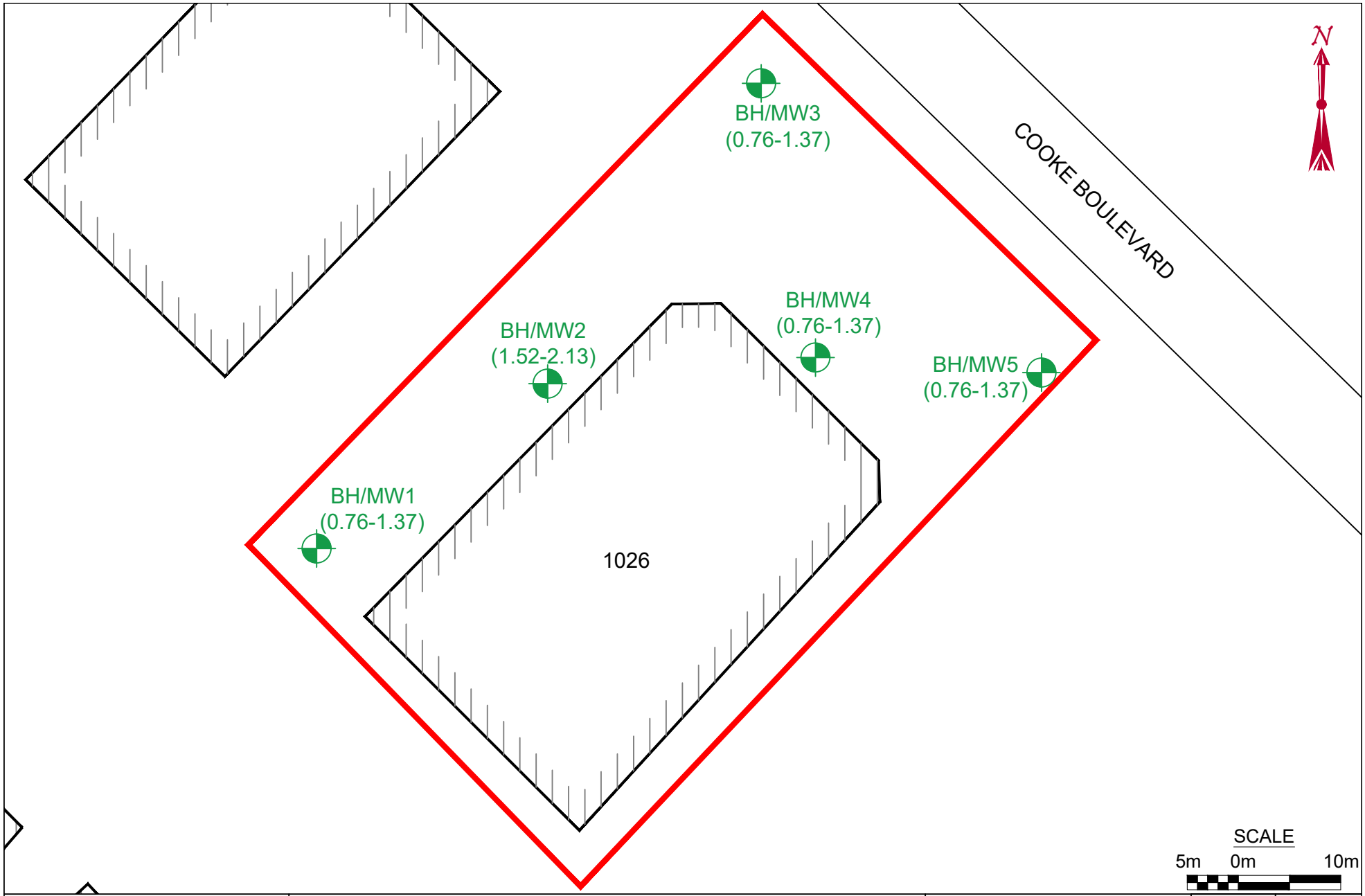
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- MEETS MECP TABLE 3 SCS
- [xx.xx] SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

PHCs CONCENTRATIONS IN SOIL

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	9



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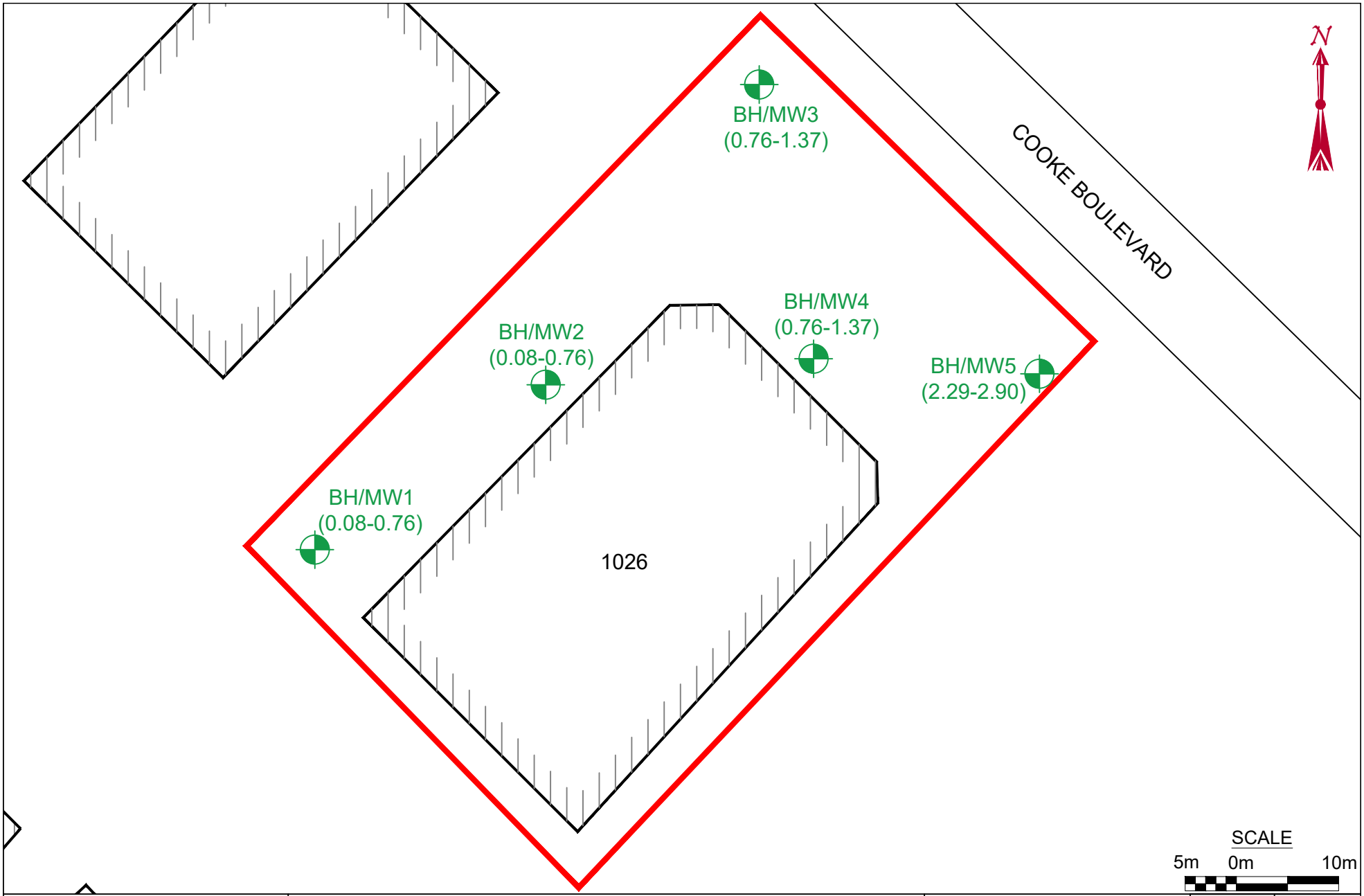
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- MEETS MECP TABLE 3 SCS
- [xx.xx] SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

VOCs AND BTEX CONCENTRATIONS IN SOIL

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	10



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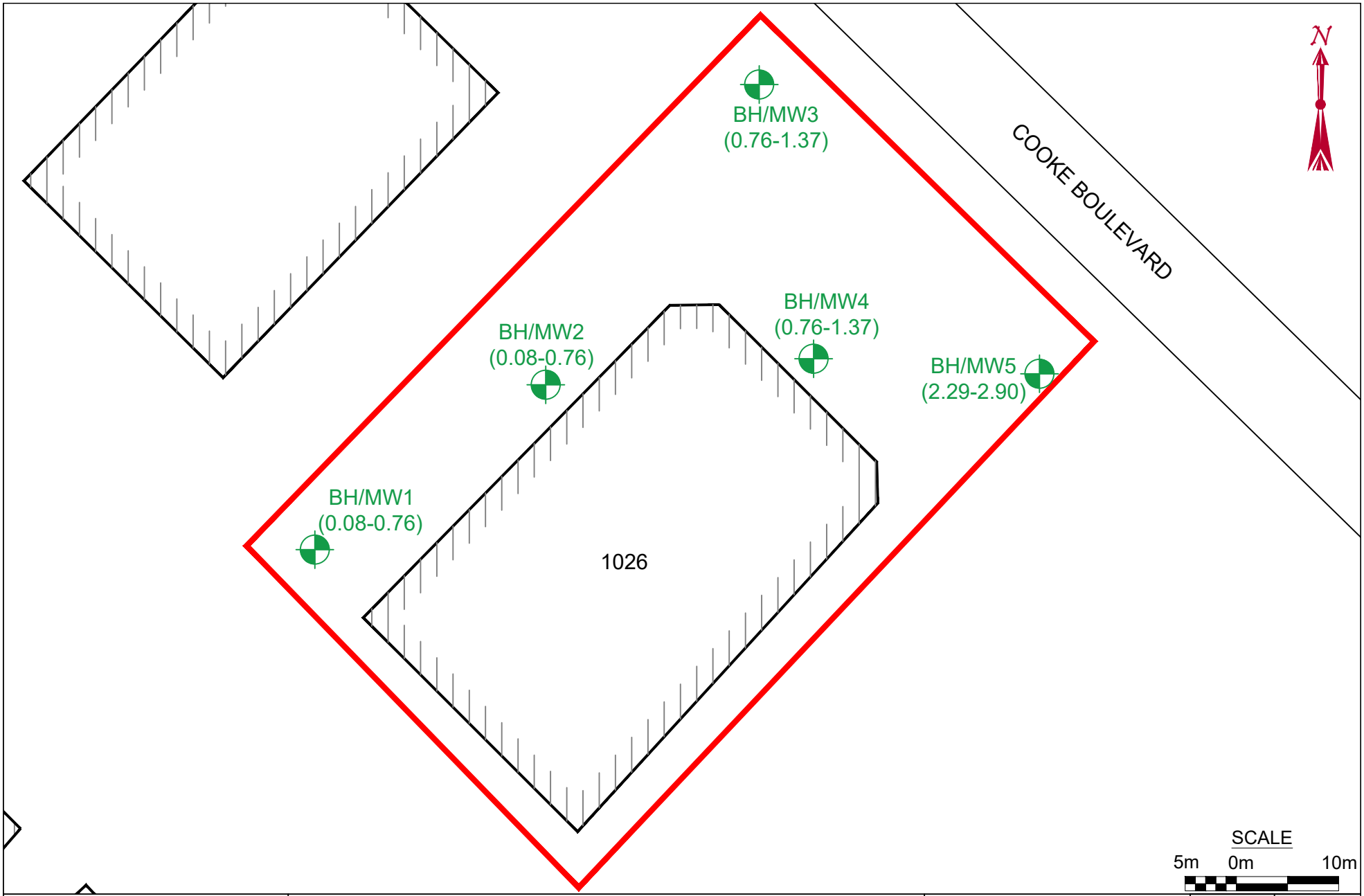
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- MEETS MECP TABLE 3 SCS
- [xx.xx] SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

PAHs CONCENTRATIONS IN SOIL
PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	11



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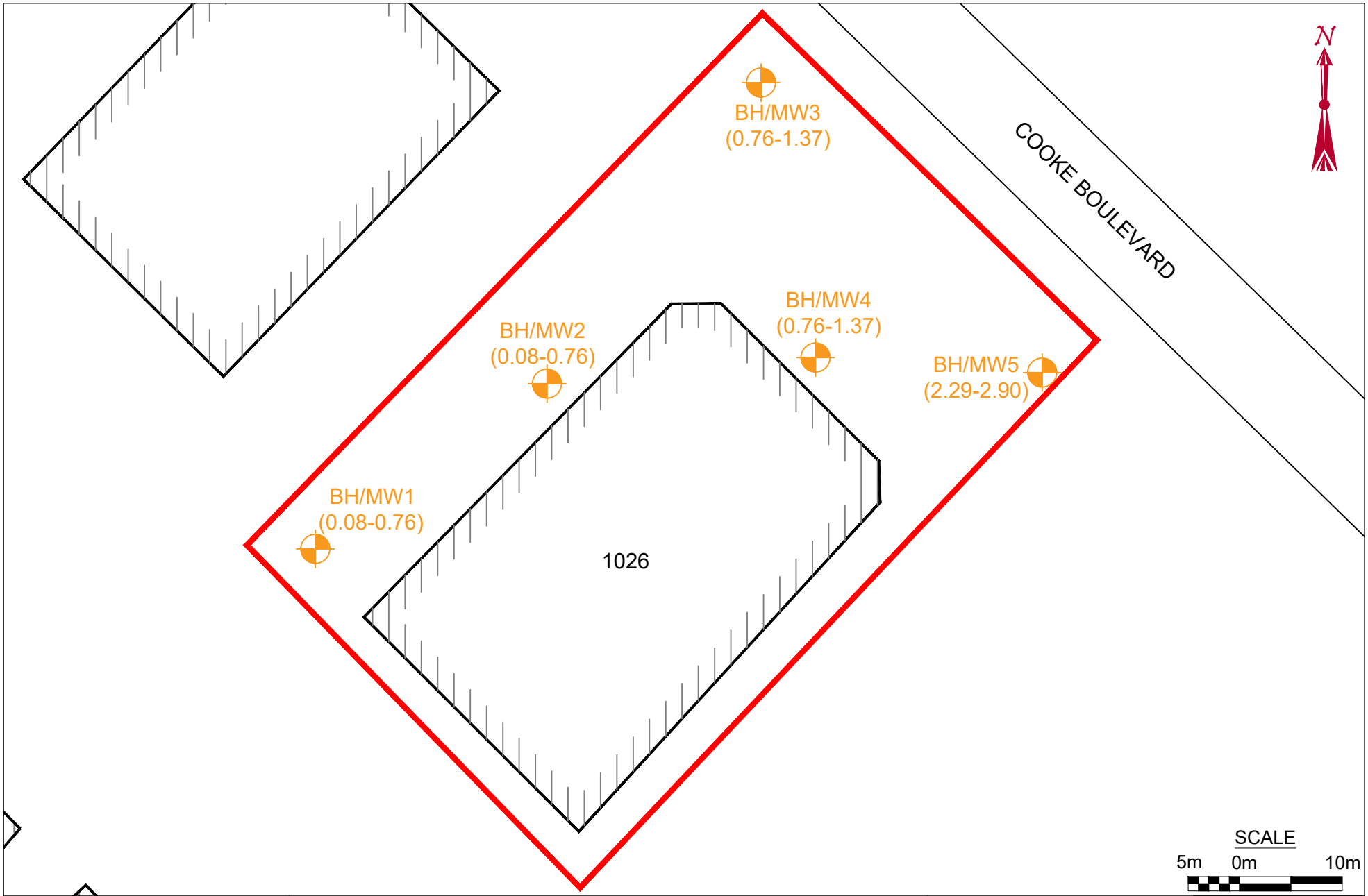
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- MEETS MECP TABLE 3 SCS
- [xx.xx] SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

METALS, As, Sb, Se, B-HWS, Cr(VI), Hg AND CN- CONCENTRATIONS IN SOIL

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	12



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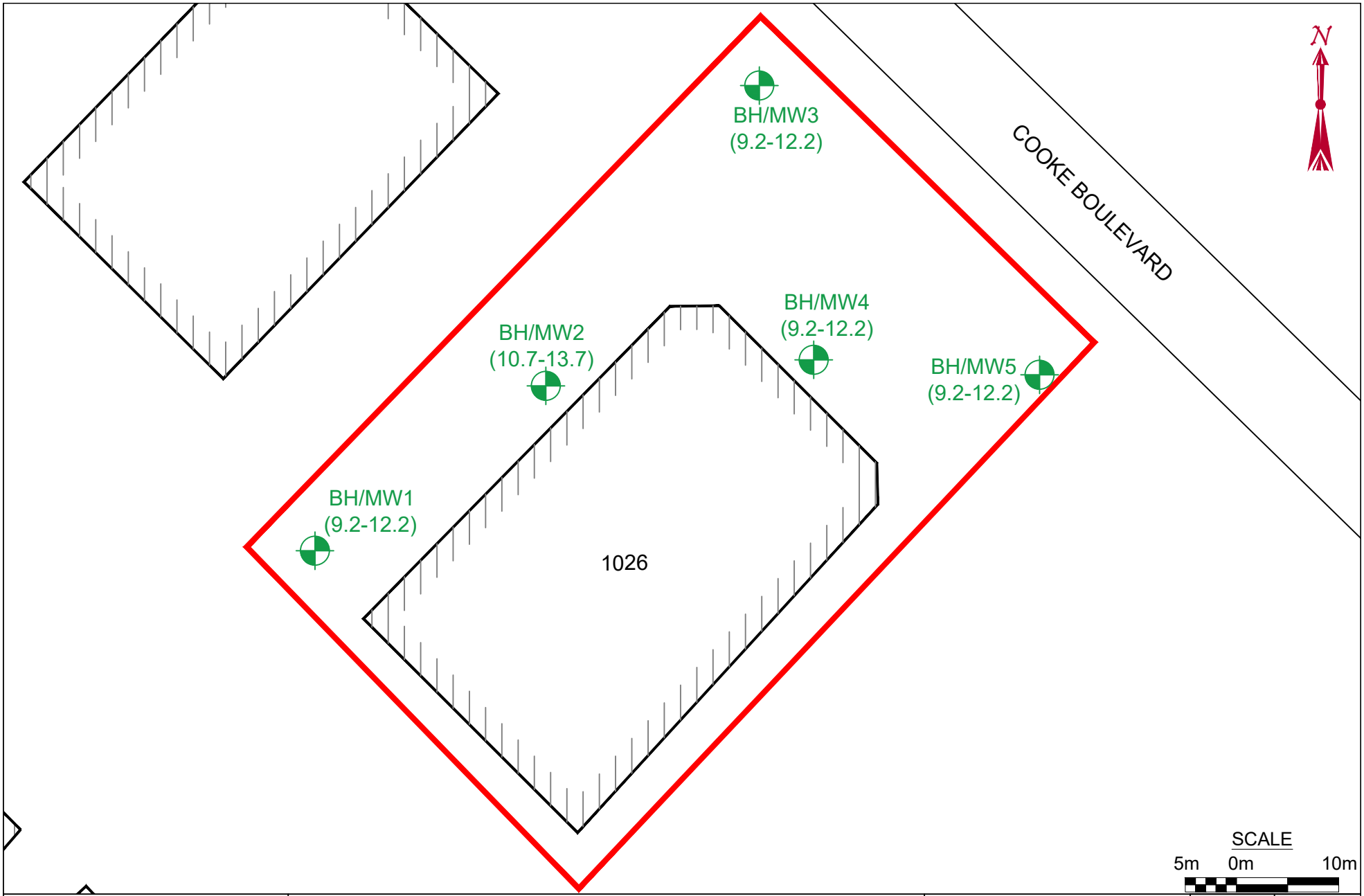
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- EXCEEDS MECP TABLE 3 SCS HOWEVER NOT CONSIDERED AS A COC
- [xx.xx] SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

EC AND SAR CONCENTRATIONS IN SOIL
PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	13



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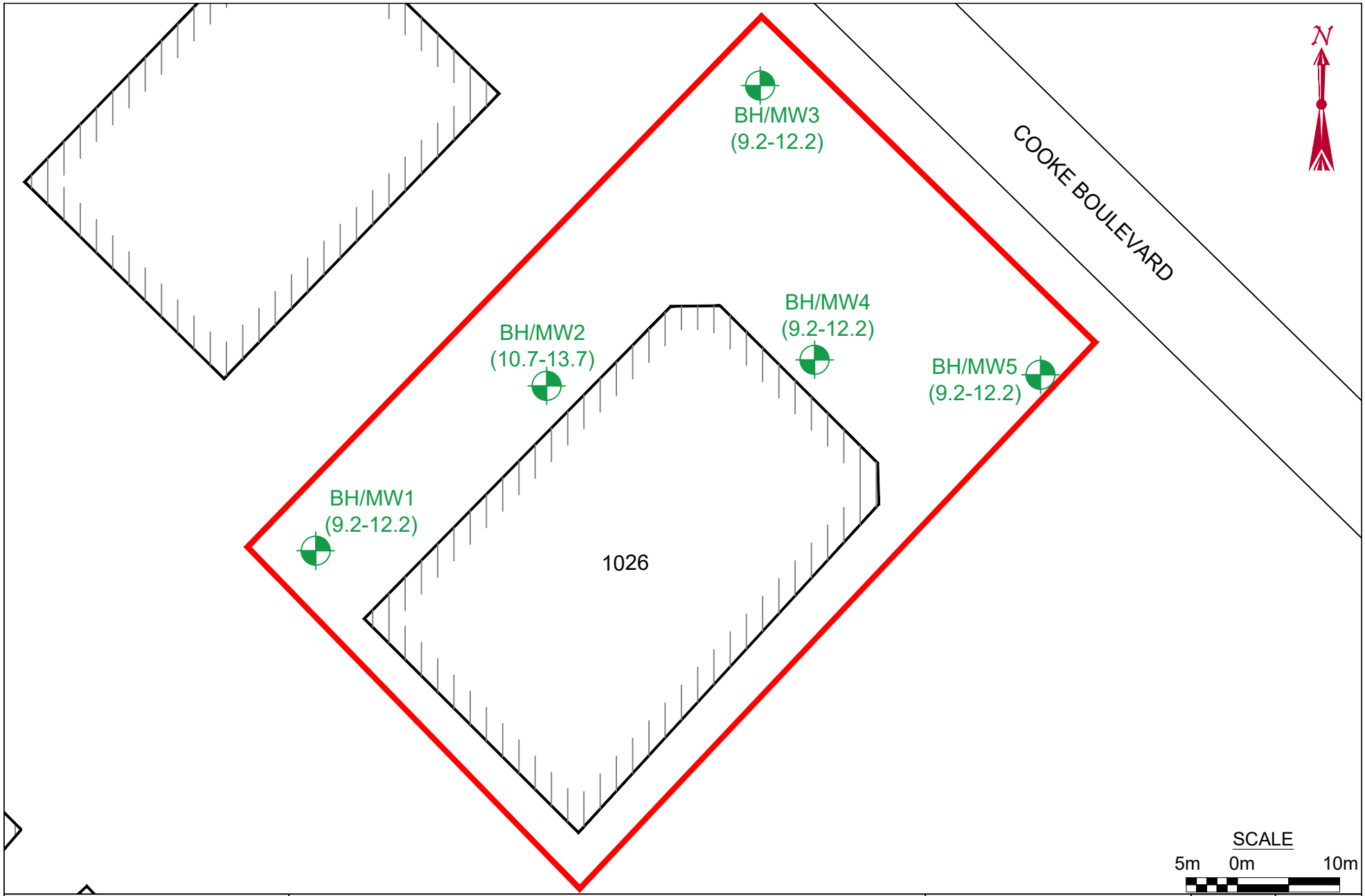
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- MEETS MECP TABLE 3 SCS
- [xx.xx] WELL SCREEN DEPTH (m bgs)

TITLE AND LOCATION

PHCs CONCENTRATIONS IN GROUNDWATER
PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	14



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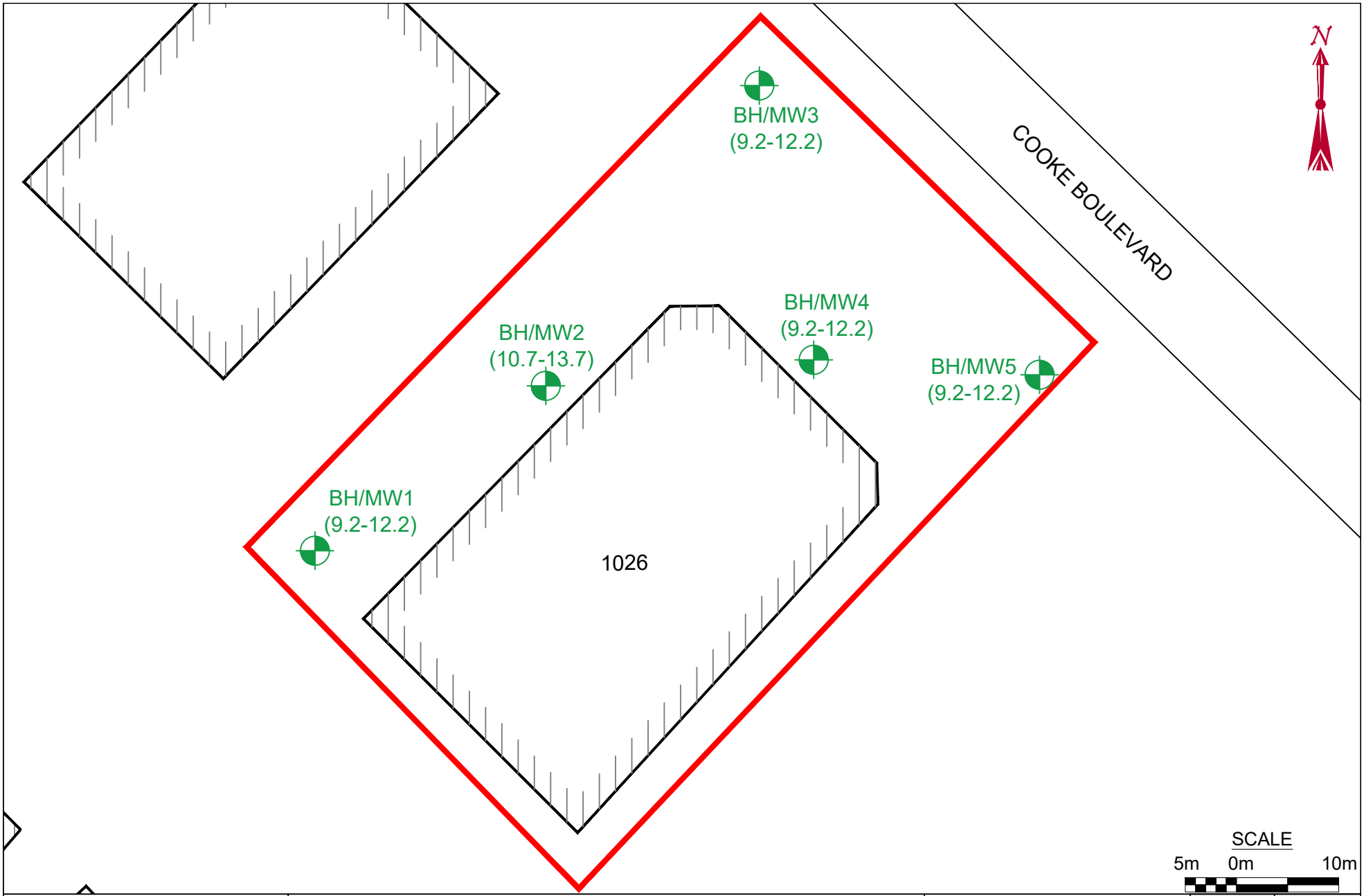
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- MEETS MECP TABLE 3 SCS
- [xx.xx] WELL SCREEN DEPTH (m bgs)

TITLE AND LOCATION

VOCs AND BTEX CONCENTRATIONS IN GROUNDWATER

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	15



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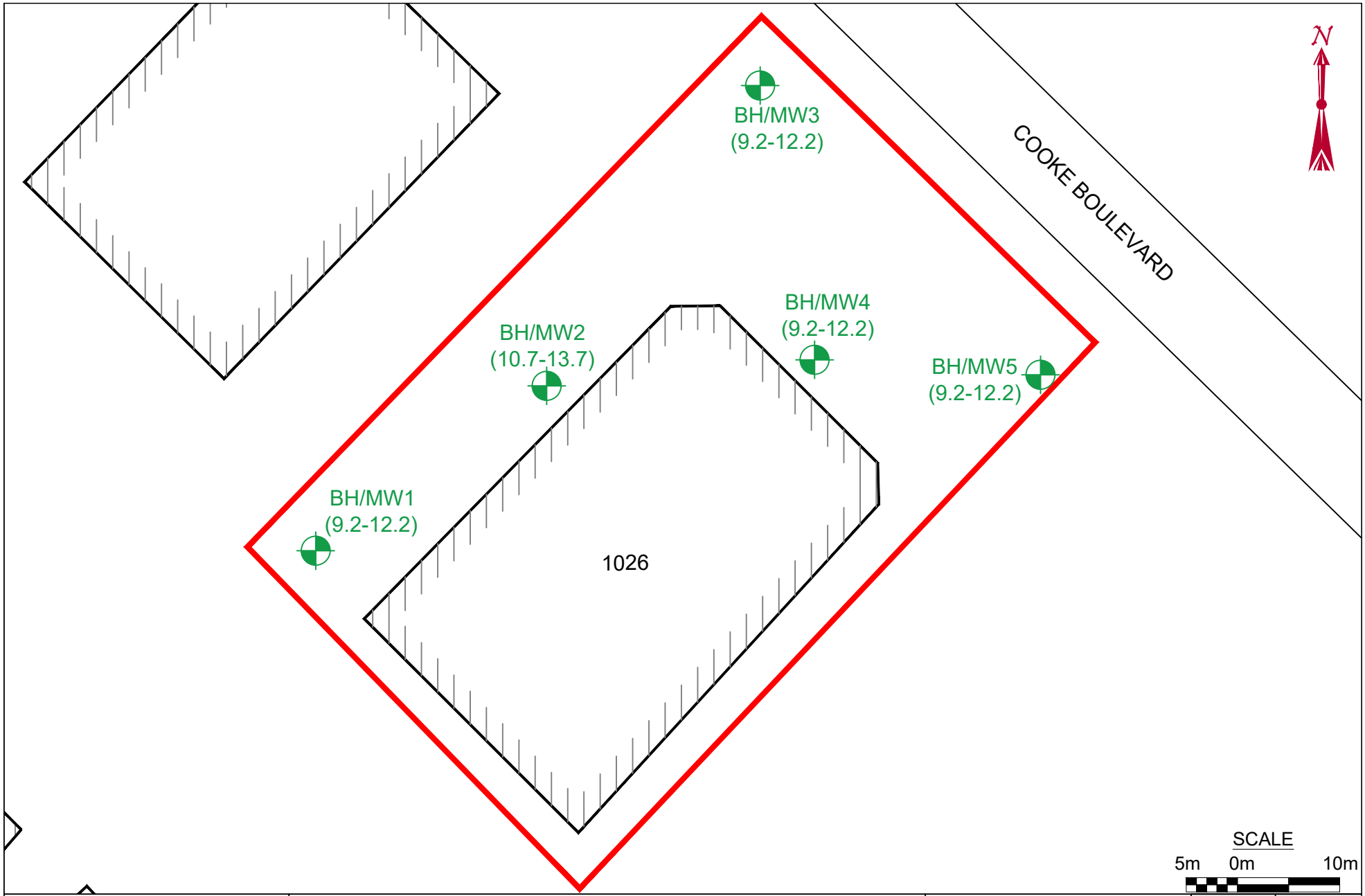
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- MEETS MECP TABLE 3 SCS
- [xx.xx] WELL SCREEN DEPTH (m bgs)

TITLE AND LOCATION

PAHs CONCENTRATIONS IN GROUNDWATER

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	16



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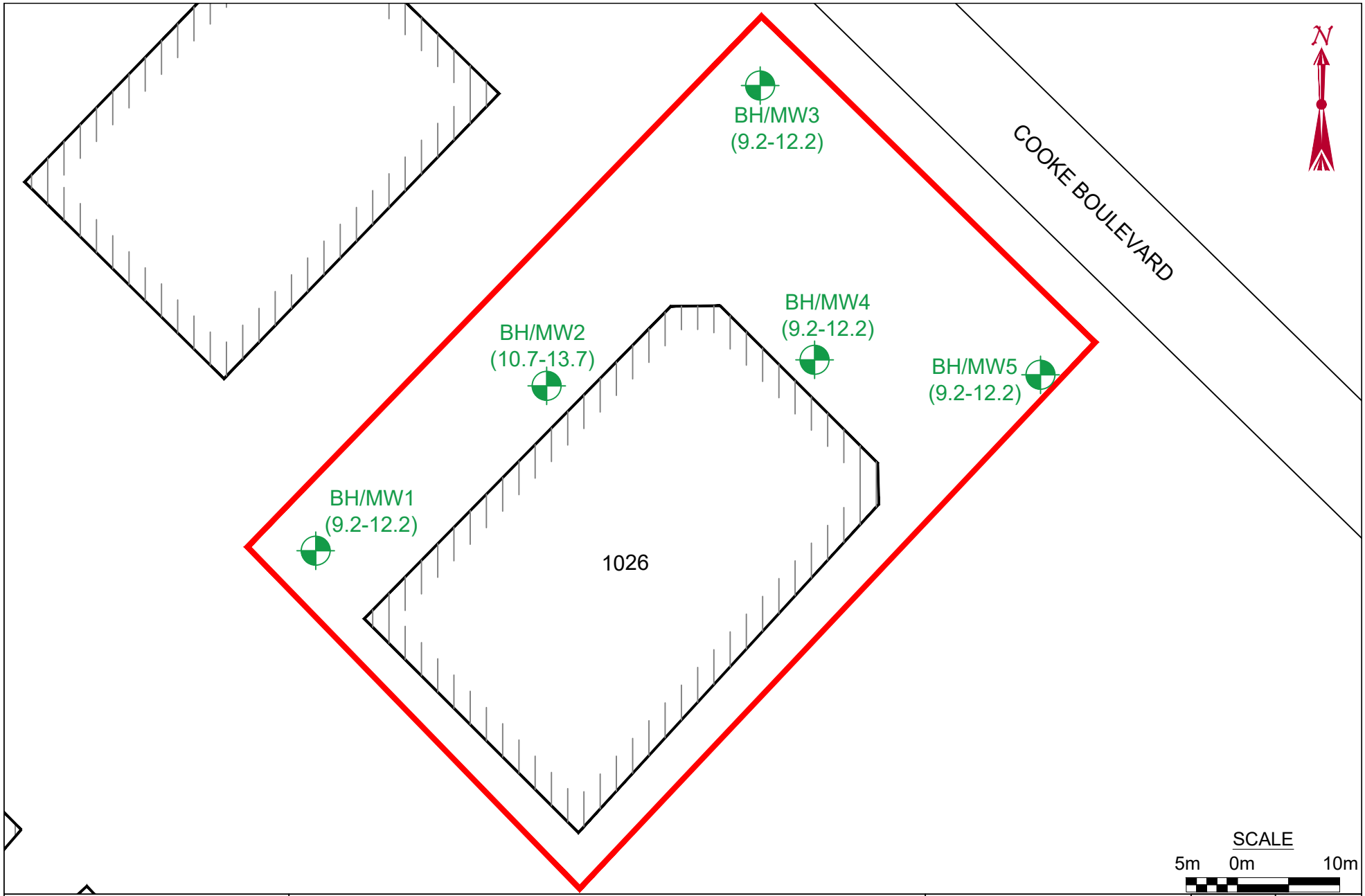
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- MEETS MECP TABLE 3 SCS
- [xx.xx] WELL SCREEN DEPTH (m bgs)

TITLE AND LOCATION

METALS, As, Sb, Se, Cr(VI), Hg AND CN- CONCENTRATIONS IN GROUNDWATER

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	17



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LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF THE BOREHOLE / MONITORING WELL (BIG 2023)
- MEETS MECP TABLE 3 SCS
- [xx.xx] WELL SCREEN DEPTH (m bgs)

TITLE AND LOCATION

SODIUM AND CHLORIDE CONCENTRATIONS IN GROUNDWATER

PHASE TWO ESA
1026 COOKE BOULEVARD,
BURLINGTON, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-605A	T.S.
SCALE	CK.
AS NOTED	T.V.H.
DATE	FIG NO.
SEPTEMBER 2023	18

Tables

TABLE 1 – Areas of Potential Environmental Concern (APECs)

BIGC-ENV-605A– Phase Two Environmental Site Assessment

1026 Cooke Boulevard, Burlington, Ontario

APEC	Location of APEC on Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1: Importation of unknown quality of fill material	Entire Site	#30 – Importation of Fill Material of Unknown Quality	On-Site	PAHs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Soil and Groundwater
APEC 2: De-icing salts usage	Exterior of the Site Building	"Other" – Usage of De-icing Salts	On-Site	Electrical Conductivity, SAR, Na and Cl-	Soil and Groundwater
APEC 3: Former chemical product manufacturer	Northern portion	#8 – Chemical Manufacturing, Processing and Bulk Storage	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 4: Former sign manufacturer and print shop	Southwestern portion	#31 – Ink Manufacturing, Processing and Bulk Storage	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 5: Former auto services	Southeastern portion	#10 – Commercial Autobody Shops	Off-Site	PHCs, BTEX and VOCs	Groundwater
APEC 6: Former UST	Southeastern portion	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs and BTEX	Groundwater
APEC 7: Former dry cleaner	Southwestern portion	#37 – Operation of Dry Cleaning Equipment (where chemicals are used)	Off-Site	VOCs	Groundwater
APEC 8: Former semiconductor and other electronic component	Northeastern portion	#19 – Electronic and Computer Equipment Manufacturing	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater

APEC	Location of APEC on Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
manufacturer					
APEC 9: Former semiconductor and other electronic component manufacturer	Northern portion	#19 – Electronic and Computer Equipment Manufacturing	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 10: Former plastic product manufacturer	Northern portion	#43 – Plastics (including Fibreglass) Manufacturing and Processing	Off-Site	VOCs	Groundwater
APEC 11: Former electronic parts manufacturer	Northern portion	#19 – Electronic and Computer Equipment Manufacturing	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater
APEC 12: Print shop	Northern portion	#31 – Ink Manufacturing, Processing and Bulk Storage	Off-Site	VOCs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS and CN-	Groundwater

(1) Areas of potential environmental concern means the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through,
   a. Identification of past or present uses in, on or under the phase one property, and
   b. Identification of potentially contaminating activity.

(2) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area.

PHCs = petroleum hydrocarbons; BTEX = benzene, toluene, ethylbenzene, xylenes; VOCs = volatile organic compounds; PAHs = polycyclic aromatic hydrocarbons; As = arsenic; Sb = antimony; Se = selenium; B-HWS = boron-hot water soluble; Cr (VI) = hexavalent chromium; Hg = mercury; CN- = cyanide.

TABLE 2 – Summary of Soil Samples Submitted for Chemical Analysis

BIGC-ENV-605A– Phase Two Environmental Site Assessment

1026 Cooke Boulevard, Burlington, Ontario

Soil Sample ID	Rationale	Requested Analyses	Consultant
BH/MW1-SS1	APECs 1, 2 and Site characterization	PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG
BH/MW1-SS2	Site characterization	PHCs, VOCs	BIG
BH/MW2-SS1	APECs 1, 2 and Site characterization	PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG
BH/MW2-SS3	Site characterization	PHCs, VOCs	BIG
BH/MW3-SS2	APECs 1, 2 and Site characterization	PHCs, VOCs, PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG
BH/MW4-SS2	APECs 1, 2 and Site characterization	PHCs, VOCs, PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG
BH/MW5-SS2	Site characterization	PHCs, VOCs	BIG
BH/MW5-SS4	APECs 1, 2 and Site characterization	PAHs, Metals, As, Sb, Se, B-HWS, Cr (VI), Hg, CN-, EC, SAR	BIG

TABLE 3 – Monitoring Well Installation Details

BIGC-ENV-605A – Phase Two Environmental Site Assessment

1026 Cooke Boulevard, Burlington, Ontario

Well ID	Consultant	Ground Elevation (m asl)	Stick down (m)	Top of screen (m bgs)	Bottom of screen (m bgs)	Screen length (m)	Top of screen (m asl)	Bottom of screen (m asl)	Geologic Units Intercepted by Well Screen	Well Condition
BH/MW1	BIG	101.98	0.09	9.2	12.2	3	92.78	89.78	Silty Sand	Intact
BH/MW2	BIG	101.67	0.11	10.7	13.7	3	90.97	87.97	Sand	Intact
BH/MW3	BIG	100.64	0.12	9.2	12.2	3	91.44	88.44	Sand	Intact
BH/MW4	BIG	101.71	0.11	9.2	12.2	3	92.51	89.51	Sand	Intact
BH/MW5	BIG	101.01	0.10	9.2	12.2	3	91.81	88.81	Sand	Intact

TABLE 4 – Water Level Depths and Elevations

BIGC-ENV-605A – Phase Two Environmental Site Assessment

1026 Cooke Boulevard, Burlington, Ontario

Monitoring Well ID	Ground Surface Elevation	Groundwater Level (m bgs)	Groundwater Elevation (m asl)	Groundwater Monitoring Date
BH/MW1	101.98	9.33	92.65	July 3, 2023
BH/MW2	101.67	9.00	92.67	July 3, 2023
BH/MW3	100.64	7.92	92.72	July 3, 2023
BH/MW4	101.71	9.06	92.65	July 3, 2023
BH/MW5	101.01	8.38	92.63	July 3, 2023

TABLE 5 – Summary of Groundwater Samples Submitted for Chemical Analysis

BIGC-ENV-605A – Phase Two Environmental Site Assessment

1026 Cooke Boulevard, Burlington, Ontario

Monitoring Well ID	Rationale	Requested Analyses	Consultant
BH/MW1	APECs 1, 2, 3, 9, 10, 11, and 12 characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG
BH/MW2	APECs 1, 2 and Site characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG
BH/MW3	APECs 1, 2, 3, 8, 9, 10, 11, and 12 characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG
BH/MW4	APECs 1, 2 and Site characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG
BH/MW5	APECs 1, 2, 5, and 6 characterization	PHCs, VOCs, PAHs, metals, As, Sb, Se, Cr (VI), Hg, CN-, Na, Cl-	BIG

Appendix A - Sampling and Analysis Plan

1. Introduction

This appendix presents the Site Sampling and Analysis Plan (SSAP) that was developed in support of the Phase Two Environmental Site Assessment (ESA), which will be conducted to provide further characterization of the Site subsurface conditions. The SSAP 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 Two ESA.

The SSAP 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 One ESA.

The soil samples will be collected from the surficial 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 24.9 metres 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 24.9 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 reworked native and overburden soils by a drilling company under the full-time supervision of BIG staff. A track mounted drilling machine equipped with solid and 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 pre-wrapped in plastic, which will be removed prior to insertion in the borehole to minimize the potential for 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 Waterra® tubing. 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) Elevation Survey

An elevation survey will be conducted to obtain vertical control of the newly installed monitoring well locations. The top of casing and ground surface elevation of each monitoring well location will be surveyed against a known geodetic benchmark, or if unavailable, against a suitable arbitrary temporary benchmark. Elevations measured against a geodetic benchmark will be recorded as meters above mean sea level (m AMSL). The arbitrary temporary benchmark will be assigned an elevation of 100.00 m. The elevation survey will be accurate to within ± 1 cm.

g) 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, or until dry, 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 headspace.

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.

h) 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 objectives of the Phase Two 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-spoon 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.

e) Field Quality Control Samples

Field quality controls samples will be collected to evaluate the accuracy and reproducibility of the field sampling procedures. Where required, for groundwater samples, a trip blank prepared by a laboratory will be submitted for chemical analysis to evaluate the potential for sample cross-contamination or bias. The recommended alert criteria for the trip blank sample are the detections of any test group analyte at a concentration in excess of laboratory detection limits.

Appendix B – Analytical Results

Sample ID	MOECC (2011) Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition Residential/Parkland/Institutional Land Use (coarse textured soil)	BH/MW1-SS2	BH/MW2-SS3	BH/MW3-SS2	BH/MW4-SS2	BH/MW5-SS2	DUP5020 (Duplicate of BH/MW5-SS2)
Lab ID		WGV614	WGH788	WGH789	WGV615	WGH790	WGH791
Sampling Date		30-Jun-23	26-Jun-23	27-Jun-23	29-Jun-23	28-Jun-23	28-Jun-23
Soil Sample Depth (m)		0.76-1.37	1.52-2.13	0.76-1.37	0.76-1.37	0.76-1.37	0.76-1.37
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV
PHC F1 (C6-C10)	55	<10	<10	<10	<10	<10	<10
PHC F1 (C6-C10) - BTEX	55	<10	<10	<10	<10	<10	<10
PHC F2 (C10-C16)	98	<10	<10	<10	<10	<10	<10
PHC F3 (C16-C34)	300	<50	<50	<50	<50	<50	<50
PHC F4 (C34-C50)	2800	150	<50	<50	56	<50	<50
Reached baseline at C50?	-	YES	YES	YES	YES	YES	YES
PHC F4 (C34-C50)-gravimetric	2800	-	-	-	-	-	-

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MOECC (2011) SCS.
Non-detect but detection limit exceeds the MOECC (2011) SCS.

Sample ID	MOECC (2011) Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition Residential/Parkland/Institutional Land Use (coarse textured soil)	BH/MW1-SS2	BH/MW2-SS3	BH/MW3-SS2	BH/MW4-SS2	BH/MW5-SS2	DUP5020 (Duplicate of BH/MW5-SS2)
Lab ID		WGV614	WGH788	WGH789	WGV615	WGH790	WGH791
Sampling Date		30-Jun-23	26-Jun-23	27-Jun-23	29-Jun-23	28-Jun-23	28-Jun-23
Soil Sample Depth (m)		0.76-1.37	1.52-2.13	0.76-1.37	0.76-1.37	0.76-1.37	0.76-1.37
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV
Acetone	16	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49
Benzene	0.21	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Bromodichloromethane	13	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Bromoform	0.27	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Bromomethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Carbon Tetrachloride	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Chlorobenzene	2.4	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Chloroform	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Dibromochloromethane	9.4	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichlorobenzene	3.4	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,3-Dichlorobenzene	4.8	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,4-Dichlorobenzene	0.083	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Dichlorodifluoromethane	16	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,1-Dichloroethane	3.5	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichloroethane	0.05	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049
1,1-Dichloroethylene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
cis-1,2-Dichloroethylene	3.4	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
trans-1,2-Dichloroethylene	0.084	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichloropropane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
cis-1,3-Dichloropropene	0.05	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
trans-1,3-Dichloropropene	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
cis- & trans-1,3-Dichloropropene	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	2	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Ethylene Dibromide (1,2-Dibromoethane)	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Hexane (n)	2.8	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Methylene chloride (Dichloromethane)	0.1	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049
Methyl ethyl ketone (2-Butanone)	16	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Methyl Isobutyl Ketone	1.7	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Methyl t-butyl ether (MTBE)	0.75	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	0.7	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,1,2-Tetrachloroethane	0.058	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,2,2-Tetrachloroethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Tetrachloroethylene	0.28	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Toluene	2.3	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	0.38	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,2-Trichloroethane	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethylene	0.061	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	4	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Vinyl Chloride	0.02	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
m-Xylene + p-Xylene	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
o-Xylene	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes (total)	3.1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

1,3-Dichloropropene (cis + trans)

All soil concentrations reported in µg/g.

'<' = Parameter below detection limit, as indicated

'NV'= No value

Bold Concentration exceeds MOECC (2011) SCS.

Non-detect but detection limit exceeds the MOECC (2011) SCS.

Sample ID	MOECC (2011) Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition Residential/Parkland/Institutional Land Use (coarse textured soil)	BH/MW1-SS1	BH/MW2-SS1	DUP2010 (Duplicate of BH/MW2-SS1)	BH/MW3-SS2	BH/MW4-SS2	BH/MW5-SS4
Lab ID		WGV609	WGH783	WGH784	WGH785	WGV610	WGH787
Sampling Date		30-Jun-23	26-Jun-23	26-Jun-23	27-Jun-23	29-Jun-23	28-Jun-23
Soil Sample Depth (m)		0.08-0.76	0.08-0.76	0.08-0.76	0.76-1.37	0.76-1.37	2.29-2.90
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV
Acenaphthene	7.9	<0.050	<0.050	<0.050	<0.0050	<0.0050	<0.0050
Acenaphthylene	0.15	<0.050	<0.050	<0.050	<0.0050	0.011	<0.0050
Anthracene	0.67	<0.050	<0.050	<0.050	<0.0050	0.012	<0.0050
Benzo(a)anthracene	0.5	0.12	0.074	0.095	<0.0050	0.069	0.01
Benzo(a)pyrene	0.3	0.16	0.093	0.11	<0.0050	0.081	0.011
Benzo(b)fluoranthene	0.78	0.22	0.13	0.15	<0.0050	0.12	0.014
Benzo(ghi)perylene	6.6	0.15	0.11	0.12	<0.0050	0.05	0.011
Benzo(k)fluoranthene	0.78	0.08	<0.050	0.053	<0.0050	0.04	<0.0050
Chrysene	7	0.13	0.089	0.11	<0.0050	0.061	0.0079
Dibenz(a,h)anthracene	0.1	<0.050	<0.050	<0.050	<0.0050	0.013	<0.0050
Fluoranthene	0.69	0.28	0.16	0.23	<0.0050	0.14	0.02
Fluorene	62	<0.050	<0.050	<0.050	<0.0050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	0.13	0.081	0.097	<0.0050	0.052	0.0092
1-Methylnaphthalene	0.99	<0.050	<0.050	<0.050	<0.0050	<0.0050	<0.0050
2-Methylnaphthalene	0.99	<0.050	<0.050	<0.050	<0.0050	<0.0050	<0.0050
1&2-Methylnaphthalene	0.99	<0.071	<0.071	<0.071	<0.0071	<0.0071	<0.0071
Naphthalene	0.6	<0.050	<0.050	<0.050	<0.0050	<0.0050	<0.0050
Phenanthrene	6.2	0.09	<0.050	0.057	<0.0050	0.045	0.0057
Pyrene	78	0.22	0.13	0.18	<0.0050	0.12	0.013

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MOECC (2011) SCS.
Non-detect but detection limit exceeds the MOECC (2011) SCS.

Sample ID	MOECC (2011) Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition Residential/Parkland/Institutional Land Use (coarse textured soil)	BH/MW1-SS1	BH/MW2-SS1	BH/MW3-SS2	DUP3020 (Duplicate of BH/MW3-SS2)	BH/MW4-SS2	BH/MW5-SS4
Lab ID		WGV609	WGH783	WGH785	WGH786	WGV610	WGH787
Sampling Date		30-Jun-23	26-Jun-23	27-Jun-23	27-Jun-23	29-Jun-23	28-Jun-23
Soil Sample Depth (m)		0.08-0.76	0.08-0.76	0.76-1.37	0.76-1.37	0.76-1.37	2.29-2.90
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV
Antimony	7.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic	18	2.8	1.8	2.5	2.5	3.7	5.5
Barium	390	19	15	14	12	38	36.0
Beryllium	4	<0.20	<0.20	<0.20	<0.20	0.32	0.49
Boron (Total)	120	5.5	<5.0	<5.0	<5.0	<5.0	<5.0
Boron (Hot water soluble)	1.5	0.35	0.16	0.071	0.074	0.33	0.11
Cadmium	1.2	0.1	0.1	<0.10	<0.10	0.13	<0.10
Chromium (total)	160	7.1	5	4.8	5.9	9.6	13.0
Chromium VI	8	<0.18	<0.18	<0.18	<0.18	<0.18	0.22
Cobalt	22	3.7	1.9	2.3	2.4	4.6	6.5
Copper	140	16	9.6	9.1	11	26	35
Lead	120	9.3	22	3.1	3.9	29	9.5
Mercury	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Molybdenum	6.9	0.56	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	100	9.7	4	4.8	5.1	9.7	14
Selenium	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	1	<0.050	<0.050	<0.050	<0.050	0.061	0.071
Uranium	23	0.29	0.31	0.43	0.28	0.34	0.48
Vanadium	86	12	10	12	13	17	25
Zinc	340	35	54	11	13	47	32.0
Electrical Conductivity (mS/cm)	0.7	**0.72**	0.51	0.48	0.51	**2.8**	**1.2**
Sodium Adsorption Ratio (unitless)	5	**16**	**17**	**18**	**14**	**46**	**16**
Free Cyanide	0.051	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
pH (pH units)	5-9 (surface soil); 5-11 (subsurface soil)	8.11	8.34	8.13	7.75	7.64	8.14

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MOECC (2011) SCS.
Non-detect but detection limit exceeds the MOECC (2011) SCS.
pH level outside of the acceptable MOECC range

Sample ID	MOECC (2011) Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition All Types of Land Use (coarse textured soil)	BH/MW 1	BH/MW 2	BH/MW 3	BH/MW 4	DUP 40 (Duplicate of BH/MW 4)	BH/MW 5	TRIP BLANK
Lab ID		WHI397	WHI398	WHI399	WHI400	WHI402	WHI401	WHI403
Sampling Date		5-Jul-23	5-Jul-23	5-Jul-23	5-Jul-23	5-Jul-23	5-Jul-23	5-Jul-23
Screen Depth Interval (m)		9.2-12.2	10.7-13.7	9.2-12.2	9.2-12.2	9.2-12.2	9.2-12.2	-
Consultant		BIG	BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV	BV
PHC F1 (C6-C10)	750	<25	<25	<25	<25	<25	<25	<25
PHC F1 (C6-C10) - BTEX	750	<25	<25	<25	<25	<25	<25	<25
PHC F2 (C10-C16)	150	<100	<100	<100	<100	<100	<100	<100
PHC F3 (C16-C34)	500	<200	<200	<200	<200	<200	<200	<200
PHC F4 (C34-C50)	500	<200	<200	<200	<200	<200	<200	<200
Reached baseline at C50?	-	YES	YES	YES	YES	YES	YES	YES
PHC F4 (C34-C50)-gravimetric	500	-	-	-	-	-	-	-

All groundwater concentrations reported in µg/L.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MOECC (2011) SCS.
Non-detect but detection limit exceeds the MOECC (2011) SCS.

Sample ID	MOECC (2011) Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition All Types of Land Use (coarse textured soil)	BH/MW 1	BH/MW 2	BH/MW 3	BH/MW 4	DUP 40 (Duplicate of BH/MW 4)	BH/MW 5	Trip Blank
Lab ID		WHI397	WHI398	WHI399	WHI400	WHI402	WHI401	WHI403
Sampling Date		5-Jul-23	5-Jul-23	5-Jul-23	5-Jul-23	5-Jul-23	5-Jul-23	5-Jul-23
Screen Depth Interval (m)		9.2-12.2	10.7-13.7	9.2-12.2	9.2-12.2	9.2-12.2	9.2-12.2	-
Consultant		BIG	BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV	BV
Acetone	130000	<10	<10	<10	<10	<10	<10	-
Benzene	44	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.20
Bromodichloromethane	85000	0.79	<0.50	<0.50	<0.50	<0.50	<0.50	-
Bromoform	380	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
Bromomethane	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
Carbon Tetrachloride	0.79	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
Chlorobenzene	630	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
Chloroform	2.4	2.3	1.8	0.66	0.88	0.83	0.87	-
Dibromochloromethane	82000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
1,2-Dichlorobenzene	4600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
1,3-Dichlorobenzene	9600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
1,4-Dichlorobenzene	8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
Dichlorodifluoromethane	4400	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
1,1-Dichloroethane	320	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
1,2-Dichloroethane	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
1,1-Dichloroethylene	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
cis-1,2-Dichloroethylene	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
trans-1,2-Dichloroethylene	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
1,2-Dichloropropane	16	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
cis-1,3-Dichloropropene	5.2	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-
trans-1,3-Dichloropropene	5.2	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	-
cis- & trans-1,3-Dichloropropene	5.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
Ethylbenzene	2300	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylene Dibromide (1,2-Dibromoethane)	0.25	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
Hexane (n)	51	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
Methylene chloride (Dichloromethane)	610	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-
Methyl ethyl ketone (2-Butanone)	470000	<10	<10	<10	<10	<10	<10	-
Methyl Isobutyl Ketone	140000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-
Methyl t-butyl ether (MTBE)	190	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
Styrene	1300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
1,1,1,2-Tetrachloroethane	3.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
1,1,2,2-Tetrachloroethane	3.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
Tetrachloroethylene	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
Toluene	18000	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	640	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
1,1,2-Trichloroethane	4.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
Trichloroethylene	1.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
Trichlorofluoromethane	2500	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
Vinyl Chloride	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-
m-Xylene + p-Xylene	NV	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40
o-Xylene	NV	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylenes (total)	4200	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40

All groundwater concentrations reported in µg/L.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MOECC (2011) SCS.
Non-detect but detection limit exceeds the MOECC (2011) SCS.

Samle ID	MOECC (2011) Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition All Types of Land Use (coarse textured soil)	BH/MW 1	BH/MW 2	BH/MW 3	BH/MW 4	DUP 40 (Duplicate of BH/MW 4)	BH/MW 5
Lab ID		WHI357	WHI358	WHI359	WHI360	WHI362	WHI361
Sampling Date		05/Jul/23	05-Jul-23	05-Jul-23	05-Jul-23	05-Jul-23	5-Jul-23
Screen Depth Interval (m)		9.2-12.2	10.7-13.7	9.2-12.2	9.2-12.2	9.2-12.2	9.2-12.2
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV
Acenaphthene	600	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	1.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	2.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	4.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.81	<0.0090	<0.0090	<0.0090	<0.0090	<0.0090	<0.0090
Benzo(b)fluoranthene	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(ghi)perylene	0.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene	0.52	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	130	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	400	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene	1800	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Methylnaphthalene	1800	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1&2-Methylnaphthalene	1800	<0.071	<0.071	<0.071	<0.071	<0.071	<0.071
Naphthalene	1400	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	580	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Pyrene	68	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

All groundwater concentrations reported in µg/L.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MOECC (2011) SCS.
Non-detect but detection limit exceeds the MOECC (2011) SCS.

Sample ID	MOECC (2011) Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition All Types of Land Use (coarse textured soil)	BH/MW 1	BH/MW 2	BH/MW 3	BH/MW 4	DUP 40 (Duplicate of BH/MW 4)	BH/MW 5
Lab ID		WHI357	WHI358	WHI359	WHI360	WHI362	WHI361
Sampling Date		05-Jul-23	05-Jul-23	05-Jul-23	05-Jul-23	05-Jul-23	5-Jul-23
Screen Depth Interval (m)		9.2-12.2	10.7-13.7	9.2-12.2	9.2-12.2	9.2-12.2	9.2-12.2
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV
Antimony	20000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	1900	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	29000	180	170	250	260	260	290
Beryllium	67	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Boron (Total)	45000	88	190	89	90	90	100
Cadmium	2.7	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Chromium (total)	810	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chromium VI	140	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt	66	<0.50	<0.50	<0.50	0.6	0.6	1.0
Copper	87	<0.90	<0.90	2	<0.90	<0.90	4.8
Lead	25	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Mercury	0.29	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Molybdenum	9200	2.4	13	1.6	3.7	3.7	3.8
Nickel	490	<1.0	1.8	3.3	1.8	2.1	3.1
Selenium	63	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Silver	1.5	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Thallium	510	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Uranium	420	2.1	1.7	1.8	2.1	2.1	2
Vanadium	250	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Zinc	1100	<5.0	6	5.2	<5.0	<5.0	7.1
Sodium	2300000	150,000	230,000	620,000	490,000	490,000	470,000
Chloride	2300000	220	370	970	740	750	590
Free Cyanide	66	<1	<1	<1	<1	<1	1

All groundwater concentrations reported in µg/L.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MOECC (2011) SCS.
Non-detect but detection limit exceeds the MOECC (2011) SCS.
Parameter detected and no SCS provided

Appendix C – Borehole Logs

RECORD OF BOREHOLE No. BH/MW1

Project Number:	BIGC-ENV-605A	Drilling Location:	See BH Location Plan	Logged by:	AD
Project Client:	Halton Standard Condominium Corporation No. 416	Drilling Method:	190 mm Hollow Stem Augering	Compiled by:	KH
Project Name:	Geotechnical and Hydrogeological Investigations	Drilling Machine:	Track Mounted Drill	Reviewed by:	AC
Project Location:	1026 Cooke Blvd, Burlington, Ontario	Date Started:	30 Jun 23	Date Completed: 30 Jun 23	Revision No.: 0, 5/9/23

Geodetic Ground Surface Elevation: 101.98 m

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (SPT ○ / DCPT ●); MTO Vane* (Intact △ / Remould ▲); Nilcon Vane* (Intact ◇ / Remould ◆); * Undrained Shear Strength (kPa) 20 40 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_P W W_L; Plastic 20 40 60 80 Liquid	INSTRUMENTATION INSTALLATION	COMMENTS
	ASPHALT PAVEMENT: 80 mm asphalt over 150 mm granular base (101.75 / 0.2)										
	FILL: sand, trace clay, trace silt, trace gravel, brown to redish brown, moist, compact to dense	SS	1	84	22				4		
	(100.46)	SS	2	79	33	1	101		4		
	SAND: trace clay, trace silt, trace gravel, brown to reddish brown, moist to wet, compact (1.5)	SS	3	75	15	2	100		4		
		SS	4	84	25	3	99		5		
		SS	5	87	10				21		
						4	98				
		SS	6	87	22	5	97		6		
						6	96				
		SS	7	67	18				13		
	(94.36)					7	95				
	SILTY SAND: trace clay, trace gravel, brown to reddish brown, wet, compact to very dense (7.6)	SS	8	75	12	8	94		19		
						9	93				
		SS	9	75	15				14		
						10	92				
	- layers of gravel	SS	10	100	50/ 130 mm				12		
						11	91				
						12	90				
		SS	11	75	19				22		
						13	89				

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▽ Groundwater depth on completion of drilling: N/A m.

▼ Groundwater depth observed on July 3, 2023 at a depth of: 9.33 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

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RECORD OF BOREHOLE No. BH/MW1

Project Number: **BIGC-ENV-605A** Drilling Location: **See BH Location Plan** Logged by: **AD**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 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_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	SILTY SAND: trace clay, trace gravel, brown to reddish brown, wet, compact to very dense										
	88.26										
	SILTY CLAY: trace sand, grey, wet, stiff to hard 13.7	SS	12	100	14	14	88	○	○ 28		
						15	87				
		SS	13	59	35			○	○ 33		
						16	86				
	85.22										
	SANDY SILT TILL: trace to some gravel, trace clay, reddish brown, moist, very dense - layers of silty clay till 16.8	SS	14	100	50/ 80 mm	17	85		○ 15		
						18	84				
		SS	15	89	50/ 130 mm				○ 14		
						19	83				
	82.17										
	SILTY CLAY / SHALE COMPLEX: reddish brown, moist, hard 19.8	SS	16	100	50/ 100 mm	20	82		○ 11		
	81.91 20.1										
	Spoon Refusal on Probable Bedrock 1. Borehole was open upon completion of drilling. 2. Groundwater level was measured at 9.33 m below ground surface on July 3, 2023.										

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

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RECORD OF BOREHOLE No. BH/MW2

Project Number:	BIGC-ENV-605A	Drilling Location:	See BH Location Plan	Logged by:	CE
Project Client:	Halton Standard Condominium Corporation No. 416	Drilling Method:	190 / 63.5 mm Hollow Stem Augering / HQ Coring	Compiled by:	KH
Project Name:	Geotechnical and Hydrogeological Investigations	Drilling Machine:	Track Mounted Drill	Reviewed by:	AC
Project Location:	1026 Cooke Blvd, Burlington, Ontario	Date Started:	26 Jun 23	Date Completed: 26 Jun 23	Revision No.: 0, 5/9/23

Geodetic Ground Surface Elevation: 101.67 m

Depth (m)	Elevation (m)	Description	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	Field Testing (Undrained Shear Strength kPa)	Lab Testing (Plastic / Liquid)
0	101.67	**ASPHALT PAVEMENT:** 80 mm asphalt over 210 mm granular base (101.38)						
0.3	101.38	**FILL:** sand, trace clay, trace silt, trace gravel, brown to redish brown, moist, loose to compact	SS	1	67	22		11
1	101		SS	2	62	17		5
2	100		SS	3	59	9		9
2.3	99.38	**SAND:** trace clay, trace silt, trace gravel, brown to reddish brown, moist to wet, compact	SS	4	75	10		7
3	99		SS	5	70	15		18
4	98							
5	97	- layers of silty clay	SS	6	67	18		18
6	96							
7	95		SS	7	67	28		8
8	94		SS	8	70	24		5
9	93							
10	92		SS	9	70	27		22
11	91	- layers of gravel	SS	10	75	29		12
12	90							
13	89		SS	11	79	18		21

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Groundwater depth on completion of drilling: N/A m.

Groundwater depth observed on July 3, 2023 at a depth of: 9.00 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

RECORD OF BOREHOLE No. BH/MW2

Project Number: **BIGC-ENV-605A** Drilling Location: **See BH Location Plan** Logged by: **CE**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (○ SPT ● DCPT); MTO Vane* (△ Intact ▲ Remould); Nilcon Vane* (◇ Intact ◆ Remould); * Undrained Shear Strength (kPa) 20 40 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_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	SAND: trace clay, trace silt, trace gravel, brown to reddish brown, moist to wet, compact 87.95										
	SILTY CLAY: grey, moist, stiff 13.7	SS	12	95	12	14	88	○	○ 23		
	86.43					15	87				
	SILTY CLAY TILL: some sand to sandy, trace gravel, containing occasional cobbles and boulders, grey to redish grey, moist, hard 15.2	SS	13	100	33	16	86	○	○ 17		
	84.91						85				
	SILT: trace clay, trace sand, layers of silty clay, seams of silty sand, brown to grey, wet, very dense 16.8	SS	14	100	67	17	84	○	○ 21		
	83.38					18					
	SANDY SILT TILL: trace clay, trace gravel, brown to reddish brown, moist to wet, very dense 18.3	SS	15	95	64	19	83	○	○ 21		Gr: 9%; Sa: 26%; Si: 58%; Cl: 7%
	81.86						82				
	SILTY CLAY / SHALE COMPLEX: reddish brown, moist, hard 19.8	SS	16	100	50/ 80 mm	20					
	81.02						81				
	BEDROCK: Shale, Queenston Formation, highly weathered to slightly weathered, fair to good quality, medium strong to strong, occasional limestone layers, reddish brown to grey 20.7 - Fair Quality	RC	1	100	70	21			○		Point Load Test UCS (Axial): 64.73 MPa
	- Fair Quality	RC	2	100	75	22	80		○		
	- Good Quality	RC	3	100	82	23	79		○		Point Load Test UCS (Axial): 63.90 MPa
	77.06					24	78		○		Point Load Test UCS (Axial): 33.46 MPa
	End of Borehole 24.6 1. Borehole was open upon completion of drilling. 2. Groundwater level was measured at 9.00 m below ground surface on July 3, 2023.										

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

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RECORD OF BOREHOLE No. BH/MW3

Project Number:	BIGC-ENV-605A	Drilling Location:	See BH Location Plan	Logged by:	CE
Project Client:	Halton Standard Condominium Corporation No. 416	Drilling Method:	190 / 100 mm Hollow Stem Augering / Mud Rotary	Compiled by:	KH
Project Name:	Geotechnical and Hydrogeological Investigations	Drilling Machine:	Track Mounted Drill	Reviewed by:	AC
Project Location:	1026 Cooke Blvd, Burlington, Ontario	Date Started:	27 Jun 23	Date Completed: 27 Jun 23	Revision No.: 0, 5/9/23

Geodetic Ground Surface Elevation: 100.64 m

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Undrained Shear Strength (kPa)	LAB TESTING: Rinse pH Values	LAB TESTING: Soil Vapour Reading (ppm)	LAB TESTING: Lower Explosive Limit (LEL)	INSTRUMENTATION INSTALLATION	COMMENTS
	ASPHALT PAVEMENT: 100 mm asphalt over 320 mm granular base (100.22)												
	FILL: sand, trace clay, trace silt, trace gravel, brown, moist, compact (0.4)	SS	1	67	16					6			
	(99.12)	SS	2	67	13	1	100			8			
	SAND: trace clay, trace silt, trace gravel, brown, moist to wet, loose to compact (1.5)	SS	3	67	19	2	99			6			
	(97.95)	SS	4	100	6		98			22			
	SILTY CLAY: trace sand, trace gravel, redish brown, moist to wet, firm to very stiff (2.7)					3							
	- seams of sand	SS	5	84	14		97			18			
		SS	6	92	29	4	96			20			
	(94.54)					5	95						
	SAND: trace clay, trace silt, trace gravel, brown to redish brown, moist to wet, compact to very dense (6.1)	SS	7	79	22	6	94			11			
	- layers of sand and gravel					7							
	- cobbles and boulders - layers of silty sand	SS	8	41	67	8	93			10			
		SS	9	92	36	9	92			21			
	- layers of sandy silt	SS	10	95	42	10	91			20			
	(88.45)					11	90						
	SILTY CLAY TILL: trace to some sand, trace gravel, layers of silty clay, grey, moist, very stiff to hard (12.2)	SS	11	87	27	12	89			20			
						13	88						

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Groundwater depth on completion of drilling: N/A m.

Groundwater depth observed on July 3, 2023 at a depth of: 7.92 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

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RECORD OF BOREHOLE No. BH/MW3

Project Number: **BIGC-ENV-605A** Drilling Location: **See BH Location Plan** Logged by: **CE**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
	SILTY CLAY TILL: trace to some sand, trace gravel, layers of silty clay, grey, moist, very stiff to hard										
		SS	12	100	38	14	87		15		
							86				
						15					
	85.02	SS	13	100	97		85		16		
	SANDY SILT: trace clay, reddish brown, moist, very dense 15.6					16					
	83.42	SS	14	100	58	17	84		23		
	SILTY CLAY / SHALE COMPLEX: reddish brown, moist, hard 17.2						83				
		SS	15	100	50/ 80 mm	18					
							82				
						19					
	80.83						81				
	BEDROCK: Shale, Queenston Formation 19.8	SS	16	100	50/ 30 mm						
	End of Borehole										

1. Borehole was open upon completion of drilling.
2. Groundwater level was measured at 7.92 m below ground surface on July 3, 2023.

FIELD TESTING: Penetration Testing — ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 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_P W W_L; Plastic Liquid 20 40 60 80

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

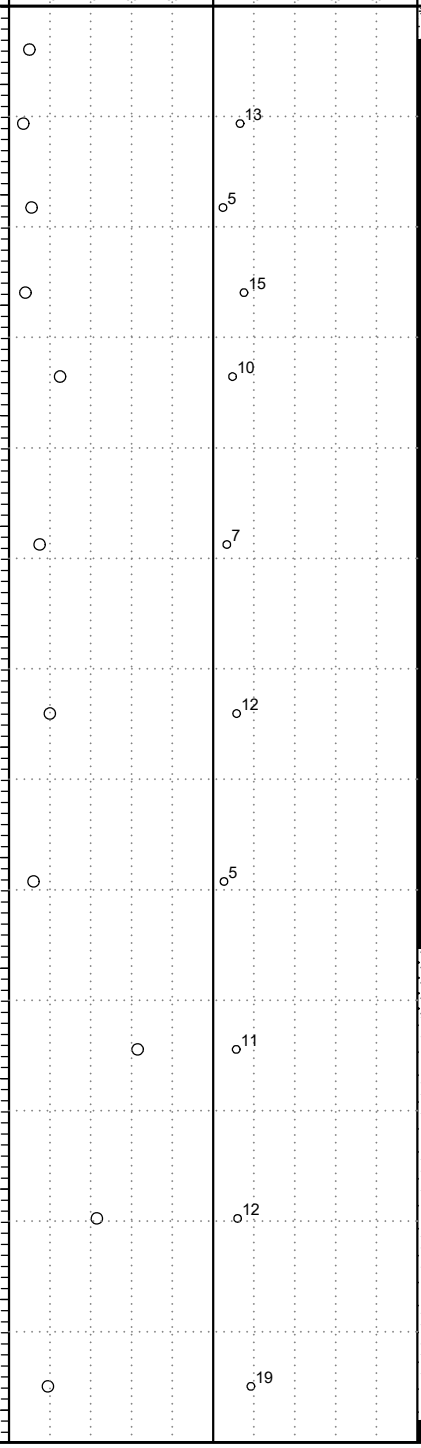
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RECORD OF BOREHOLE No. BH/MW4

Project Number:	BIGC-ENV-605A	Drilling Location:	See BH Location Plan	Logged by:	CE
Project Client:	Halton Standard Condominium Corporation No. 416	Drilling Method:	190 / 63.5 mm Hollow Stem Augering / HQ Coring	Compiled by:	KH
Project Name:	Geotechnical and Hydrogeological Investigations	Drilling Machine:	Track Mounted Drill	Reviewed by:	AC
Project Location:	1026 Cooke Blvd, Burlington, Ontario	Date Started:	29 Jun 23 Date Completed: 29 Jun 23	Revision No.:	0, 5/9/23

Geodetic Ground Surface Elevation: 101.71 m

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)
	ASPHALT PAVEMENT: 90 mm asphalt over 200 mm granular base (101.42)						
	FILL: sand, trace clay, trace silt, trace gravel, brown, moist, loose to compact (0.3)	SS	1	30	10		
	- layers of silty sand	SS	2	79	7	1	101
		SS	3	79	11	2	100
	(99.42)						
	SAND: trace clay, trace silt, trace gravel, brown to reddish brown, moist to wet, loose to very dense (2.3)	SS	4	75	8	3	99
	- layers of silty sand - cobbles and boulders	SS	5	75	25	4	98
		SS	6	75	15	5	97
		SS	7	70	20	6	96
		SS	8	62	12	7	95
	- layers of gravel	SS	9	84	63	8	94
						9	93
	- layers of gravel	SS	10	92	43	10	92
						11	91
	- layers of silty sand	SS	11	75	19	12	90
						13	89



INSTRUMENTATION INSTALLATION

COMMENTS

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Groundwater depth on completion of drilling: N/A m.

Groundwater depth observed on July 3, 2023 at a depth of: 9.06 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

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RECORD OF BOREHOLE No. BH/MW4

Project Number: **BIGC-ENV-605A** Drilling Location: **See BH Location Plan** Logged by: **CE**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (○ SPT ● DCPT); MTO Vane* (△ Intact ▲ Remould); Nilcon Vane* (◇ Intact ◆ Remould); * Undrained Shear Strength (kPa) 20 40 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_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	SAND: trace clay, trace silt, trace gravel, brown to reddish brown, moist to wet, loose to very dense										
	87.99										
	SILTY CLAY: grey, moist, very stiff 13.7	SS	12	100	20	14	88	○	23		
	86.47					15	87				
	SANDY SILT: trace clay, grey, moist, very dense 15.2 - layers of silty clay till	SS	13	100	64			○	16		
	84.95					16	86				
	SILTY CLAY: trace sand, grey, moist, hard 16.8	SS	14	100	55	17	85	○	20		Gr: 0%; Sa: 2%; Si: 70%; Cl: 28% LL: 27%; PL: 14%; PI: 13%
	83.42					18	84				
	SAND AND SILT TILL: trace to some gravel, trace clay, reddish brown, moist, dense 18.3 - layers of silty sand to sandy silt	SS	15	100	31	19	83	○	23		
	81.90										
	BEDROCK: Shale, Queenston Formation, highly weathered to fresh, poor to excellent quality, medium strong to strong, occasional limestone layers, reddish brown to grey 19.8 - Poor Quality	SS	16	100	50/ 100 mm	20	82		8		
		RC	1	100	30	21	81	○			Point Load Test UCS (Axial): 78.13 MPa
	- Good Quality	RC	2	100	78	22	80				
						23	79	○			
	- Excellent Quality	RC	3	100	94	24	78				
	76.84						77	○			Point Load Test UCS (Axial): 43.82 MPa
	End of Borehole 24.9 1. Borehole was open upon completion of drilling. 2. Groundwater level was measured at 9.06 m below ground surface on July 3, 2023.										

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

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RECORD OF BOREHOLE No. BH/MW5

Project Number:	BIGC-ENV-605A	Drilling Location:	See BH Location Plan	Logged by:	CE
Project Client:	Halton Standard Condominium Corporation No. 416	Drilling Method:	190 / 63.5 mm Hollow Stem Augering / HQ Coring	Compiled by:	KH
Project Name:	Geotechnical and Hydrogeological Investigations	Drilling Machine:	Track Mounted Drill	Reviewed by:	AC
Project Location:	1026 Cooke Blvd, Burlington, Ontario	Date Started:	28 Jun 23	Date Completed: 28 Jun 23	Revision No.: 0, 5/9/23

Geodetic Ground Surface Elevation: 101.01 m

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (SPT / DCPT), MTO Vane* (Intact / Remould), Nilcon Vane* (Intact / Remould), * Undrained Shear Strength (kPa) 20 40 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_P W W_L; Plastic 20 40 60 80 Liquid	INSTRUMENTATION INSTALLATION	COMMENTS
	ASPHALT PAVEMENT: 80 mm asphalt over 230 mm granular base 100.70										
	FILL: sand, trace clay, trace silt, trace gravel, brown to redish brown, moist, loose to compact 0.3	SS	1	67	10				12		
	- layers of silty clay	SS	2	79	9	1	100		13		
		SS	3	84	14	2	99		12		
		SS	4	54	4				11		
		SS	5	75	9	3	98		8		
	96.44					4	97				
	SAND: trace clay, trace silt, trace gravel, brown to reddish brown, moist to wet, loose to compact 4.6	SS	6	75	6	5	96		6		
	- cobbles and boulders	SS	7	79	40	6	95		10		
		SS	8	8	16	7	94				
		SS	9	59	17	8	93		22		
		SS	10	67	10	9	92				
						10	91				
		SS	11	100	14	11	90		21		
	88.46					12	89				
	SILTY CLAY: trace sand, grey, moist, stiff 12.6								22		
	- layers of silty clay till					13					

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

Groundwater depth on completion of drilling: N/A m.

Groundwater depth observed on July 3, 2023 at a depth of: 8.38 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

Scale: 1 : 68

Continued on Next Page

RECORD OF BOREHOLE No. BH/MW5

Project Number: **BIGC-ENV-605A** Drilling Location: **See BH Location Plan** Logged by: **CE**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 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_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	SILTY CLAY: trace sand, grey, moist, stiff										
		SS	12	100	15	14	87	○	○ 24		
	85.77					15	86				
	SILTY CLAY TILL: some sand, trace gravel, redish grey, moist, hard 15.2	SS	13	100	34			○	○ 17		Gr: 2%; Sa: 18%; Si: 48%; Cl: 32% LL: 26%; PL: 15%; PI: 11%
						16	85				
		SS	14	100	41	17	84	○	○ 12		
	- containing shale pieces										
	82.72					18	83				
	SILTY CLAY / SHALE COMPLEX: reddish brown, moist, hard 18.3 - layers of sandy silt till	SS	15	100	63			○	○ 10		
	81.35					19	82				
	BEDROCK: Shale, Queenston Formation, highly weathered to fresh, poor to excellent quality, very weak to medium strong, occasional limestone layers, reddish brown to grey 19.7	SS	16	100	50/ 100 mm						
	- Poor Quality	RC	1	100	29	20	81	○			Point Load Test UCS (Axial): 18.65 MPa
	- Good Quality	RC	2	100	80	21	80	○			
	- Excellent Quality	RC	3	100	98	22	79	○			Point Load Test UCS (Axial): 43.88 MPa
						23	78				
	- Excellent Quality	RC	4	100	94	24	77	○			Point Load Test UCS (Axial): 42.61 MPa
	76.22										
	End of Borehole 24.8 1. Borehole was open upon completion of drilling. 2. Groundwater level was measured at 8.38 m below ground surface on July 3, 2023.										

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commisioned and the accompanying'Notes to Record of Boreholes'.

Scale: 1 : 68

Appendix D – Conceptual Site Models

Figure D.1 - Human Health Conceptual On-Site Model

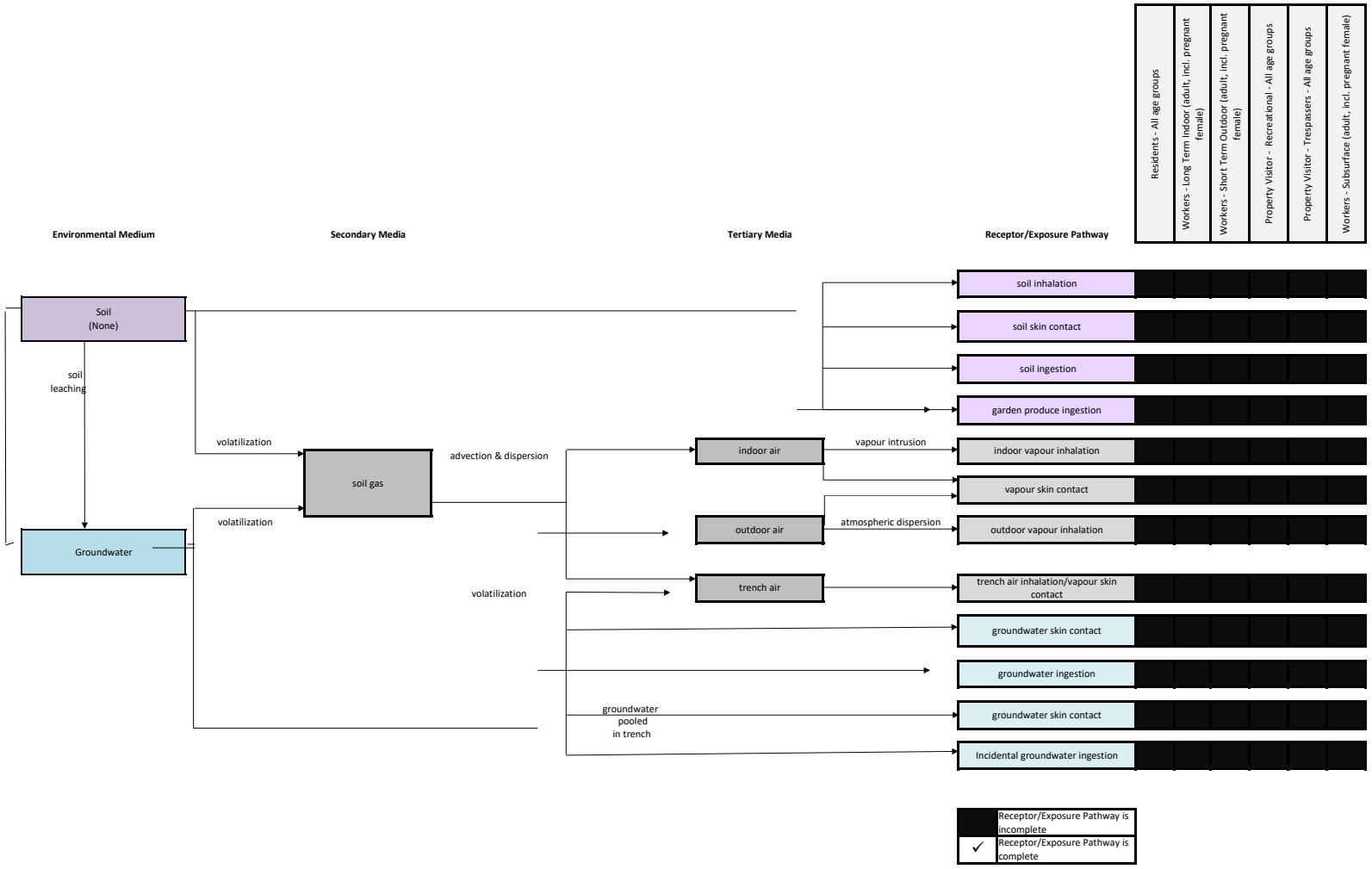
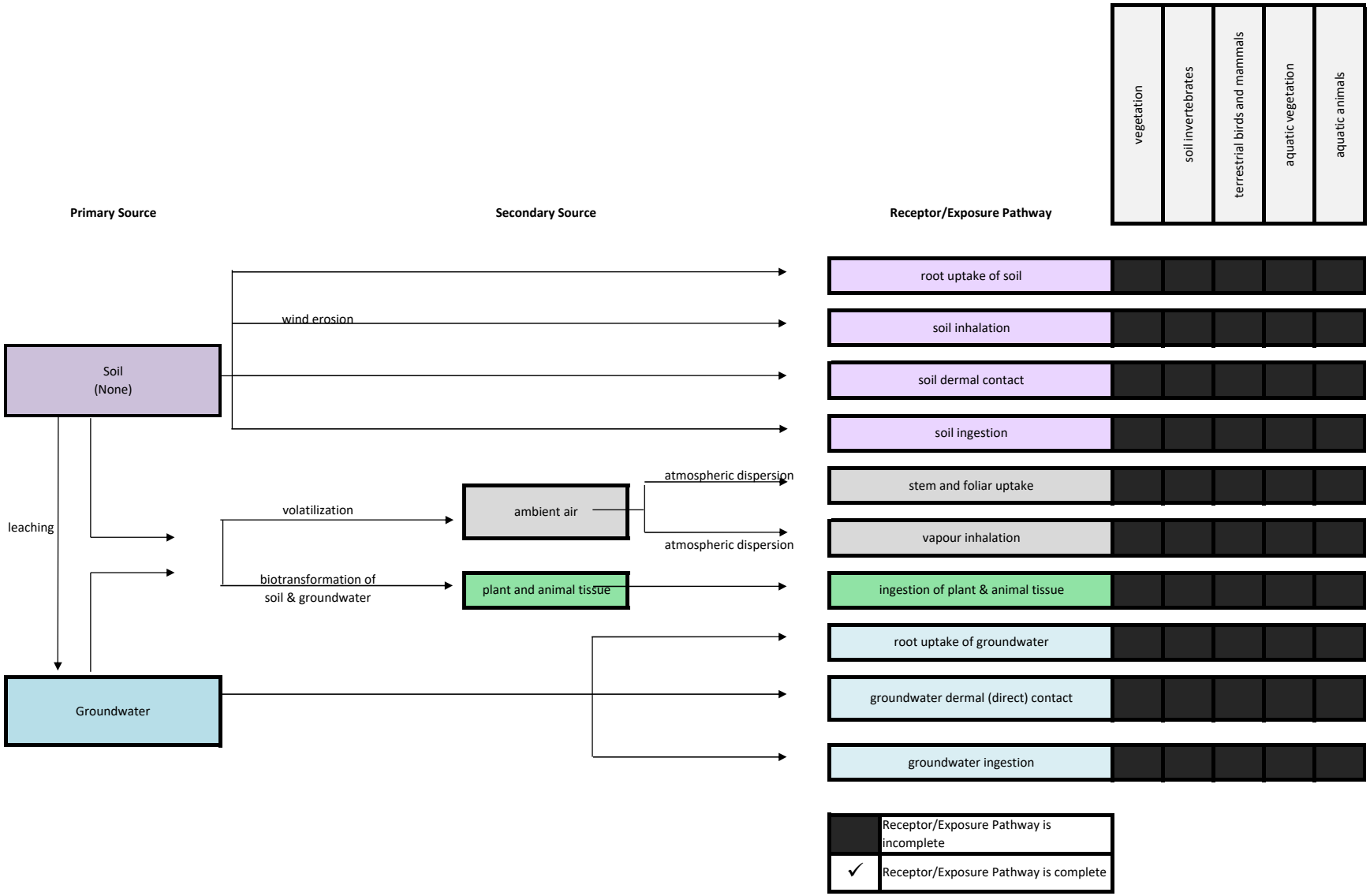


Figure D.2 - Ecological Conceptual On-Site Model



Appendix E – Survey Plan

Phase One/Phase Two/RSC Property Boundary

SURVEYOR'S REAL PROPERTY REPORT

PART 1, PLAN OF

LOT 6
REGISTERED PLAN 20M-507
IN THE
CITY OF BURLINGTON
REGIONAL MUNICIPALITY OF HALTON

SCALE 1:150 METRIC

3 1.5 0 3 6 9 metres

R.A. McLAREN, O.L.S. – 2023

PART 2
PLAN 20R-8287
PIN 07122-0104 (LT)

PIN 07122-0100 (LT)

PIN 07122-0095 (LT)

PIN 07122-0087 (LT)

PIN 07122-0061

PIN 07122-0071

PIN 07122-0072

PART 1 PLAN 20R-12403

PART 3 PLAN 20R-5360

PART 3 PLAN 20R-8287

PART 8, PLAN 20R-302

PART 6 PLAN 20R-9468 SUBJECT TO AN EASEMENT AS IN INSTRUMENT H414356

PART 7 PLAN 20R-9468 SUBJECT TO AN EASEMENT AS IN INSTRUMENT H414356

HALTON STANDARD CONDOMINIUM PLAN 345

BLOCK 25646

HALTON STANDARD CONDOMINIUM PLAN 416

BLOCK 25718

SUBJECT TO EASEMENTS AS SET OUT IN SCHEDULE "A" OF DECLARATION HR 16/930

2 STOREY CONCRETE BLOCK BUILDING No. 1038

2 STOREY CONCRETE BLOCK BUILDING No. 1026

N43°33'25"E (71.029 P1) (Msd) 70.967

N42°44'30"E 72.213 (P1 & Msd)

N44°57'45"W 45.459 (P1 & Msd)

N46°27'40"W 44.456 (P1 & Set)

41.148 (P1 & Msd)

4.593 (P1 & Msd)

22.519 (P1 & Msd)

22.51 (P1 & Set)

COOKE BOULEVARD (BY PLAN 62M-507) PIN 07122-0069 (LT)

SITE BENCH MARK
CUTSTAR
ELEV. = 100.55

BENCHMARK:
MONUMENT 3488

MAPLEHURST SCHOOL, 481 PLAINS ROAD EAST (HIGHWAY 2) 1.92 km NORTHEAST OF WATERDOWN ROAD, TABLET IN THE FRONT OF SOUTHEAST CONCRETE FOUNDATION WALL, 1.5 m SOUTHWEST OF THE MOST EASTERLY OF TWO ENTRANCES, 0.1 m BELOW RED BRICK SIDING No 3488

ELEVATION: 98.754 metres

SURVEYOR'S REAL PROPERTY REPORT (PART 2)

LOT 6, PLAN 20M-507
SUBJECT TO AN EASEMENT AS IN INST. H414356 AS ILLUSTRATED ON THE PLAN.

THIS PLAN DOES NOT CERTIFY COMPLIANCE WITH ZONING BY-LAWS.

THIS PLAN WAS PREPARED FOR KATHLEEN DRYDEN

NOTE:

UNDERGROUND SERVICE AND UTILITY LOCATIONS WERE LOCATED BY URBAN ENGINEERING CONSULTANTS DRAWING No. MC-4 (SHEET 2 OF 2)

UNDERGROUND SERVICE AND UTILITY LOCATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION

INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION

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

NOTE:
DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.9996950

INTEGRATION DATA

OBSERVED REFERENCE POINTS (ORP's): UTM ZONE 17, NAD83 (CSRS) (2010.0). COORDINATES TO URBAN ACCURACY PER SEC. 14(2) OF O.REG. 216/10

POINT ID	NORTHING	EASTING
ORP Ⓐ	4795709.943	593058.422
ORP Ⓑ	4795626.321	593041.671

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

LEGEND:

□	DENOTES	MONUMENT SET
■	-	MONUMENT FOUND
IB	-	IRON BAR
PB	-	PLASTIC BAR
CC	-	CUT CROSS
SIB	-	STANDARD IRON BAR
SSIB	-	SHORT STANDARD IRON BAR
BZA	-	A.T. McLAREN, O.L.S.
OU	-	ORIGIN UNKNOWN
Msd	-	MEASURED
P1	-	HALTON STANDARD CONDOMINIUM PLAN No. 416
CORB	-	CONCRETE CURB
SRW	-	STONE RETAINING WALL
WRW	-	WOOD RETAINING WALL
HV	-	HYDRO VAULT
ELEC	-	ELECTRICAL
FH	-	FIRE HYDRANT
WV	-	WATER VALVE
LSA	-	LANDSCAPED AREA
MF	-	METAL FENCE
DS	-	DOOR SILL
GF	-	GARAGE FLOOR
BOL	-	BOLLARD
CB	-	CATCH BASIN
MH	-	MANHOLE
GM	-	GAS METER
HM	-	HYDRO METER
ø	-	DIAMETER
//	-	NOT TO SCALE

METRIC NOTE:
DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

SURVEYOR'S CERTIFICATE:

I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM
2. THE SURVEY WAS COMPLETED ON THE 8th DAY OF MAY, 2023

10MAY2023
DATE

ROB A. McLAREN, O.L.S.

THIS PLAN OF SURVEY RELATES TO AOLS PLAN SUBMISSION FORM NUMBER 50786

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A.T. McLaren Limited
LEGAL AND ENGINEERING SURVEYS
69 JOHN STREET SOUTH, SUITE 230
HAMILTON, ONTARIO, L8N 2B9
PHONE (905) 527-8559 FAX (905) 527-0032

Drawn	Checked	Crew Chief	Scale	Dwg.No.
JB	RBM	DW	1:150	37342

FILE NAME: 37342 Topo 1026 Cooke Boulevard.dwg LAYOUT: D-Size
LAST SAVED BY: Atmcd DATE: May 10, 2023

Appendix F – Certificates of Analysis

Your Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Your C.O.C. #: n/a

Attention: Eileen Liu

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

Report Date: 2023/07/07
Report #: R7705195
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J2289
Received: 2023/06/29, 13:53

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	4	N/A	2023/07/07	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	4	2023/07/04	2023/07/05	CAM SOP-00408	R153 Ana. Prot. 2011
Free (WAD) Cyanide	4	2023/07/05	2023/07/05	CAM SOP-00457	OMOE E3015 m
Conductivity	4	2023/07/05	2023/07/05	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	1	2023/07/05	2023/07/05	CAM SOP-00436	EPA 3060A/7199 m
Hexavalent Chromium in Soil by IC (1)	3	2023/07/05	2023/07/06	CAM SOP-00436	EPA 3060A/7199 m
Acid Extractable Metals by ICPMS	4	2023/07/04	2023/07/06	CAM SOP-00447	EPA 6020B m
Moisture	5	N/A	2023/07/01	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	4	2023/07/04	2023/07/06	CAM SOP-00318	EPA 8270E
pH CaCl2 EXTRACT	4	2023/07/05	2023/07/05	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	2	N/A	2023/07/05	CAM SOP-00102	EPA 6010C
Sodium Adsorption Ratio (SAR)	2	N/A	2023/07/06	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, MELCCFP, 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.

Your Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Your C.O.C. #: n/a

Attention: Eileen Liu

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

Report Date: 2023/07/07
Report #: R7705195
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J2289
Received: 2023/06/29, 13:53

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



Bureau Veritas
07 Jul 2023 18:15:31

Please direct all questions regarding this Certificate of Analysis to:
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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C3J2289
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			WGH783			WGH783			WGH785		
Sampling Date			2023/06/26 09:30			2023/06/26 09:30			2023/06/27 09:30		
COC Number			n/a			n/a			n/a		
	UNITS	Criteria	BH/MW2-SS1	RDL	QC Batch	BH/MW2-SS1 Lab-Dup	RDL	QC Batch	BH/MW3-SS2	RDL	QC Batch
Calculated Parameters											
Sodium Adsorption Ratio	N/A	5.0	**17**		8761605				**18**		8761605
Inorganics											
Conductivity	mS/cm	0.7	0.51	0.002	8768502				0.48	0.002	8768502
Available (CaCl2) pH	pH	-	8.34		8768863				8.13		8768863
WAD Cyanide (Free)	ug/g	0.051	0.01	0.01	8768398	ND	0.01	8768398	ND	0.01	8768398
Chromium (VI)	ug/g	8	ND	0.18	8768796	ND	0.18	8768796	ND	0.18	8768796
Metals											
Hot Water Ext. Boron (B)	ug/g	1.5	0.16	0.050	8766818				0.071	0.050	8766818
Acid Extractable Antimony (Sb)	ug/g	7.5	ND	0.20	8766852				ND	0.20	8766861
Acid Extractable Arsenic (As)	ug/g	18	1.8	1.0	8766852				2.5	1.0	8766861
Acid Extractable Barium (Ba)	ug/g	390	15	0.50	8766852				14	0.50	8766861
Acid Extractable Beryllium (Be)	ug/g	4	ND	0.20	8766852				ND	0.20	8766861
Acid Extractable Boron (B)	ug/g	120	ND	5.0	8766852				ND	5.0	8766861
Acid Extractable Cadmium (Cd)	ug/g	1.2	0.13	0.10	8766852				ND	0.10	8766861
Acid Extractable Chromium (Cr)	ug/g	160	5.0	1.0	8766852				4.8	1.0	8766861
Acid Extractable Cobalt (Co)	ug/g	22	1.9	0.10	8766852				2.3	0.10	8766861
Acid Extractable Copper (Cu)	ug/g	140	9.6	0.50	8766852				9.1	0.50	8766861
Acid Extractable Lead (Pb)	ug/g	120	22	1.0	8766852				3.1	1.0	8766861
Acid Extractable Molybdenum (Mo)	ug/g	6.9	ND	0.50	8766852				ND	0.50	8766861
Acid Extractable Nickel (Ni)	ug/g	100	4.0	0.50	8766852				4.8	0.50	8766861
Acid Extractable Selenium (Se)	ug/g	2.4	ND	0.50	8766852				ND	0.50	8766861
Acid Extractable Silver (Ag)	ug/g	20	ND	0.20	8766852				ND	0.20	8766861
Acid Extractable Thallium (Tl)	ug/g	1	ND	0.050	8766852				ND	0.050	8766861
Acid Extractable Uranium (U)	ug/g	23	0.31	0.050	8766852				0.43	0.050	8766861
Acid Extractable Vanadium (V)	ug/g	86	10	5.0	8766852				12	5.0	8766861
Acid Extractable Zinc (Zn)	ug/g	340	54	5.0	8766852				11	5.0	8766861

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

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

Bureau Veritas Job #: C3J2289
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			WGH783			WGH783			WGH785		
Sampling Date			2023/06/26 09:30			2023/06/26 09:30			2023/06/27 09:30		
COC Number			n/a			n/a			n/a		
	UNITS	Criteria	BH/MW2-SS1	RDL	QC Batch	BH/MW2-SS1 Lab-Dup	RDL	QC Batch	BH/MW3-SS2	RDL	QC Batch
Acid Extractable Mercury (Hg)	ug/g	0.27	ND	0.050	8766852				ND	0.050	8766861

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

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

Bureau Veritas Job #: C3J2289
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			WGH786			WGH786		WGH787		
Sampling Date			2023/06/27 09:30			2023/06/27 09:30		2023/06/28 09:10		
COC Number			n/a			n/a		n/a		
	UNITS	Criteria	DUP3020	RDL	QC Batch	DUP3020 Lab-Dup	QC Batch	BH/MW5-SS4	RDL	QC Batch
Calculated Parameters										
Sodium Adsorption Ratio	N/A	5.0	**14**		8761605			**16**		8761605
Inorganics										
Conductivity	mS/cm	0.7	0.51	0.002	8768459			**1.2**	0.002	8768459
Available (CaCl2) pH	pH	-	7.75		8768951	7.79	8768951	8.14		8768863
WAD Cyanide (Free)	ug/g	0.051	ND	0.01	8768398			ND	0.01	8768398
Chromium (VI)	ug/g	8	ND	0.18	8768796			0.22	0.18	8768796
Metals										
Hot Water Ext. Boron (B)	ug/g	1.5	0.074	0.050	8766818			0.11	0.050	8766818
Acid Extractable Antimony (Sb)	ug/g	7.5	ND	0.20	8766861			ND	0.20	8766861
Acid Extractable Arsenic (As)	ug/g	18	2.5	1.0	8766861			5.5	1.0	8766861
Acid Extractable Barium (Ba)	ug/g	390	12	0.50	8766861			36	0.50	8766861
Acid Extractable Beryllium (Be)	ug/g	4	ND	0.20	8766861			0.49	0.20	8766861
Acid Extractable Boron (B)	ug/g	120	ND	5.0	8766861			ND	5.0	8766861
Acid Extractable Cadmium (Cd)	ug/g	1.2	ND	0.10	8766861			ND	0.10	8766861
Acid Extractable Chromium (Cr)	ug/g	160	5.9	1.0	8766861			13	1.0	8766861
Acid Extractable Cobalt (Co)	ug/g	22	2.4	0.10	8766861			6.5	0.10	8766861
Acid Extractable Copper (Cu)	ug/g	140	11	0.50	8766861			35	0.50	8766861
Acid Extractable Lead (Pb)	ug/g	120	3.9	1.0	8766861			9.5	1.0	8766861
Acid Extractable Molybdenum (Mo)	ug/g	6.9	ND	0.50	8766861			ND	0.50	8766861
Acid Extractable Nickel (Ni)	ug/g	100	5.1	0.50	8766861			14	0.50	8766861
Acid Extractable Selenium (Se)	ug/g	2.4	ND	0.50	8766861			ND	0.50	8766861
Acid Extractable Silver (Ag)	ug/g	20	ND	0.20	8766861			ND	0.20	8766861
Acid Extractable Thallium (Tl)	ug/g	1	ND	0.050	8766861			0.071	0.050	8766861
Acid Extractable Uranium (U)	ug/g	23	0.28	0.050	8766861			0.48	0.050	8766861
Acid Extractable Vanadium (V)	ug/g	86	13	5.0	8766861			25	5.0	8766861
Acid Extractable Zinc (Zn)	ug/g	340	13	5.0	8766861			32	5.0	8766861

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

Bureau Veritas Job #: C3J2289
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			WGH786			WGH786		WGH787		
Sampling Date			2023/06/27 09:30			2023/06/27 09:30		2023/06/28 09:10		
COC Number			n/a			n/a		n/a		
	UNITS	Criteria	DUP3020	RDL	QC Batch	DUP3020 Lab-Dup	QC Batch	BH/MW5-SS4	RDL	QC Batch
Acid Extractable Mercury (Hg)	ug/g	0.27	ND	0.050	8766861			ND	0.050	8766861

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	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)
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B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

O.REG 153 PAHS (SOIL)

Bureau Veritas ID			WGH783	WGH784		WGH785	WGH787		
Sampling Date			2023/06/26 09:30	2023/06/26 09:30		2023/06/27 09:30	2023/06/28 09:10		
COC Number			n/a	n/a		n/a	n/a		
	UNITS	Criteria	BH/MW2-SS1	DUP2010	RDL	BH/MW3-SS2	BH/MW5-SS4	RDL	QC Batch
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	0.99	ND	ND	0.071	ND	ND	0.0071	8760908
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	7.9	ND	ND	0.050	ND	ND	0.0050	8766155
Acenaphthylene	ug/g	0.15	ND	ND	0.050	ND	ND	0.0050	8766155
Anthracene	ug/g	0.67	ND	ND	0.050	ND	ND	0.0050	8766155
Benzo(a)anthracene	ug/g	0.5	0.074	0.095	0.050	ND	0.0077	0.0050	8766155
Benzo(a)pyrene	ug/g	0.3	0.093	0.11	0.050	ND	0.011	0.0050	8766155
Benzo(b/j)fluoranthene	ug/g	0.78	0.13	0.15	0.050	ND	0.014	0.0050	8766155
Benzo(g,h,i)perylene	ug/g	6.6	0.11	0.12	0.050	ND	0.011	0.0050	8766155
Benzo(k)fluoranthene	ug/g	0.78	ND	0.053	0.050	ND	ND	0.0050	8766155
Chrysene	ug/g	7	0.089	0.11	0.050	ND	0.0079	0.0050	8766155
Dibenzo(a,h)anthracene	ug/g	0.1	ND	ND	0.050	ND	ND	0.0050	8766155
Fluoranthene	ug/g	0.69	0.16	0.23	0.050	ND	0.016	0.0050	8766155
Fluorene	ug/g	62	ND	ND	0.050	ND	ND	0.0050	8766155
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.081	0.097	0.050	ND	0.0092	0.0050	8766155
1-Methylnaphthalene	ug/g	0.99	ND	ND	0.050	ND	ND	0.0050	8766155
2-Methylnaphthalene	ug/g	0.99	ND	ND	0.050	ND	ND	0.0050	8766155
Naphthalene	ug/g	0.6	ND	ND	0.050	ND	ND	0.0050	8766155
Phenanthrene	ug/g	6.2	ND	0.057	0.050	ND	0.0057	0.0050	8766155
Pyrene	ug/g	78	0.13	0.18	0.050	ND	0.013	0.0050	8766155
Surrogate Recovery (%)									
D10-Anthracene	%	-	97	89		122	111		8766155
D14-Terphenyl (FS)	%	-	106	104		107	104		8766155
D8-Acenaphthylene	%	-	105	104		105	103		8766155

No Fill	No Exceedance
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Black	Exceeds both criteria/levels

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QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
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Bureau Veritas Job #: C3J2289
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		WGH783	WGH784	WGH785		WGH786		WGH787		
Sampling Date		2023/06/26 09:30	2023/06/26 09:30	2023/06/27 09:30		2023/06/27 09:30		2023/06/28 09:10		
COC Number		n/a	n/a	n/a		n/a		n/a		
	UNITS	BH/MW2-SS1	DUP2010	BH/MW3-SS2	QC Batch	DUP3020	QC Batch	BH/MW5-SS4	RDL	QC Batch
Inorganics										
Moisture	%	5.8	5.1	8.3	8764948	8.0	8765250	12	1.0	8764948

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

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

Package 1	8.0°C

Sample WGH783 [BH/MW2-SS1] : PAH ANALYSIS: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample WGH784 [DUP2010] : PAH ANALYSIS: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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Bureau Veritas Job #: C3J2289
Report Date: 2023/07/07

QUALITY ASSURANCE REPORT

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8766155	D10-Anthracene	2023/07/06	101	50 - 130	104	50 - 130	124	%		
8766155	D14-Terphenyl (FS)	2023/07/06	102	50 - 130	101	50 - 130	106	%		
8766155	D8-Acenaphthylene	2023/07/06	107	50 - 130	108	50 - 130	106	%		
8764948	Moisture	2023/07/01							2.0	20
8765250	Moisture	2023/07/01							5.1	20
8766155	1-Methylnaphthalene	2023/07/06	106	50 - 130	107	50 - 130	ND, RDL=0.0050	ug/g	12	40
8766155	2-Methylnaphthalene	2023/07/06	99	50 - 130	100	50 - 130	ND, RDL=0.0050	ug/g	23	40
8766155	Acenaphthene	2023/07/06	92	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	38	40
8766155	Acenaphthylene	2023/07/06	116	50 - 130	113	50 - 130	ND, RDL=0.0050	ug/g	28	40
8766155	Anthracene	2023/07/06	108	50 - 130	107	50 - 130	ND, RDL=0.0050	ug/g	46 (1)	40
8766155	Benzo(a)anthracene	2023/07/06	103	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	48 (1)	40
8766155	Benzo(a)pyrene	2023/07/06	92	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	38	40
8766155	Benzo(b/j)fluoranthene	2023/07/06	95	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	35	40
8766155	Benzo(g,h,i)perylene	2023/07/06	97	50 - 130	105	50 - 130	ND, RDL=0.0050	ug/g	29	40
8766155	Benzo(k)fluoranthene	2023/07/06	89	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	36	40
8766155	Chrysene	2023/07/06	104	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	39	40
8766155	Dibenzo(a,h)anthracene	2023/07/06	96	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	37	40
8766155	Fluoranthene	2023/07/06	125	50 - 130	107	50 - 130	ND, RDL=0.0050	ug/g	56 (1)	40
8766155	Fluorene	2023/07/06	115	50 - 130	110	50 - 130	ND, RDL=0.0050	ug/g	35	40
8766155	Indeno(1,2,3-cd)pyrene	2023/07/06	98	50 - 130	105	50 - 130	ND, RDL=0.0050	ug/g	33	40
8766155	Naphthalene	2023/07/06	94	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	31	40
8766155	Phenanthrene	2023/07/06	118	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	48 (1)	40
8766155	Pyrene	2023/07/06	118	50 - 130	107	50 - 130	ND, RDL=0.0050	ug/g	53 (1)	40
8766818	Hot Water Ext. Boron (B)	2023/07/05	117	75 - 125	109	75 - 125	ND, RDL=0.050	ug/g	0.21	40
8766852	Acid Extractable Antimony (Sb)	2023/07/06	99	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	NC	30
8766852	Acid Extractable Arsenic (As)	2023/07/06	101	75 - 125	104	80 - 120	ND, RDL=1.0	ug/g	13	30
8766852	Acid Extractable Barium (Ba)	2023/07/06	NC	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	3.7	30
8766852	Acid Extractable Beryllium (Be)	2023/07/06	106	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	2.2	30
8766852	Acid Extractable Boron (B)	2023/07/06	104	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	3.4	30
8766852	Acid Extractable Cadmium (Cd)	2023/07/06	101	75 - 125	98	80 - 120	ND, RDL=0.10	ug/g	2.7	30
8766852	Acid Extractable Chromium (Cr)	2023/07/06	101	75 - 125	103	80 - 120	ND, RDL=1.0	ug/g	8.5	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8766852	Acid Extractable Cobalt (Co)	2023/07/06	99	75 - 125	98	80 - 120	ND, RDL=0.10	ug/g	7.4	30
8766852	Acid Extractable Copper (Cu)	2023/07/06	100	75 - 125	97	80 - 120	ND, RDL=0.50	ug/g	4.0	30
8766852	Acid Extractable Lead (Pb)	2023/07/06	99	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g	0.71	30
8766852	Acid Extractable Mercury (Hg)	2023/07/06	105	75 - 125	107	80 - 120	ND, RDL=0.050	ug/g	NC	30
8766852	Acid Extractable Molybdenum (Mo)	2023/07/06	107	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	NC	30
8766852	Acid Extractable Nickel (Ni)	2023/07/06	103	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g	4.9	30
8766852	Acid Extractable Selenium (Se)	2023/07/06	107	75 - 125	104	80 - 120	ND, RDL=0.50	ug/g	NC	30
8766852	Acid Extractable Silver (Ag)	2023/07/06	103	75 - 125	96	80 - 120	ND, RDL=0.20	ug/g	NC	30
8766852	Acid Extractable Thallium (Tl)	2023/07/06	100	75 - 125	100	80 - 120	ND, RDL=0.050	ug/g	0.99	30
8766852	Acid Extractable Uranium (U)	2023/07/06	100	75 - 125	98	80 - 120	ND, RDL=0.050	ug/g	5.2	30
8766852	Acid Extractable Vanadium (V)	2023/07/06	100	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	7.2	30
8766852	Acid Extractable Zinc (Zn)	2023/07/06	NC	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	0.36	30
8766861	Acid Extractable Antimony (Sb)	2023/07/06	104	75 - 125	98	80 - 120	ND, RDL=0.20	ug/g	NC	30
8766861	Acid Extractable Arsenic (As)	2023/07/06	112	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	5.0	30
8766861	Acid Extractable Barium (Ba)	2023/07/06	106	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	2.8	30
8766861	Acid Extractable Beryllium (Be)	2023/07/06	109	75 - 125	97	80 - 120	ND, RDL=0.20	ug/g	2.1	30
8766861	Acid Extractable Boron (B)	2023/07/06	105	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	1.2	30
8766861	Acid Extractable Cadmium (Cd)	2023/07/06	109	75 - 125	97	80 - 120	ND, RDL=0.10	ug/g	7.4	30
8766861	Acid Extractable Chromium (Cr)	2023/07/06	113	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	2.0	30
8766861	Acid Extractable Cobalt (Co)	2023/07/06	109	75 - 125	99	80 - 120	ND, RDL=0.10	ug/g	1.5	30
8766861	Acid Extractable Copper (Cu)	2023/07/06	109	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	1.3	30
8766861	Acid Extractable Lead (Pb)	2023/07/06	105	75 - 125	103	80 - 120	ND, RDL=1.0	ug/g	0.037	30
8766861	Acid Extractable Mercury (Hg)	2023/07/06	117	75 - 125	103	80 - 120	ND, RDL=0.050	ug/g	NC	30
8766861	Acid Extractable Molybdenum (Mo)	2023/07/06	110	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	NC	30
8766861	Acid Extractable Nickel (Ni)	2023/07/06	105	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	4.0	30
8766861	Acid Extractable Selenium (Se)	2023/07/06	110	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g	NC	30
8766861	Acid Extractable Silver (Ag)	2023/07/06	109	75 - 125	98	80 - 120	ND, RDL=0.20	ug/g	NC	30
8766861	Acid Extractable Thallium (Tl)	2023/07/06	105	75 - 125	101	80 - 120	ND, RDL=0.050	ug/g	16	30
8766861	Acid Extractable Uranium (U)	2023/07/06	107	75 - 125	100	80 - 120	ND, RDL=0.050	ug/g	3.0	30
8766861	Acid Extractable Vanadium (V)	2023/07/06	112	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	5.4	30
8766861	Acid Extractable Zinc (Zn)	2023/07/06	NC	75 - 125	97	80 - 120	ND, RDL=5.0	ug/g	0.38	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8768398	WAD Cyanide (Free)	2023/07/05	86	75 - 125	92	80 - 120	ND, RDL=0.01	ug/g	NC	35
8768459	Conductivity	2023/07/05			104	90 - 110	ND, RDL=0.002	mS/cm	0.65	10
8768502	Conductivity	2023/07/05			104	90 - 110	ND, RDL=0.002	mS/cm	1.9	10
8768796	Chromium (VI)	2023/07/05	75	70 - 130	86	80 - 120	ND, RDL=0.18	ug/g	NC	35
8768863	Available (CaCl2) pH	2023/07/05			100	97 - 103			0.18	N/A
8768951	Available (CaCl2) pH	2023/07/05			100	97 - 103			0.56	N/A

N/A = Not Applicable

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

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

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

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

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

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

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

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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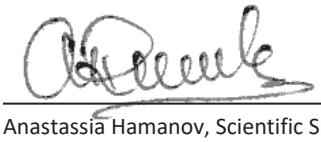
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Bureau Veritas Job #: C3J2289
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

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B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

Exceedance Summary Table – Reg153/04 T3-Soil/Res-C

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH/MW2-SS1	WGH783-01	Sodium Adsorption Ratio	5.0	17		N/A
BH/MW3-SS2	WGH785-01	Sodium Adsorption Ratio	5.0	18		N/A
DUP3020	WGH786-01	Sodium Adsorption Ratio	5.0	14		N/A
BH/MW5-SS4	WGH787-01	Conductivity	0.7	1.2	0.002	mS/cm
BH/MW5-SS4	WGH787-01	Sodium Adsorption Ratio	5.0	16		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.

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Your Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Your C.O.C. #: N/A

Attention: Eileen Liu

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

Report Date: 2023/07/05
Report #: R7701709
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J2290
Received: 2023/06/29, 13:53

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
1,3-Dichloropropene Sum	4	N/A	2023/07/04		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Soil (1)	4	2023/06/30	2023/07/04	CAM SOP-00316	CCME CWS m
Moisture	4	N/A	2023/07/01	CAM SOP-00445	Carter 2nd ed 51.2 m
Volatile Organic Compounds and F1 PHCs	4	N/A	2023/07/03	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, MELCCFP, 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-605A
Site Location: 1026 COOKE BOULEVARD
Your C.O.C. #: N/A

Attention: Eileen Liu

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

Report Date: 2023/07/05
Report #: R7701709
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J2290
Received: 2023/06/29, 13:53

Encryption Key

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

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

Bureau Veritas Job #: C3J2290
Report Date: 2023/07/05

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

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

Bureau Veritas ID			WGH788	WGH789	WGH790	WGH791		
Sampling Date			2023/06/26 09:30	2023/06/27 09:30	2023/06/28 08:10	2023/06/28 08:10		
COC Number			N/A	N/A	N/A	N/A		
	UNITS	Criteria	BH/MW2-SS3	BH/MW3-SS2	BH/MW5-SS2	DUP5020	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	0.05	ND	ND	ND	ND	0.050	8761985
Volatile Organics								
Acetone (2-Propanone)	ug/g	16	ND	ND	ND	ND	0.49	8763882
Benzene	ug/g	0.21	ND	ND	ND	ND	0.0060	8763882
Bromodichloromethane	ug/g	13	ND	ND	ND	ND	0.040	8763882
Bromoform	ug/g	0.27	ND	ND	ND	ND	0.040	8763882
Bromomethane	ug/g	0.05	ND	ND	ND	ND	0.040	8763882
Carbon Tetrachloride	ug/g	0.05	ND	ND	ND	ND	0.040	8763882
Chlorobenzene	ug/g	2.4	ND	ND	ND	ND	0.040	8763882
Chloroform	ug/g	0.05	ND	ND	ND	ND	0.040	8763882
Dibromochloromethane	ug/g	9.4	ND	ND	ND	ND	0.040	8763882
1,2-Dichlorobenzene	ug/g	3.4	ND	ND	ND	ND	0.040	8763882
1,3-Dichlorobenzene	ug/g	4.8	ND	ND	ND	ND	0.040	8763882
1,4-Dichlorobenzene	ug/g	0.083	ND	ND	ND	ND	0.040	8763882
Dichlorodifluoromethane (FREON 12)	ug/g	16	ND	ND	ND	ND	0.040	8763882
1,1-Dichloroethane	ug/g	3.5	ND	ND	ND	ND	0.040	8763882
1,2-Dichloroethane	ug/g	0.05	ND	ND	ND	ND	0.049	8763882
1,1-Dichloroethylene	ug/g	0.05	ND	ND	ND	ND	0.040	8763882
cis-1,2-Dichloroethylene	ug/g	3.4	ND	ND	ND	ND	0.040	8763882
trans-1,2-Dichloroethylene	ug/g	0.084	ND	ND	ND	ND	0.040	8763882
1,2-Dichloropropane	ug/g	0.05	ND	ND	ND	ND	0.040	8763882
cis-1,3-Dichloropropene	ug/g	0.05	ND	ND	ND	ND	0.030	8763882
trans-1,3-Dichloropropene	ug/g	0.05	ND	ND	ND	ND	0.040	8763882
Ethylbenzene	ug/g	2	ND	ND	ND	ND	0.010	8763882
Ethylene Dibromide	ug/g	0.05	ND	ND	ND	ND	0.040	8763882
Hexane	ug/g	2.8	ND	ND	ND	ND	0.040	8763882
Methylene Chloride(Dichloromethane)	ug/g	0.1	ND	ND	ND	ND	0.049	8763882

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

Bureau Veritas Job #: C3J2290
Report Date: 2023/07/05

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

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

Bureau Veritas ID			WGH788	WGH789	WGH790	WGH791		
Sampling Date			2023/06/26 09:30	2023/06/27 09:30	2023/06/28 08:10	2023/06/28 08:10		
COC Number			N/A	N/A	N/A	N/A		
	UNITS	Criteria	BH/MW2-SS3	BH/MW3-SS2	BH/MW5-SS2	DUP5020	RDL	QC Batch
Methyl Ethyl Ketone (2-Butanone)	ug/g	16	ND	ND	ND	ND	0.40	8763882
Methyl Isobutyl Ketone	ug/g	1.7	ND	ND	ND	ND	0.40	8763882
Methyl t-butyl ether (MTBE)	ug/g	0.75	ND	ND	ND	ND	0.040	8763882
Styrene	ug/g	0.7	ND	ND	ND	ND	0.040	8763882
1,1,1,2-Tetrachloroethane	ug/g	0.058	ND	ND	ND	ND	0.040	8763882
1,1,2,2-Tetrachloroethane	ug/g	0.05	ND	ND	ND	ND	0.040	8763882
Tetrachloroethylene	ug/g	0.28	ND	ND	ND	ND	0.040	8763882
Toluene	ug/g	2.3	ND	ND	ND	ND	0.020	8763882
1,1,1-Trichloroethane	ug/g	0.38	ND	ND	ND	ND	0.040	8763882
1,1,2-Trichloroethane	ug/g	0.05	ND	ND	ND	ND	0.040	8763882
Trichloroethylene	ug/g	0.061	ND	ND	ND	ND	0.010	8763882
Trichlorofluoromethane (FREON 11)	ug/g	4	ND	ND	ND	ND	0.040	8763882
Vinyl Chloride	ug/g	0.02	ND	ND	ND	ND	0.019	8763882
p+m-Xylene	ug/g	-	ND	ND	ND	ND	0.020	8763882
o-Xylene	ug/g	-	ND	ND	ND	ND	0.020	8763882
Total Xylenes	ug/g	3.1	ND	ND	ND	ND	0.020	8763882
F1 (C6-C10)	ug/g	55	ND	ND	ND	ND	10	8763882
F1 (C6-C10) - BTEX	ug/g	55	ND	ND	ND	ND	10	8763882
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	98	ND	ND	ND	ND	10	8763759
F3 (C16-C34 Hydrocarbons)	ug/g	300	ND	ND	ND	ND	50	8763759
F4 (C34-C50 Hydrocarbons)	ug/g	2800	ND	ND	ND	ND	50	8763759
Reached Baseline at C50	ug/g	-	Yes	Yes	Yes	Yes		8763759
Surrogate Recovery (%)								
o-Terphenyl	%	-	78	83	81	80		8763759
4-Bromofluorobenzene	%	-	98	97	97	97		8763882
D10-o-Xylene	%	-	94	100	90	92		8763882
D4-1,2-Dichloroethane	%	-	108	114	109	109		8763882

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil
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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C3J2290
Report Date: 2023/07/05

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

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

Bureau Veritas ID			WGH788	WGH789	WGH790	WGH791		
Sampling Date			2023/06/26 09:30	2023/06/27 09:30	2023/06/28 08:10	2023/06/28 08:10		
COC Number			N/A	N/A	N/A	N/A		
	UNITS	Criteria	BH/MW2-SS3	BH/MW3-SS2	BH/MW5-SS2	DUP5020	RDL	QC Batch
D8-Toluene	%	-	93	91	92	93		8763882

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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Bureau Veritas Job #: C3J2290
Report Date: 2023/07/05

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		WGH788	WGH789	WGH790		WGH791		
Sampling Date		2023/06/26 09:30	2023/06/27 09:30	2023/06/28 08:10		2023/06/28 08:10		
COC Number		N/A	N/A	N/A		N/A		
	UNITS	BH/MW2-SS3	BH/MW3-SS2	BH/MW5-SS2	QC Batch	DUP5020	RDL	QC Batch
Inorganics								
Moisture	%	5.9	8.2	9.9	8765145	10	1.0	8765197

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

GENERAL COMMENTS

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

Package 1	8.0°C

Results relate only to the items tested.

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Bureau Veritas Job #: C3J2290
Report Date: 2023/07/05

QUALITY ASSURANCE REPORT

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8763759	o-Terphenyl	2023/07/04	100	60 - 130	104	60 - 130	101	%		
8763882	4-Bromofluorobenzene	2023/07/02	101	60 - 140	100	60 - 140	97	%		
8763882	D10-o-Xylene	2023/07/02	117	60 - 130	89	60 - 130	90	%		
8763882	D4-1,2-Dichloroethane	2023/07/02	104	60 - 140	99	60 - 140	104	%		
8763882	D8-Toluene	2023/07/02	105	60 - 140	105	60 - 140	93	%		
8763759	F2 (C10-C16 Hydrocarbons)	2023/07/04	114	60 - 130	115	80 - 120	ND, RDL=10	ug/g	NC	30
8763759	F3 (C16-C34 Hydrocarbons)	2023/07/04	111	60 - 130	114	80 - 120	ND, RDL=50	ug/g	NC	30
8763759	F4 (C34-C50 Hydrocarbons)	2023/07/04	107	60 - 130	110	80 - 120	ND, RDL=50	ug/g	NC	30
8763882	1,1,1,2-Tetrachloroethane	2023/07/02	106	60 - 140	97	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	1,1,1-Trichloroethane	2023/07/02	105	60 - 140	96	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	1,1,2,2-Tetrachloroethane	2023/07/02	105	60 - 140	95	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	1,1,2-Trichloroethane	2023/07/02	109	60 - 140	98	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	1,1-Dichloroethane	2023/07/02	98	60 - 140	89	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	1,1-Dichloroethylene	2023/07/02	102	60 - 140	92	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	1,2-Dichlorobenzene	2023/07/02	101	60 - 140	95	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	1,2-Dichloroethane	2023/07/02	98	60 - 140	90	60 - 130	ND, RDL=0.049	ug/g	NC	50
8763882	1,2-Dichloropropane	2023/07/02	102	60 - 140	94	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	1,3-Dichlorobenzene	2023/07/02	98	60 - 140	93	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	1,4-Dichlorobenzene	2023/07/02	113	60 - 140	107	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Acetone (2-Propanone)	2023/07/02	107	60 - 140	100	60 - 140	ND, RDL=0.49	ug/g	NC	50
8763882	Benzene	2023/07/02	95	60 - 140	87	60 - 130	ND, RDL=0.0060	ug/g	NC	50
8763882	Bromodichloromethane	2023/07/02	105	60 - 140	96	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Bromoform	2023/07/02	104	60 - 140	94	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Bromomethane	2023/07/02	93	60 - 140	82	60 - 140	ND, RDL=0.040	ug/g	NC	50
8763882	Carbon Tetrachloride	2023/07/02	102	60 - 140	92	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Chlorobenzene	2023/07/02	102	60 - 140	94	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Chloroform	2023/07/02	101	60 - 140	91	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	cis-1,2-Dichloroethylene	2023/07/02	103	60 - 140	94	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	cis-1,3-Dichloropropene	2023/07/02	94	60 - 140	87	60 - 130	ND, RDL=0.030	ug/g	NC	50
8763882	Dibromochloromethane	2023/07/02	103	60 - 140	94	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Dichlorodifluoromethane (FREON 12)	2023/07/02	88	60 - 140	77	60 - 140	ND, RDL=0.040	ug/g	NC	50

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

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8763882	Ethylbenzene	2023/07/02	93	60 - 140	86	60 - 130	ND, RDL=0.010	ug/g	NC	50
8763882	Ethylene Dibromide	2023/07/02	100	60 - 140	91	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	F1 (C6-C10) - BTEX	2023/07/02					ND, RDL=10	ug/g	NC	30
8763882	F1 (C6-C10)	2023/07/02	111	60 - 140	89	80 - 120	ND, RDL=10	ug/g	NC	30
8763882	Hexane	2023/07/02	103	60 - 140	94	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Methyl Ethyl Ketone (2-Butanone)	2023/07/02	98	60 - 140	93	60 - 140	ND, RDL=0.40	ug/g	NC	50
8763882	Methyl Isobutyl Ketone	2023/07/02	87	60 - 140	84	60 - 130	ND, RDL=0.40	ug/g	NC	50
8763882	Methyl t-butyl ether (MTBE)	2023/07/02	94	60 - 140	88	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Methylene Chloride(Dichloromethane)	2023/07/02	100	60 - 140	90	60 - 130	ND, RDL=0.049	ug/g	NC	50
8763882	o-Xylene	2023/07/02	99	60 - 140	91	60 - 130	ND, RDL=0.020	ug/g	NC	50
8763882	p+m-Xylene	2023/07/02	98	60 - 140	91	60 - 130	ND, RDL=0.020	ug/g	NC	50
8763882	Styrene	2023/07/02	110	60 - 140	102	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Tetrachloroethylene	2023/07/02	95	60 - 140	85	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Toluene	2023/07/02	98	60 - 140	90	60 - 130	ND, RDL=0.020	ug/g	NC	50
8763882	Total Xylenes	2023/07/02					ND, RDL=0.020	ug/g	NC	50
8763882	trans-1,2-Dichloroethylene	2023/07/02	98	60 - 140	89	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	trans-1,3-Dichloropropene	2023/07/02	98	60 - 140	90	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Trichloroethylene	2023/07/02	105	60 - 140	95	60 - 130	ND, RDL=0.010	ug/g	2.8	50
8763882	Trichlorofluoromethane (FREON 11)	2023/07/02	100	60 - 140	89	60 - 130	ND, RDL=0.040	ug/g	NC	50
8763882	Vinyl Chloride	2023/07/02	99	60 - 140	87	60 - 130	ND, RDL=0.019	ug/g	NC	50
8765145	Moisture	2023/07/01							0.51	20
8765197	Moisture	2023/07/01							2.0	20

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

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

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

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

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

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

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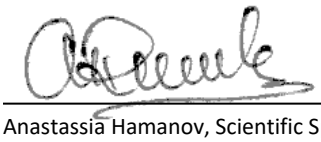
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C3J2290
Report Date: 2023/07/05

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

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

Bureau Veritas Job #: C3J2290
Report Date: 2023/07/05

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

Exceedance Summary Table – Reg153/04 T3-Soil/Res-C

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

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.

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Your Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Your C.O.C. #: n/a

Attention: Eileen Liu

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

Report Date: 2023/07/11
Report #: R7709612
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J4626
Received: 2023/07/04, 08:00

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	2	N/A	2023/07/10	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	2	2023/07/06	2023/07/07	CAM SOP-00408	R153 Ana. Prot. 2011
Free (WAD) Cyanide	2	2023/07/06	2023/07/07	CAM SOP-00457	OMOE E3015 m
Conductivity	2	2023/07/07	2023/07/07	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	2	2023/07/07	2023/07/07	CAM SOP-00436	EPA 3060A/7199 m
Acid Extractable Metals by ICPMS	2	2023/07/06	2023/07/07	CAM SOP-00447	EPA 6020B m
Moisture	2	N/A	2023/07/05	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	2	2023/07/06	2023/07/07	CAM SOP-00318	EPA 8270E
pH CaCl2 EXTRACT	2	2023/07/07	2023/07/07	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	1	N/A	2023/07/10	CAM SOP-00102	EPA 6010C
Sodium Adsorption Ratio (SAR)	1	N/A	2023/07/11	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, MELCCFP, 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.

Your Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Your C.O.C. #: n/a

Attention: Eileen Liu

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

Report Date: 2023/07/11
Report #: R7709612
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J4626
Received: 2023/07/04, 08:00

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

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Bureau Veritas Job #: C3J4626
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			WGV609		WGV610			WGV610		
Sampling Date			2023/06/30 09:30		2023/06/29 08:10			2023/06/29 08:10		
COC Number			n/a		n/a			n/a		
	UNITS	Criteria	BH/MW1-SS1	QC Batch	BH/MW4-SS2	RDL	QC Batch	BH/MW4-SS2 Lab-Dup	RDL	QC Batch
Calculated Parameters										
Sodium Adsorption Ratio	N/A	5.0	**16**	8766495	**46**		8766495			
Inorganics										
Conductivity	mS/cm	0.7	**0.72**	8774183	**2.8**	0.002	8774183	**2.6**	0.002	8774183
Available (CaCl2) pH	pH	-	8.11	8774569	7.64		8774512			
WAD Cyanide (Free)	ug/g	0.051	ND	8771333	ND	0.01	8771333			
Chromium (VI)	ug/g	8	ND	8774599	ND	0.18	8774599			
Metals										
Hot Water Ext. Boron (B)	ug/g	1.5	0.35	8772616	0.33	0.050	8772616			
Acid Extractable Antimony (Sb)	ug/g	7.5	ND	8772138	ND	0.20	8772138			
Acid Extractable Arsenic (As)	ug/g	18	2.8	8772138	3.7	1.0	8772138			
Acid Extractable Barium (Ba)	ug/g	390	19	8772138	38	0.50	8772138			
Acid Extractable Beryllium (Be)	ug/g	4	ND	8772138	0.32	0.20	8772138			
Acid Extractable Boron (B)	ug/g	120	5.5	8772138	ND	5.0	8772138			
Acid Extractable Cadmium (Cd)	ug/g	1.2	0.10	8772138	0.13	0.10	8772138			
Acid Extractable Chromium (Cr)	ug/g	160	7.1	8772138	9.6	1.0	8772138			
Acid Extractable Cobalt (Co)	ug/g	22	3.7	8772138	4.6	0.10	8772138			
Acid Extractable Copper (Cu)	ug/g	140	16	8772138	26	0.50	8772138			
Acid Extractable Lead (Pb)	ug/g	120	9.3	8772138	29	1.0	8772138			
Acid Extractable Molybdenum (Mo)	ug/g	6.9	0.56	8772138	ND	0.50	8772138			
Acid Extractable Nickel (Ni)	ug/g	100	9.7	8772138	9.7	0.50	8772138			
Acid Extractable Selenium (Se)	ug/g	2.4	ND	8772138	ND	0.50	8772138			
Acid Extractable Silver (Ag)	ug/g	20	ND	8772138	ND	0.20	8772138			
Acid Extractable Thallium (Tl)	ug/g	1	ND	8772138	0.061	0.050	8772138			
Acid Extractable Uranium (U)	ug/g	23	0.29	8772138	0.34	0.050	8772138			
Acid Extractable Vanadium (V)	ug/g	86	12	8772138	17	5.0	8772138			
Acid Extractable Zinc (Zn)	ug/g	340	35	8772138	47	5.0	8772138			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

Bureau Veritas Job #: C3J4626
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			WGV609		WGV610			WGV610		
Sampling Date			2023/06/30 09:30		2023/06/29 08:10			2023/06/29 08:10		
COC Number			n/a		n/a			n/a		
	UNITS	Criteria	BH/MW1-SS1	QC Batch	BH/MW4-SS2	RDL	QC Batch	BH/MW4-SS2 Lab-Dup	RDL	QC Batch
Acid Extractable Mercury (Hg)	ug/g	0.27	ND	8772138	ND	0.050	8772138			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C3J4626
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

O.REG 153 PAHS (SOIL)

Bureau Veritas ID			WGV609			WGV609			WGV610		
Sampling Date			2023/06/30 09:30			2023/06/30 09:30			2023/06/29 08:10		
COC Number			n/a			n/a			n/a		
	UNITS	Criteria	BH/MW1-SS1	RDL	QC Batch	BH/MW1-SS1 Lab-Dup	RDL	QC Batch	BH/MW4-SS2	RDL	QC Batch
Calculated Parameters											
Methylnaphthalene, 2-(1-)	ug/g	0.99	ND	0.071	8766494				ND	0.0071	8766494
Polyaromatic Hydrocarbons											
Acenaphthene	ug/g	7.9	ND	0.050	8770974	ND	0.050	8770974	ND	0.0050	8770974
Acenaphthylene	ug/g	0.15	ND	0.050	8770974	ND	0.050	8770974	0.011	0.0050	8770974
Anthracene	ug/g	0.67	ND	0.050	8770974	ND	0.050	8770974	0.012	0.0050	8770974
Benzo(a)anthracene	ug/g	0.5	0.12	0.050	8770974	0.12	0.050	8770974	0.069	0.0050	8770974
Benzo(a)pyrene	ug/g	0.3	0.16	0.050	8770974	0.16	0.050	8770974	0.081	0.0050	8770974
Benzo(b/j)fluoranthene	ug/g	0.78	0.22	0.050	8770974	0.22	0.050	8770974	0.12	0.0050	8770974
Benzo(g,h,i)perylene	ug/g	6.6	0.15	0.050	8770974	0.15	0.050	8770974	0.050	0.0050	8770974
Benzo(k)fluoranthene	ug/g	0.78	0.080	0.050	8770974	0.079	0.050	8770974	0.040	0.0050	8770974
Chrysene	ug/g	7	0.13	0.050	8770974	0.13	0.050	8770974	0.061	0.0050	8770974
Dibenzo(a,h)anthracene	ug/g	0.1	ND	0.050	8770974	ND	0.050	8770974	0.013	0.0050	8770974
Fluoranthene	ug/g	0.69	0.28	0.050	8770974	0.29	0.050	8770974	0.14	0.0050	8770974
Fluorene	ug/g	62	ND	0.050	8770974	ND	0.050	8770974	ND	0.0050	8770974
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.13	0.050	8770974	0.12	0.050	8770974	0.052	0.0050	8770974
1-Methylnaphthalene	ug/g	0.99	ND	0.050	8770974	ND	0.050	8770974	ND	0.0050	8770974
2-Methylnaphthalene	ug/g	0.99	ND	0.050	8770974	ND	0.050	8770974	ND	0.0050	8770974
Naphthalene	ug/g	0.6	ND	0.050	8770974	ND	0.050	8770974	ND	0.0050	8770974
Phenanthrene	ug/g	6.2	0.091	0.050	8770974	0.11	0.050	8770974	0.045	0.0050	8770974
Pyrene	ug/g	78	0.22	0.050	8770974	0.23	0.050	8770974	0.12	0.0050	8770974
Surrogate Recovery (%)											
D10-Anthracene	%	-	108		8770974	105		8770974	97		8770974
D14-Terphenyl (FS)	%	-	95		8770974	97		8770974	101		8770974
D8-Acenaphthylene	%	-	91		8770974	91		8770974	92		8770974

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C3J4626
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		WGV609	WGV610		
Sampling Date		2023/06/30 09:30	2023/06/29 08:10		
COC Number		n/a	n/a		
	UNITS	BH/MW1-SS1	BH/MW4-SS2	RDL	QC Batch
Inorganics					
Moisture	%	5.0	12	1.0	8770462

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

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

Package 1	2.0°C

Sample WGV609 [BH/MW1-SS1] : PAH ANALYSIS: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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

Bureau Veritas Job #: C3J4626
Report Date: 2023/07/11

QUALITY ASSURANCE REPORT

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8770974	D10-Anthracene	2023/07/06	116	50 - 130	97	50 - 130	100	%		
8770974	D14-Terphenyl (FS)	2023/07/06	104	50 - 130	96	50 - 130	100	%		
8770974	D8-Acenaphthylene	2023/07/06	99	50 - 130	93	50 - 130	93	%		
8770462	Moisture	2023/07/05							4.1	20
8770974	1-Methylnaphthalene	2023/07/07	109	50 - 130	100	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8770974	2-Methylnaphthalene	2023/07/07	100	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8770974	Acenaphthene	2023/07/07	111	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8770974	Acenaphthylene	2023/07/07	103	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8770974	Anthracene	2023/07/07	109	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8770974	Benzo(a)anthracene	2023/07/07	NC	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	2.1	40
8770974	Benzo(a)pyrene	2023/07/07	119	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	3.6	40
8770974	Benzo(b/j)fluoranthene	2023/07/07	122	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	0.76	40
8770974	Benzo(g,h,i)perylene	2023/07/07	116	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	5.4	40
8770974	Benzo(k)fluoranthene	2023/07/07	111	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	0.75	40
8770974	Chrysene	2023/07/07	128	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	0.067	40
8770974	Dibenzo(a,h)anthracene	2023/07/07	109	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8770974	Fluoranthene	2023/07/07	NC	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	4.3	40
8770974	Fluorene	2023/07/07	107	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8770974	Indeno(1,2,3-cd)pyrene	2023/07/07	114	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	7.4	40
8770974	Naphthalene	2023/07/07	98	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8770974	Phenanthrene	2023/07/07	NC	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	21	40
8770974	Pyrene	2023/07/07	NC	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	3.1	40
8771333	WAD Cyanide (Free)	2023/07/07	92	75 - 125	91	80 - 120	ND, RDL=0.01	ug/g	NC	35
8772138	Acid Extractable Antimony (Sb)	2023/07/07	94	75 - 125	96	80 - 120	ND, RDL=0.20	ug/g	NC	30
8772138	Acid Extractable Arsenic (As)	2023/07/07	98	75 - 125	95	80 - 120	ND, RDL=1.0	ug/g	7.4	30
8772138	Acid Extractable Barium (Ba)	2023/07/07	NC	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	1.6	30
8772138	Acid Extractable Beryllium (Be)	2023/07/07	97	75 - 125	96	80 - 120	ND, RDL=0.20	ug/g	4.0	30
8772138	Acid Extractable Boron (B)	2023/07/07	97	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	6.6	30
8772138	Acid Extractable Cadmium (Cd)	2023/07/07	97	75 - 125	96	80 - 120	ND, RDL=0.10	ug/g	NC	30
8772138	Acid Extractable Chromium (Cr)	2023/07/07	101	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	4.4	30
8772138	Acid Extractable Cobalt (Co)	2023/07/07	96	75 - 125	96	80 - 120	ND, RDL=0.10	ug/g	0.53	30

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

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8772138	Acid Extractable Copper (Cu)	2023/07/07	98	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	0.61	30
8772138	Acid Extractable Lead (Pb)	2023/07/07	92	75 - 125	98	80 - 120	ND, RDL=1.0	ug/g	0.62	30
8772138	Acid Extractable Mercury (Hg)	2023/07/07	92	75 - 125	94	80 - 120	ND, RDL=0.050	ug/g	NC	30
8772138	Acid Extractable Molybdenum (Mo)	2023/07/07	101	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	NC	30
8772138	Acid Extractable Nickel (Ni)	2023/07/07	97	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	1.0	30
8772138	Acid Extractable Selenium (Se)	2023/07/07	97	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	NC	30
8772138	Acid Extractable Silver (Ag)	2023/07/07	99	75 - 125	96	80 - 120	ND, RDL=0.20	ug/g	NC	30
8772138	Acid Extractable Thallium (Tl)	2023/07/07	93	75 - 125	98	80 - 120	ND, RDL=0.050	ug/g	8.6	30
8772138	Acid Extractable Uranium (U)	2023/07/07	93	75 - 125	94	80 - 120	ND, RDL=0.050	ug/g	4.1	30
8772138	Acid Extractable Vanadium (V)	2023/07/07	99	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	3.0	30
8772138	Acid Extractable Zinc (Zn)	2023/07/07	NC	75 - 125	97	80 - 120	ND, RDL=5.0	ug/g	2.3	30
8772616	Hot Water Ext. Boron (B)	2023/07/07	108	75 - 125	95	75 - 125	ND, RDL=0.050	ug/g	10	40
8774183	Conductivity	2023/07/07			102	90 - 110	ND, RDL=0.002	mS/cm	5.2	10
8774512	Available (CaCl2) pH	2023/07/07			101	97 - 103			0.055	N/A
8774569	Available (CaCl2) pH	2023/07/07			101	97 - 103			0.058	N/A
8774599	Chromium (VI)	2023/07/07	58 (1)	70 - 130	94	80 - 120	ND, RDL=0.18	ug/g	NC	35

N/A = Not Applicable

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

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

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

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

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

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

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

(1) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample. The sample was re-analyzed with the same results

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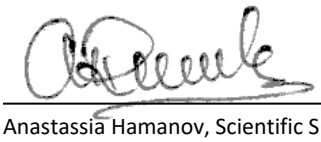
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C3J4626
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

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

Bureau Veritas Job #: C3J4626
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

Exceedance Summary Table – Reg153/04 T3-Soil/Res-C

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH/MW1-SS1	WGV609-01	Conductivity	0.7	0.72	0.002	mS/cm
BH/MW1-SS1	WGV609-01	Sodium Adsorption Ratio	5.0	16		N/A
BH/MW4-SS2	WGV610-01-Lab Dup	Conductivity	0.7	2.6	0.002	mS/cm
BH/MW4-SS2	WGV610-01	Conductivity	0.7	2.8	0.002	mS/cm
BH/MW4-SS2	WGV610-01	Sodium Adsorption Ratio	5.0	46		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.

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Your Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Your C.O.C. #: n/a

Attention: Eileen Liu

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

Report Date: 2023/07/07
Report #: R7704741
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J4630
Received: 2023/07/04, 08:00

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
1,3-Dichloropropene Sum	2	N/A	2023/07/06		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Soil (1)	2	2023/07/05	2023/07/06	CAM SOP-00316	CCME CWS m
Moisture	2	N/A	2023/07/05	CAM SOP-00445	Carter 2nd ed 51.2 m
Volatile Organic Compounds and F1 PHCs	2	N/A	2023/07/05	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, MELCCFP, 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-605A
Site Location: 1026 COOKE BOULEVARD
Your C.O.C. #: n/a

Attention: Eileen Liu

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

Report Date: 2023/07/07
Report #: R7704741
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J4630
Received: 2023/07/04, 08:00

Encryption Key

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

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Bureau Veritas Job #: C3J4630
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

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

Bureau Veritas ID			WGV614	WGV615		
Sampling Date			2023/06/30 09:30	2023/06/29 08:10		
COC Number			n/a	n/a		
	UNITS	Criteria	BH/MW1-SS2	BH/MW4-SS2	RDL	QC Batch
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/g	0.05	ND	ND	0.050	8766501
Volatile Organics						
Acetone (2-Propanone)	ug/g	16	ND	ND	0.49	8768758
Benzene	ug/g	0.21	ND	ND	0.0060	8768758
Bromodichloromethane	ug/g	13	ND	ND	0.040	8768758
Bromoform	ug/g	0.27	ND	ND	0.040	8768758
Bromomethane	ug/g	0.05	ND	ND	0.040	8768758
Carbon Tetrachloride	ug/g	0.05	ND	ND	0.040	8768758
Chlorobenzene	ug/g	2.4	ND	ND	0.040	8768758
Chloroform	ug/g	0.05	ND	ND	0.040	8768758
Dibromochloromethane	ug/g	9.4	ND	ND	0.040	8768758
1,2-Dichlorobenzene	ug/g	3.4	ND	ND	0.040	8768758
1,3-Dichlorobenzene	ug/g	4.8	ND	ND	0.040	8768758
1,4-Dichlorobenzene	ug/g	0.083	ND	ND	0.040	8768758
Dichlorodifluoromethane (FREON 12)	ug/g	16	ND	ND	0.040	8768758
1,1-Dichloroethane	ug/g	3.5	ND	ND	0.040	8768758
1,2-Dichloroethane	ug/g	0.05	ND	ND	0.049	8768758
1,1-Dichloroethylene	ug/g	0.05	ND	ND	0.040	8768758
cis-1,2-Dichloroethylene	ug/g	3.4	ND	ND	0.040	8768758
trans-1,2-Dichloroethylene	ug/g	0.084	ND	ND	0.040	8768758
1,2-Dichloropropane	ug/g	0.05	ND	ND	0.040	8768758
cis-1,3-Dichloropropene	ug/g	0.05	ND	ND	0.030	8768758
trans-1,3-Dichloropropene	ug/g	0.05	ND	ND	0.040	8768758
Ethylbenzene	ug/g	2	ND	ND	0.010	8768758
Ethylene Dibromide	ug/g	0.05	ND	ND	0.040	8768758

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

Bureau Veritas Job #: C3J4630
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

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

Bureau Veritas ID			WGV614	WGV615		
Sampling Date			2023/06/30 09:30	2023/06/29 08:10		
COC Number			n/a	n/a		
	UNITS	Criteria	BH/MW1-SS2	BH/MW4-SS2	RDL	QC Batch
Hexane	ug/g	2.8	ND	ND	0.040	8768758
Methylene Chloride(Dichloromethane)	ug/g	0.1	ND	ND	0.049	8768758
Methyl Ethyl Ketone (2-Butanone)	ug/g	16	ND	ND	0.40	8768758
Methyl Isobutyl Ketone	ug/g	1.7	ND	ND	0.40	8768758
Methyl t-butyl ether (MTBE)	ug/g	0.75	ND	ND	0.040	8768758
Styrene	ug/g	0.7	ND	ND	0.040	8768758
1,1,1,2-Tetrachloroethane	ug/g	0.058	ND	ND	0.040	8768758
1,1,2,2-Tetrachloroethane	ug/g	0.05	ND	ND	0.040	8768758
Tetrachloroethylene	ug/g	0.28	ND	ND	0.040	8768758
Toluene	ug/g	2.3	ND	ND	0.020	8768758
1,1,1-Trichloroethane	ug/g	0.38	ND	ND	0.040	8768758
1,1,2-Trichloroethane	ug/g	0.05	ND	ND	0.040	8768758
Trichloroethylene	ug/g	0.061	ND	ND	0.010	8768758
Trichlorofluoromethane (FREON 11)	ug/g	4	ND	ND	0.040	8768758
Vinyl Chloride	ug/g	0.02	ND	ND	0.019	8768758
p+m-Xylene	ug/g	-	ND	ND	0.020	8768758
o-Xylene	ug/g	-	ND	ND	0.020	8768758
Total Xylenes	ug/g	3.1	ND	ND	0.020	8768758
F1 (C6-C10)	ug/g	55	ND	ND	10	8768758
F1 (C6-C10) - BTEX	ug/g	55	ND	ND	10	8768758
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	98	ND	ND	10	8770066
F3 (C16-C34 Hydrocarbons)	ug/g	300	ND	ND	50	8770066
F4 (C34-C50 Hydrocarbons)	ug/g	2800	150	56	50	8770066
Reached Baseline at C50	ug/g	-	Yes	Yes		8770066

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

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

Bureau Veritas ID			WGV614	WGV615		
Sampling Date			2023/06/30 09:30	2023/06/29 08:10		
COC Number			n/a	n/a		
	UNITS	Criteria	BH/MW1-SS2	BH/MW4-SS2	RDL	QC Batch
Surrogate Recovery (%)						
o-Terphenyl	%	-	81	92		8770066
4-Bromofluorobenzene	%	-	96	97		8768758
D10-o-Xylene	%	-	94	96		8768758
D4-1,2-Dichloroethane	%	-	96	97		8768758
D8-Toluene	%	-	101	99		8768758

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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

Bureau Veritas Job #: C3J4630
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		WGV614	WGV615		
Sampling Date		2023/06/30 09:30	2023/06/29 08:10		
COC Number		n/a	n/a		
	UNITS	BH/MW1-SS2	BH/MW4-SS2	RDL	QC Batch
Inorganics					
Moisture	%	4.6	12	1.0	8769162

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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

GENERAL COMMENTS

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

Package 1	2.0°C

Results relate only to the items tested.

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

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8768758	4-Bromofluorobenzene	2023/07/05	102	60 - 140	100	60 - 140	100	%		
8768758	D10-o-Xylene	2023/07/05	103	60 - 130	115	60 - 130	97	%		
8768758	D4-1,2-Dichloroethane	2023/07/05	96	60 - 140	95	60 - 140	96	%		
8768758	D8-Toluene	2023/07/05	102	60 - 140	103	60 - 140	98	%		
8770066	o-Terphenyl	2023/07/06	76	60 - 130	93	60 - 130	93	%		
8768758	1,1,1,2-Tetrachloroethane	2023/07/05	90	60 - 140	103	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	1,1,1-Trichloroethane	2023/07/05	92	60 - 140	102	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	1,1,2,2-Tetrachloroethane	2023/07/05	88	60 - 140	102	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	1,1,2-Trichloroethane	2023/07/05	91	60 - 140	105	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	1,1-Dichloroethane	2023/07/05	91	60 - 140	102	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	1,1-Dichloroethylene	2023/07/05	94	60 - 140	105	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	1,2-Dichlorobenzene	2023/07/05	88	60 - 140	105	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	1,2-Dichloroethane	2023/07/05	85	60 - 140	96	60 - 130	ND, RDL=0.049	ug/g	NC	50
8768758	1,2-Dichloropropane	2023/07/05	91	60 - 140	103	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	1,3-Dichlorobenzene	2023/07/05	89	60 - 140	108	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	1,4-Dichlorobenzene	2023/07/05	105	60 - 140	126	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Acetone (2-Propanone)	2023/07/05	91	60 - 140	103	60 - 140	ND, RDL=0.49	ug/g	NC	50
8768758	Benzene	2023/07/05	91	60 - 140	103	60 - 130	ND, RDL=0.0060	ug/g	NC	50
8768758	Bromodichloromethane	2023/07/05	88	60 - 140	100	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Bromoform	2023/07/05	82	60 - 140	96	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Bromomethane	2023/07/05	95	60 - 140	108	60 - 140	ND, RDL=0.040	ug/g	NC	50
8768758	Carbon Tetrachloride	2023/07/05	91	60 - 140	102	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Chlorobenzene	2023/07/05	92	60 - 140	107	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Chloroform	2023/07/05	91	60 - 140	102	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	cis-1,2-Dichloroethylene	2023/07/05	95	60 - 140	107	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	cis-1,3-Dichloropropene	2023/07/05	86	60 - 140	99	60 - 130	ND, RDL=0.030	ug/g	NC	50
8768758	Dibromochloromethane	2023/07/05	85	60 - 140	98	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Dichlorodifluoromethane (FREON 12)	2023/07/05	94	60 - 140	107	60 - 140	ND, RDL=0.040	ug/g	NC	50
8768758	Ethylbenzene	2023/07/05	91	60 - 140	105	60 - 130	ND, RDL=0.010	ug/g	NC	50
8768758	Ethylene Dibromide	2023/07/05	86	60 - 140	99	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	F1 (C6-C10) - BTEX	2023/07/05					ND, RDL=10	ug/g	NC	30

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

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8768758	F1 (C6-C10)	2023/07/05	81	60 - 140	86	80 - 120	ND, RDL=10	ug/g	NC	30
8768758	Hexane	2023/07/05	96	60 - 140	108	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Methyl Ethyl Ketone (2-Butanone)	2023/07/05	82	60 - 140	93	60 - 140	ND, RDL=0.40	ug/g	NC	50
8768758	Methyl Isobutyl Ketone	2023/07/05	79	60 - 140	91	60 - 130	ND, RDL=0.40	ug/g	NC	50
8768758	Methyl t-butyl ether (MTBE)	2023/07/05	85	60 - 140	96	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Methylene Chloride(Dichloromethane)	2023/07/05	95	60 - 140	108	60 - 130	ND, RDL=0.049	ug/g	NC	50
8768758	o-Xylene	2023/07/05	79	60 - 140	92	60 - 130	ND, RDL=0.020	ug/g	NC	50
8768758	p+m-Xylene	2023/07/05	91	60 - 140	104	60 - 130	ND, RDL=0.020	ug/g	NC	50
8768758	Styrene	2023/07/05	90	60 - 140	104	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Tetrachloroethylene	2023/07/05	87	60 - 140	100	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Toluene	2023/07/05	93	60 - 140	107	60 - 130	ND, RDL=0.020	ug/g	NC	50
8768758	Total Xylenes	2023/07/05					ND, RDL=0.020	ug/g	NC	50
8768758	trans-1,2-Dichloroethylene	2023/07/05	97	60 - 140	109	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	trans-1,3-Dichloropropene	2023/07/05	89	60 - 140	105	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Trichloroethylene	2023/07/05	98	60 - 140	110	60 - 130	ND, RDL=0.010	ug/g	NC	50
8768758	Trichlorofluoromethane (FREON 11)	2023/07/05	94	60 - 140	105	60 - 130	ND, RDL=0.040	ug/g	NC	50
8768758	Vinyl Chloride	2023/07/05	96	60 - 140	108	60 - 130	ND, RDL=0.019	ug/g	NC	50
8769162	Moisture	2023/07/05							1.3	20
8770066	F2 (C10-C16 Hydrocarbons)	2023/07/06	82	60 - 130	100	80 - 120	ND, RDL=10	ug/g	NC	30
8770066	F3 (C16-C34 Hydrocarbons)	2023/07/06	86	60 - 130	101	80 - 120	ND, RDL=50	ug/g	NC	30
8770066	F4 (C34-C50 Hydrocarbons)	2023/07/06	96	60 - 130	103	80 - 120	ND, RDL=50	ug/g	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).

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

Bureau Veritas Job #: C3J4630
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

VALIDATION SIGNATURE PAGE

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

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

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

Bureau Veritas Job #: C3J4630
Report Date: 2023/07/07

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BOULEVARD
Sampler Initials: CE

Exceedance Summary Table – Reg153/04 T3-Soil/Res-C

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

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.

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Your Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Your C.O.C. #: 942356-02-01

Attention: Travis Van Holst

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

Report Date: 2023/07/11
Report #: R7710383
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J7227
Received: 2023/07/05, 13:31

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	6	N/A	2023/07/10	CAM SOP-00301	EPA 8270D m
Chloride by Automated Colourimetry	3	N/A	2023/07/10	CAM SOP-00463	SM 23 4500-Cl E m
Chloride by Automated Colourimetry	3	N/A	2023/07/11	CAM SOP-00463	SM 23 4500-Cl E m
Chromium (VI) in Water	6	N/A	2023/07/07	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide	6	N/A	2023/07/07	CAM SOP-00457	OMOE E3015 m
Mercury	6	2023/07/10	2023/07/10	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	6	N/A	2023/07/10	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM)	6	2023/07/06	2023/07/08	CAM SOP-00318	EPA 8270E

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, MELCCFP, 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.

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

Your Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Your C.O.C. #: 942356-02-01

Attention: Travis Van Holst

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

Report Date: 2023/07/11
Report #: R7710383
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J7227
Received: 2023/07/05, 13:31

Encryption Key

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

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

Bureau Veritas Job #: C3J7227
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: S

O.REG 153 METALS & INORGANICS PKG (WTR)

Bureau Veritas ID			WHI357			WHI357			WHI358		
Sampling Date			2023/07/05 12:50			2023/07/05 12:50			2023/07/05 12:40		
COC Number			942356-02-01			942356-02-01			942356-02-01		
	UNITS	Criteria	BH/MW 1	RDL	QC Batch	BH/MW 1 Lab-Dup	RDL	QC Batch	BH/MW 2	RDL	QC Batch
Inorganics											
WAD Cyanide (Free)	ug/L	66	ND	1	8775957				ND	1	8775957
Dissolved Chloride (Cl-)	mg/L	2300	220	2.0	8775413				370	4.0	8775184
Metals											
Chromium (VI)	ug/L	140	ND	0.50	8774215	ND	0.50	8774215	ND	0.50	8774215
Mercury (Hg)	ug/L	0.29	ND	0.10	8778277				ND	0.10	8778277
Dissolved Antimony (Sb)	ug/L	20000	ND	0.50	8772136				ND	0.50	8772136
Dissolved Arsenic (As)	ug/L	1900	ND	1.0	8772136				ND	1.0	8772136
Dissolved Barium (Ba)	ug/L	29000	180	2.0	8772136				170	2.0	8772136
Dissolved Beryllium (Be)	ug/L	67	ND	0.40	8772136				ND	0.40	8772136
Dissolved Boron (B)	ug/L	45000	88	10	8772136				190	10	8772136
Dissolved Cadmium (Cd)	ug/L	2.7	ND	0.090	8772136				ND	0.090	8772136
Dissolved Chromium (Cr)	ug/L	810	ND	5.0	8772136				ND	5.0	8772136
Dissolved Cobalt (Co)	ug/L	66	ND	0.50	8772136				ND	0.50	8772136
Dissolved Copper (Cu)	ug/L	87	ND	0.90	8772136				ND	0.90	8772136
Dissolved Lead (Pb)	ug/L	25	ND	0.50	8772136				ND	0.50	8772136
Dissolved Molybdenum (Mo)	ug/L	9200	2.4	0.50	8772136				13	0.50	8772136
Dissolved Nickel (Ni)	ug/L	490	ND	1.0	8772136				1.8	1.0	8772136
Dissolved Selenium (Se)	ug/L	63	ND	2.0	8772136				ND	2.0	8772136
Dissolved Silver (Ag)	ug/L	1.5	ND	0.090	8772136				ND	0.090	8772136
Dissolved Sodium (Na)	ug/L	2300000	150000	100	8772136				230000	100	8772136
Dissolved Thallium (Tl)	ug/L	510	ND	0.050	8772136				ND	0.050	8772136
Dissolved Uranium (U)	ug/L	420	2.1	0.10	8772136				1.7	0.10	8772136
Dissolved Vanadium (V)	ug/L	250	ND	0.50	8772136				ND	0.50	8772136
Dissolved Zinc (Zn)	ug/L	1100	ND	5.0	8772136				6.0	5.0	8772136

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Non- Potable Ground Water - All Types of Property Uses - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

Bureau Veritas Job #: C3J7227
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: S

O.REG 153 METALS & INORGANICS PKG (WTR)

Bureau Veritas ID			WHI359			WHI360			WHI361		
Sampling Date			2023/07/05 12:30			2023/07/05 12:20			2023/07/05 12:10		
COC Number			942356-02-01			942356-02-01			942356-02-01		
	UNITS	Criteria	BH/MW 3	RDL	QC Batch	BH/MW 4	RDL	QC Batch	BH/MW 5	RDL	QC Batch
Inorganics											
WAD Cyanide (Free)	ug/L	66	ND	1	8775957	ND	1	8775957	1	1	8775957
Dissolved Chloride (Cl-)	mg/L	2300	970	20	8775184	740	7.0	8775413	590	5.0	8775184
Metals											
Chromium (VI)	ug/L	140	ND	0.50	8774215	ND	0.50	8774215	ND	0.50	8774215
Mercury (Hg)	ug/L	0.29	ND	0.10	8778277	ND	0.10	8778277	ND	0.10	8778277
Dissolved Antimony (Sb)	ug/L	20000	ND	0.50	8772136	ND	0.50	8772136	ND	0.50	8772136
Dissolved Arsenic (As)	ug/L	1900	ND	1.0	8772136	ND	1.0	8772136	ND	1.0	8772136
Dissolved Barium (Ba)	ug/L	29000	250	2.0	8772136	260	2.0	8772136	290	2.0	8772136
Dissolved Beryllium (Be)	ug/L	67	ND	0.40	8772136	ND	0.40	8772136	ND	0.40	8772136
Dissolved Boron (B)	ug/L	45000	89	10	8772136	90	10	8772136	100	10	8772136
Dissolved Cadmium (Cd)	ug/L	2.7	ND	0.090	8772136	ND	0.090	8772136	ND	0.090	8772136
Dissolved Chromium (Cr)	ug/L	810	ND	5.0	8772136	ND	5.0	8772136	ND	5.0	8772136
Dissolved Cobalt (Co)	ug/L	66	ND	0.50	8772136	0.62	0.50	8772136	1.0	0.50	8772136
Dissolved Copper (Cu)	ug/L	87	2.0	0.90	8772136	ND	0.90	8772136	4.8	0.90	8772136
Dissolved Lead (Pb)	ug/L	25	ND	0.50	8772136	ND	0.50	8772136	ND	0.50	8772136
Dissolved Molybdenum (Mo)	ug/L	9200	1.6	0.50	8772136	3.7	0.50	8772136	3.8	0.50	8772136
Dissolved Nickel (Ni)	ug/L	490	3.3	1.0	8772136	1.8	1.0	8772136	3.1	1.0	8772136
Dissolved Selenium (Se)	ug/L	63	ND	2.0	8772136	ND	2.0	8772136	ND	2.0	8772136
Dissolved Silver (Ag)	ug/L	1.5	ND	0.090	8772136	ND	0.090	8772136	ND	0.090	8772136
Dissolved Sodium (Na)	ug/L	2300000	620000	500	8772136	490000	100	8772136	470000	100	8772136
Dissolved Thallium (Tl)	ug/L	510	ND	0.050	8772136	ND	0.050	8772136	ND	0.050	8772136
Dissolved Uranium (U)	ug/L	420	1.8	0.10	8772136	2.1	0.10	8772136	2.0	0.10	8772136
Dissolved Vanadium (V)	ug/L	250	ND	0.50	8772136	ND	0.50	8772136	ND	0.50	8772136
Dissolved Zinc (Zn)	ug/L	1100	5.2	5.0	8772136	ND	5.0	8772136	7.1	5.0	8772136

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Non- Potable Ground Water - All Types of Property Uses - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

Bureau Veritas Job #: C3J7227
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: S

O.REG 153 METALS & INORGANICS PKG (WTR)

Bureau Veritas ID			WHI362		
Sampling Date			2023/07/05 12:20		
COC Number			942356-02-01		
	UNITS	Criteria	DUP 40	RDL	QC Batch
Inorganics					
WAD Cyanide (Free)	ug/L	66	ND	1	8775957
Dissolved Chloride (Cl-)	mg/L	2300	750	7.0	8776809
Metals					
Chromium (VI)	ug/L	140	ND	0.50	8774215
Mercury (Hg)	ug/L	0.29	ND	0.10	8778277
Dissolved Antimony (Sb)	ug/L	20000	ND	0.50	8772136
Dissolved Arsenic (As)	ug/L	1900	ND	1.0	8772136
Dissolved Barium (Ba)	ug/L	29000	260	2.0	8772136
Dissolved Beryllium (Be)	ug/L	67	ND	0.40	8772136
Dissolved Boron (B)	ug/L	45000	90	10	8772136
Dissolved Cadmium (Cd)	ug/L	2.7	ND	0.090	8772136
Dissolved Chromium (Cr)	ug/L	810	ND	5.0	8772136
Dissolved Cobalt (Co)	ug/L	66	0.64	0.50	8772136
Dissolved Copper (Cu)	ug/L	87	ND	0.90	8772136
Dissolved Lead (Pb)	ug/L	25	ND	0.50	8772136
Dissolved Molybdenum (Mo)	ug/L	9200	3.7	0.50	8772136
Dissolved Nickel (Ni)	ug/L	490	2.1	1.0	8772136
Dissolved Selenium (Se)	ug/L	63	ND	2.0	8772136
Dissolved Silver (Ag)	ug/L	1.5	ND	0.090	8772136
Dissolved Sodium (Na)	ug/L	2300000	490000	100	8772136
Dissolved Thallium (Tl)	ug/L	510	ND	0.050	8772136
Dissolved Uranium (U)	ug/L	420	2.1	0.10	8772136
Dissolved Vanadium (V)	ug/L	250	ND	0.50	8772136

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Non- Potable Ground Water - All Types of Property Uses - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

Bureau Veritas Job #: C3J7227
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: S

O.REG 153 METALS & INORGANICS PKG (WTR)

Bureau Veritas ID			WHI362		
Sampling Date			2023/07/05 12:20		
COC Number			942356-02-01		
	UNITS	Criteria	DUP 40	RDL	QC Batch
Dissolved Zinc (Zn)	ug/L	1100	ND	5.0	8772136

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Non- Potable Ground Water - All Types of Property Uses - Coarse Textured Soil
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Bureau Veritas Job #: C3J7227
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: S

O.REG 153 PAHS (WATER)

Bureau Veritas ID			WHI357	WHI358	WHI359	WHI360	WHI361		
Sampling Date			2023/07/05 12:50	2023/07/05 12:40	2023/07/05 12:30	2023/07/05 12:20	2023/07/05 12:10		
COC Number			942356-02-01	942356-02-01	942356-02-01	942356-02-01	942356-02-01		
	UNITS	Criteria	BH/MW 1	BH/MW 2	BH/MW 3	BH/MW 4	BH/MW 5	RDL	QC Batch
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/L	1800	ND	ND	ND	ND	ND	0.071	8768797
Polyaromatic Hydrocarbons									
Acenaphthene	ug/L	600	ND	ND	ND	ND	ND	0.050	8772144
Acenaphthylene	ug/L	1.8	ND	ND	ND	ND	ND	0.050	8772144
Anthracene	ug/L	2.4	ND	ND	ND	ND	ND	0.050	8772144
Benzo(a)anthracene	ug/L	4.7	ND	ND	ND	ND	ND	0.050	8772144
Benzo(a)pyrene	ug/L	0.81	ND	ND	ND	ND	ND	0.0090	8772144
Benzo(b/j)fluoranthene	ug/L	0.75	ND	ND	ND	ND	ND	0.050	8772144
Benzo(g,h,i)perylene	ug/L	0.2	ND	ND	ND	ND	ND	0.050	8772144
Benzo(k)fluoranthene	ug/L	0.4	ND	ND	ND	ND	ND	0.050	8772144
Chrysene	ug/L	1	ND	ND	ND	ND	ND	0.050	8772144
Dibenzo(a,h)anthracene	ug/L	0.52	ND	ND	ND	ND	ND	0.050	8772144
Fluoranthene	ug/L	130	ND	ND	ND	ND	ND	0.050	8772144
Fluorene	ug/L	400	ND	ND	ND	ND	ND	0.050	8772144
Indeno(1,2,3-cd)pyrene	ug/L	0.2	ND	ND	ND	ND	ND	0.050	8772144
1-Methylnaphthalene	ug/L	1800	ND	ND	ND	ND	ND	0.050	8772144
2-Methylnaphthalene	ug/L	1800	ND	ND	ND	ND	ND	0.050	8772144
Naphthalene	ug/L	1400	ND	ND	ND	ND	ND	0.050	8772144
Phenanthrene	ug/L	580	ND	ND	ND	ND	ND	0.030	8772144
Pyrene	ug/L	68	ND	ND	ND	ND	ND	0.050	8772144
Surrogate Recovery (%)									
D10-Anthracene	%	-	125	118	117	116	116		8772144
D14-Terphenyl (FS)	%	-	121	118	122	122	114		8772144
D8-Acenaphthylene	%	-	99	97	92	93	94		8772144

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Non- Potable Ground Water - All Types of Property Uses - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

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

Bureau Veritas Job #: C3J7227
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: S

O.REG 153 PAHS (WATER)

Bureau Veritas ID			WHI362		
Sampling Date			2023/07/05 12:20		
COC Number			942356-02-01		
	UNITS	Criteria	DUP 40	RDL	QC Batch
Calculated Parameters					
Methylnaphthalene, 2-(1-)	ug/L	1800	ND	0.071	8768797
Polyaromatic Hydrocarbons					
Acenaphthene	ug/L	600	ND	0.050	8772144
Acenaphthylene	ug/L	1.8	ND	0.050	8772144
Anthracene	ug/L	2.4	ND	0.050	8772144
Benzo(a)anthracene	ug/L	4.7	ND	0.050	8772144
Benzo(a)pyrene	ug/L	0.81	ND	0.0090	8772144
Benzo(b/j)fluoranthene	ug/L	0.75	ND	0.050	8772144
Benzo(g,h,i)perylene	ug/L	0.2	ND	0.050	8772144
Benzo(k)fluoranthene	ug/L	0.4	ND	0.050	8772144
Chrysene	ug/L	1	ND	0.050	8772144
Dibenzo(a,h)anthracene	ug/L	0.52	ND	0.050	8772144
Fluoranthene	ug/L	130	ND	0.050	8772144
Fluorene	ug/L	400	ND	0.050	8772144
Indeno(1,2,3-cd)pyrene	ug/L	0.2	ND	0.050	8772144
1-Methylnaphthalene	ug/L	1800	ND	0.050	8772144
2-Methylnaphthalene	ug/L	1800	ND	0.050	8772144
Naphthalene	ug/L	1400	ND	0.050	8772144
Phenanthrene	ug/L	580	ND	0.030	8772144
Pyrene	ug/L	68	ND	0.050	8772144
Surrogate Recovery (%)					
D10-Anthracene	%	-	113		8772144
D14-Terphenyl (FS)	%	-	114		8772144
D8-Acenaphthylene	%	-	92		8772144

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Non- Potable Ground Water - All Types of Property Uses - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

GENERAL COMMENTS

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

Package 1	27.0°C

Results relate only to the items tested.

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

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8772144	D10-Anthracene	2023/07/07	120	50 - 130	109	50 - 130	115	%		
8772144	D14-Terphenyl (FS)	2023/07/07	136 (1)	50 - 130	122	50 - 130	126	%		
8772144	D8-Acenaphthylene	2023/07/07	104	50 - 130	93	50 - 130	99	%		
8772136	Dissolved Antimony (Sb)	2023/07/10	106	80 - 120	101	80 - 120	ND, RDL=0.50	ug/L	NC	20
8772136	Dissolved Arsenic (As)	2023/07/10	104	80 - 120	101	80 - 120	ND, RDL=1.0	ug/L	NC	20
8772136	Dissolved Barium (Ba)	2023/07/10	102	80 - 120	100	80 - 120	ND, RDL=2.0	ug/L	1.4	20
8772136	Dissolved Beryllium (Be)	2023/07/10	100	80 - 120	96	80 - 120	ND, RDL=0.40	ug/L	NC	20
8772136	Dissolved Boron (B)	2023/07/10	98	80 - 120	96	80 - 120	ND, RDL=10	ug/L	1.3	20
8772136	Dissolved Cadmium (Cd)	2023/07/10	102	80 - 120	98	80 - 120	ND, RDL=0.090	ug/L	NC	20
8772136	Dissolved Chromium (Cr)	2023/07/10	101	80 - 120	98	80 - 120	ND, RDL=5.0	ug/L	NC	20
8772136	Dissolved Cobalt (Co)	2023/07/10	101	80 - 120	99	80 - 120	ND, RDL=0.50	ug/L	NC	20
8772136	Dissolved Copper (Cu)	2023/07/10	105	80 - 120	102	80 - 120	ND, RDL=0.90	ug/L	0.80	20
8772136	Dissolved Lead (Pb)	2023/07/10	101	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	NC	20
8772136	Dissolved Molybdenum (Mo)	2023/07/10	108	80 - 120	103	80 - 120	ND, RDL=0.50	ug/L	3.1	20
8772136	Dissolved Nickel (Ni)	2023/07/10	99	80 - 120	98	80 - 120	ND, RDL=1.0	ug/L	NC	20
8772136	Dissolved Selenium (Se)	2023/07/10	103	80 - 120	99	80 - 120	ND, RDL=2.0	ug/L	NC	20
8772136	Dissolved Silver (Ag)	2023/07/10	102	80 - 120	100	80 - 120	ND, RDL=0.090	ug/L	NC	20
8772136	Dissolved Sodium (Na)	2023/07/10	NC	80 - 120	103	80 - 120	ND, RDL=100	ug/L		
8772136	Dissolved Thallium (Tl)	2023/07/10	104	80 - 120	99	80 - 120	ND, RDL=0.050	ug/L	NC	20
8772136	Dissolved Uranium (U)	2023/07/10	103	80 - 120	98	80 - 120	ND, RDL=0.10	ug/L	5.0	20
8772136	Dissolved Vanadium (V)	2023/07/10	104	80 - 120	100	80 - 120	ND, RDL=0.50	ug/L	NC	20
8772136	Dissolved Zinc (Zn)	2023/07/10	100	80 - 120	97	80 - 120	ND, RDL=5.0	ug/L	NC	20
8772144	1-Methylnaphthalene	2023/07/07	119	50 - 130	114	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	2-Methylnaphthalene	2023/07/07	124	50 - 130	115	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Acenaphthene	2023/07/07	120	50 - 130	108	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Acenaphthylene	2023/07/07	126	50 - 130	113	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Anthracene	2023/07/07	120	50 - 130	110	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Benzo(a)anthracene	2023/07/07	119	50 - 130	110	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Benzo(a)pyrene	2023/07/07	116	50 - 130	108	50 - 130	ND, RDL=0.0090	ug/L	NC	30
8772144	Benzo(b/j)fluoranthene	2023/07/07	114	50 - 130	107	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Benzo(g,h,i)perylene	2023/07/07	115	50 - 130	106	50 - 130	ND, RDL=0.050	ug/L	NC	30

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

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8772144	Benzo(k)fluoranthene	2023/07/07	116	50 - 130	107	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Chrysene	2023/07/07	115	50 - 130	106	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Dibenzo(a,h)anthracene	2023/07/07	126	50 - 130	118	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Fluoranthene	2023/07/07	123	50 - 130	108	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Fluorene	2023/07/07	119	50 - 130	109	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Indeno(1,2,3-cd)pyrene	2023/07/07	114	50 - 130	117	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Naphthalene	2023/07/07	143 (2)	50 - 130	133 (2)	50 - 130	ND, RDL=0.050	ug/L	NC	30
8772144	Phenanthrene	2023/07/07	119	50 - 130	108	50 - 130	ND, RDL=0.030	ug/L	NC	30
8772144	Pyrene	2023/07/07	122	50 - 130	110	50 - 130	ND, RDL=0.050	ug/L	NC	30
8774215	Chromium (VI)	2023/07/07	105	80 - 120	105	80 - 120	ND, RDL=0.50	ug/L	NC	20
8775184	Dissolved Chloride (Cl-)	2023/07/10	NC	80 - 120	100	80 - 120	ND, RDL=1.0	mg/L	2.8	20
8775413	Dissolved Chloride (Cl-)	2023/07/11	NC	80 - 120	92	80 - 120	ND, RDL=1.0	mg/L	0.39	20
8775957	WAD Cyanide (Free)	2023/07/07	90	80 - 120	89	80 - 120	ND,RDL=1	ug/L	NC	20
8776809	Dissolved Chloride (Cl-)	2023/07/11	83	80 - 120	92	80 - 120	ND, RDL=1.0	mg/L	NC	20
8778277	Mercury (Hg)	2023/07/10	99	75 - 125	102	80 - 120	ND, RDL=0.10	ug/L	NC	20

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

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

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

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

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

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

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

(1) Surrogate recovery was above the upper control limit due to matrix interference. This may represent a high bias in some results.

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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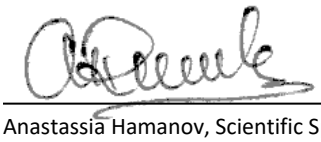
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C3J7227
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: S

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

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

Bureau Veritas Job #: C3J7227
Report Date: 2023/07/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: S

Exceedance Summary Table – Reg153/04 T3-GW-C

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

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.

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Your Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Your C.O.C. #: 942356-03-01

Attention: Travis Van Holst

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

Report Date: 2023/07/10
Report #: R7708592
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J7236
Received: 2023/07/05, 13:31

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
1,3-Dichloropropene Sum	6	N/A	2023/07/10		EPA 8260C m
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2023/07/07	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1)	7	2023/07/08	2023/07/10	CAM SOP-00316	CCME PHC-CWS m
Volatile Organic Compounds and F1 PHCs	6	N/A	2023/07/07	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, MELCCFP, 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-605A
Site Location: 1026 COOKE BLVD
Your C.O.C. #: 942356-03-01

Attention: Travis Van Holst

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

Report Date: 2023/07/10
Report #: R7708592
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3J7236
Received: 2023/07/05, 13:31

Encryption Key

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

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

Bureau Veritas Job #: C3J7236
Report Date: 2023/07/10

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: CD

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

Bureau Veritas ID			WHI403		
Sampling Date			2023/07/05 13:00		
COC Number			942356-03-01		
	UNITS	Criteria	TRIP BLANK	RDL	QC Batch
BTEX & F1 Hydrocarbons					
Benzene	ug/L	44	ND	0.20	8772859
Toluene	ug/L	18000	ND	0.20	8772859
Ethylbenzene	ug/L	2300	ND	0.20	8772859
o-Xylene	ug/L	-	ND	0.20	8772859
p+m-Xylene	ug/L	-	ND	0.40	8772859
Total Xylenes	ug/L	4200	ND	0.40	8772859
F1 (C6-C10)	ug/L	750	ND	25	8772859
F1 (C6-C10) - BTEX	ug/L	750	ND	25	8772859
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	150	ND	100	8776741
F3 (C16-C34 Hydrocarbons)	ug/L	500	ND	200	8776741
F4 (C34-C50 Hydrocarbons)	ug/L	500	ND	200	8776741
Reached Baseline at C50	ug/L	-	Yes		8776741
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	-	108		8772859
4-Bromofluorobenzene	%	-	96		8772859
D10-o-Xylene	%	-	100		8772859
D4-1,2-Dichloroethane	%	-	96		8772859
o-Terphenyl	%	-	103		8776741

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Non- Potable Ground Water - All Types of Property Uses - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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

Bureau Veritas Job #: C3J7236
Report Date: 2023/07/10

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: CD

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

Bureau Veritas ID			WHI397	WHI398	WHI399	WHI400	WHI401		
Sampling Date			2023/07/05 12:50	2023/07/05 12:40	2023/07/05 12:30	2023/07/05 12:20	2023/07/05 12:10		
COC Number			942356-03-01	942356-03-01	942356-03-01	942356-03-01	942356-03-01		
	UNITS	Criteria	BH/MW 1	BH/MW 2	BH/MW 3	BH/MW 4	BH/MW 5	RDL	QC Batch
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/L	5.2	ND	ND	ND	ND	ND	0.50	8768495
Volatile Organics									
Acetone (2-Propanone)	ug/L	130000	ND	ND	ND	ND	ND	10	8772760
Benzene	ug/L	44	ND	ND	ND	ND	ND	0.17	8772760
Bromodichloromethane	ug/L	85000	0.79	ND	ND	ND	ND	0.50	8772760
Bromoform	ug/L	380	ND	ND	ND	ND	ND	1.0	8772760
Bromomethane	ug/L	5.6	ND	ND	ND	ND	ND	0.50	8772760
Carbon Tetrachloride	ug/L	0.79	ND	ND	ND	ND	ND	0.20	8772760
Chlorobenzene	ug/L	630	ND	ND	ND	ND	ND	0.20	8772760
Chloroform	ug/L	2.4	2.3	1.8	0.66	0.88	0.87	0.20	8772760
Dibromochloromethane	ug/L	82000	ND	ND	ND	ND	ND	0.50	8772760
1,2-Dichlorobenzene	ug/L	4600	ND	ND	ND	ND	ND	0.50	8772760
1,3-Dichlorobenzene	ug/L	9600	ND	ND	ND	ND	ND	0.50	8772760
1,4-Dichlorobenzene	ug/L	8	ND	ND	ND	ND	ND	0.50	8772760
Dichlorodifluoromethane (FREON 12)	ug/L	4400	ND	ND	ND	ND	ND	1.0	8772760
1,1-Dichloroethane	ug/L	320	ND	ND	ND	ND	ND	0.20	8772760
1,2-Dichloroethane	ug/L	1.6	ND	ND	ND	ND	ND	0.50	8772760
1,1-Dichloroethylene	ug/L	1.6	ND	ND	ND	ND	ND	0.20	8772760
cis-1,2-Dichloroethylene	ug/L	1.6	ND	ND	ND	ND	ND	0.50	8772760
trans-1,2-Dichloroethylene	ug/L	1.6	ND	ND	ND	ND	ND	0.50	8772760
1,2-Dichloropropane	ug/L	16	ND	ND	ND	ND	ND	0.20	8772760
cis-1,3-Dichloropropene	ug/L	5.2	ND	ND	ND	ND	ND	0.30	8772760
trans-1,3-Dichloropropene	ug/L	5.2	ND	ND	ND	ND	ND	0.40	8772760
Ethylbenzene	ug/L	2300	ND	ND	ND	ND	ND	0.20	8772760
Ethylene Dibromide	ug/L	0.25	ND	ND	ND	ND	ND	0.20	8772760
Hexane	ug/L	51	ND	ND	ND	ND	ND	1.0	8772760
Methylene Chloride(Dichloromethane)	ug/L	610	ND	ND	ND	ND	ND	2.0	8772760

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
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Non- Potable Ground Water - All Types of Property Uses - Coarse Textured Soil
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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C3J7236
Report Date: 2023/07/10

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: CD

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

Bureau Veritas ID			WHI397	WHI398	WHI399	WHI400	WHI401		
Sampling Date			2023/07/05 12:50	2023/07/05 12:40	2023/07/05 12:30	2023/07/05 12:20	2023/07/05 12:10		
COC Number			942356-03-01	942356-03-01	942356-03-01	942356-03-01	942356-03-01		
	UNITS	Criteria	BH/MW 1	BH/MW 2	BH/MW 3	BH/MW 4	BH/MW 5	RDL	QC Batch
Methyl Ethyl Ketone (2-Butanone)	ug/L	470000	ND	ND	ND	ND	ND	10	8772760
Methyl Isobutyl Ketone	ug/L	140000	ND	ND	ND	ND	ND	5.0	8772760
Methyl t-butyl ether (MTBE)	ug/L	190	ND	ND	ND	ND	ND	0.50	8772760
Styrene	ug/L	1300	ND	ND	ND	ND	ND	0.50	8772760
1,1,1,2-Tetrachloroethane	ug/L	3.3	ND	ND	ND	ND	ND	0.50	8772760
1,1,2,2-Tetrachloroethane	ug/L	3.2	ND	ND	ND	ND	ND	0.50	8772760
Tetrachloroethylene	ug/L	1.6	ND	ND	ND	ND	ND	0.20	8772760
Toluene	ug/L	18000	ND	ND	ND	ND	ND	0.20	8772760
1,1,1-Trichloroethane	ug/L	640	ND	ND	ND	ND	ND	0.20	8772760
1,1,2-Trichloroethane	ug/L	4.7	ND	ND	ND	ND	ND	0.50	8772760
Trichloroethylene	ug/L	1.6	ND	ND	ND	ND	ND	0.20	8772760
Trichlorofluoromethane (FREON 11)	ug/L	2500	ND	ND	ND	ND	ND	0.50	8772760
Vinyl Chloride	ug/L	0.5	ND	ND	ND	ND	ND	0.20	8772760
p+m-Xylene	ug/L	-	ND	ND	ND	ND	ND	0.20	8772760
o-Xylene	ug/L	-	ND	ND	ND	ND	ND	0.20	8772760
Total Xylenes	ug/L	4200	ND	ND	ND	ND	ND	0.20	8772760
F1 (C6-C10)	ug/L	750	ND	ND	ND	ND	ND	25	8772760
F1 (C6-C10) - BTEX	ug/L	750	ND	ND	ND	ND	ND	25	8772760
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	150	ND	ND	ND	ND	ND	100	8776741
F3 (C16-C34 Hydrocarbons)	ug/L	500	ND	ND	ND	ND	ND	200	8776741
F4 (C34-C50 Hydrocarbons)	ug/L	500	ND	ND	ND	ND	ND	200	8776741
Reached Baseline at C50	ug/L	-	Yes	Yes	Yes	Yes	Yes		8776741
Surrogate Recovery (%)									
o-Terphenyl	%	-	104	106	104	104	105		8776741
4-Bromofluorobenzene	%	-	95	96	95	95	95		8772760
D4-1,2-Dichloroethane	%	-	96	95	97	96	96		8772760
D8-Toluene	%	-	101	100	99	100	100		8772760

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
Non- Potable Ground Water - All Types of Property Uses - Coarse Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C3J7236
Report Date: 2023/07/10

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: CD

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

Bureau Veritas ID			WHI402		
Sampling Date			2023/07/05 12:20		
COC Number			942356-03-01		
	UNITS	Criteria	DUP 40	RDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/L	5.2	ND	0.50	8768495
Volatile Organics					
Acetone (2-Propanone)	ug/L	130000	ND	10	8772760
Benzene	ug/L	44	ND	0.17	8772760
Bromodichloromethane	ug/L	85000	ND	0.50	8772760
Bromoform	ug/L	380	ND	1.0	8772760
Bromomethane	ug/L	5.6	ND	0.50	8772760
Carbon Tetrachloride	ug/L	0.79	ND	0.20	8772760
Chlorobenzene	ug/L	630	ND	0.20	8772760
Chloroform	ug/L	2.4	0.83	0.20	8772760
Dibromochloromethane	ug/L	82000	ND	0.50	8772760
1,2-Dichlorobenzene	ug/L	4600	ND	0.50	8772760
1,3-Dichlorobenzene	ug/L	9600	ND	0.50	8772760
1,4-Dichlorobenzene	ug/L	8	ND	0.50	8772760
Dichlorodifluoromethane (FREON 12)	ug/L	4400	ND	1.0	8772760
1,1-Dichloroethane	ug/L	320	ND	0.20	8772760
1,2-Dichloroethane	ug/L	1.6	ND	0.50	8772760
1,1-Dichloroethylene	ug/L	1.6	ND	0.20	8772760
cis-1,2-Dichloroethylene	ug/L	1.6	ND	0.50	8772760
trans-1,2-Dichloroethylene	ug/L	1.6	ND	0.50	8772760
1,2-Dichloropropane	ug/L	16	ND	0.20	8772760
cis-1,3-Dichloropropene	ug/L	5.2	ND	0.30	8772760
trans-1,3-Dichloropropene	ug/L	5.2	ND	0.40	8772760
Ethylbenzene	ug/L	2300	ND	0.20	8772760

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
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Bureau Veritas Job #: C3J7236
Report Date: 2023/07/10

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: CD

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

Bureau Veritas ID			WHI402		
Sampling Date			2023/07/05 12:20		
COC Number			942356-03-01		
	UNITS	Criteria	DUP 40	RDL	QC Batch
Ethylene Dibromide	ug/L	0.25	ND	0.20	8772760
Hexane	ug/L	51	ND	1.0	8772760
Methylene Chloride(Dichloromethane)	ug/L	610	ND	2.0	8772760
Methyl Ethyl Ketone (2-Butanone)	ug/L	470000	ND	10	8772760
Methyl Isobutyl Ketone	ug/L	140000	ND	5.0	8772760
Methyl t-butyl ether (MTBE)	ug/L	190	ND	0.50	8772760
Styrene	ug/L	1300	ND	0.50	8772760
1,1,1,2-Tetrachloroethane	ug/L	3.3	ND	0.50	8772760
1,1,2,2-Tetrachloroethane	ug/L	3.2	ND	0.50	8772760
Tetrachloroethylene	ug/L	1.6	ND	0.20	8772760
Toluene	ug/L	18000	ND	0.20	8772760
1,1,1-Trichloroethane	ug/L	640	ND	0.20	8772760
1,1,2-Trichloroethane	ug/L	4.7	ND	0.50	8772760
Trichloroethylene	ug/L	1.6	ND	0.20	8772760
Trichlorofluoromethane (FREON 11)	ug/L	2500	ND	0.50	8772760
Vinyl Chloride	ug/L	0.5	ND	0.20	8772760
p+m-Xylene	ug/L	-	ND	0.20	8772760
o-Xylene	ug/L	-	ND	0.20	8772760
Total Xylenes	ug/L	4200	ND	0.20	8772760
F1 (C6-C10)	ug/L	750	ND	25	8772760
F1 (C6-C10) - BTEX	ug/L	750	ND	25	8772760
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	150	ND	100	8776741
F3 (C16-C34 Hydrocarbons)	ug/L	500	ND	200	8776741
F4 (C34-C50 Hydrocarbons)	ug/L	500	ND	200	8776741

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
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O.REG 153 VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID			WHI402		
Sampling Date			2023/07/05 12:20		
COC Number			942356-03-01		
	UNITS	Criteria	DUP 40	RDL	QC Batch
Reached Baseline at C50	ug/L	-	Yes		8776741
Surrogate Recovery (%)					
o-Terphenyl	%	-	104		8776741
4-Bromofluorobenzene	%	-	95		8772760
D4-1,2-Dichloroethane	%	-	96		8772760
D8-Toluene	%	-	100		8772760

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
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GENERAL COMMENTS

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

Package 1	27.0°C

Results relate only to the items tested.

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Bureau Veritas Job #: C3J7236
Report Date: 2023/07/10

QUALITY ASSURANCE REPORT

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: CD

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8772760	4-Bromofluorobenzene	2023/07/07	96	70 - 130	97	70 - 130	95	%		
8772760	D4-1,2-Dichloroethane	2023/07/07	96	70 - 130	93	70 - 130	94	%		
8772760	D8-Toluene	2023/07/07	104	70 - 130	105	70 - 130	101	%		
8772859	1,4-Difluorobenzene	2023/07/06	104	70 - 130	98	70 - 130	107	%		
8772859	4-Bromofluorobenzene	2023/07/06	96	70 - 130	99	70 - 130	97	%		
8772859	D10-o-Xylene	2023/07/06	96	70 - 130	98	70 - 130	101	%		
8772859	D4-1,2-Dichloroethane	2023/07/06	91	70 - 130	99	70 - 130	95	%		
8776741	o-Terphenyl	2023/07/10	113	60 - 130	107	60 - 130	104	%		
8772760	1,1,1,2-Tetrachloroethane	2023/07/07	98	70 - 130	97	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	1,1,1-Trichloroethane	2023/07/07	92	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	1,1,2,2-Tetrachloroethane	2023/07/07	105	70 - 130	100	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	1,1,2-Trichloroethane	2023/07/07	103	70 - 130	99	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	1,1-Dichloroethane	2023/07/07	99	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	1,1-Dichloroethylene	2023/07/07	98	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	1,2-Dichlorobenzene	2023/07/07	103	70 - 130	101	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	1,2-Dichloroethane	2023/07/07	91	70 - 130	87	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	1,2-Dichloropropane	2023/07/07	102	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	1,3-Dichlorobenzene	2023/07/07	102	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	1,4-Dichlorobenzene	2023/07/07	120	70 - 130	121	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	Acetone (2-Propanone)	2023/07/07	101	60 - 140	96	60 - 140	ND, RDL=10	ug/L	NC	30
8772760	Benzene	2023/07/07	100	70 - 130	98	70 - 130	ND, RDL=0.17	ug/L	NC	30
8772760	Bromodichloromethane	2023/07/07	94	70 - 130	91	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	Bromoform	2023/07/07	91	70 - 130	88	70 - 130	ND, RDL=1.0	ug/L	NC	30
8772760	Bromomethane	2023/07/07	99	60 - 140	97	60 - 140	ND, RDL=0.50	ug/L	NC	30
8772760	Carbon Tetrachloride	2023/07/07	90	70 - 130	91	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	Chlorobenzene	2023/07/07	101	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	Chloroform	2023/07/07	96	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	cis-1,2-Dichloroethylene	2023/07/07	101	70 - 130	99	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	cis-1,3-Dichloropropene	2023/07/07	92	70 - 130	89	70 - 130	ND, RDL=0.30	ug/L	NC	30
8772760	Dibromochloromethane	2023/07/07	93	70 - 130	91	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	Dichlorodifluoromethane (FREON 12)	2023/07/07	93	60 - 140	94	60 - 140	ND, RDL=1.0	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8772760	Ethylbenzene	2023/07/07	99	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	Ethylene Dibromide	2023/07/07	97	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	F1 (C6-C10) - BTEX	2023/07/07					ND, RDL=25	ug/L	NC	30
8772760	F1 (C6-C10)	2023/07/07	95	60 - 140	89	60 - 140	ND, RDL=25	ug/L	NC	30
8772760	Hexane	2023/07/07	104	70 - 130	104	70 - 130	ND, RDL=1.0	ug/L	NC	30
8772760	Methyl Ethyl Ketone (2-Butanone)	2023/07/07	94	60 - 140	88	60 - 140	ND, RDL=10	ug/L	NC	30
8772760	Methyl Isobutyl Ketone	2023/07/07	90	70 - 130	84	70 - 130	ND, RDL=5.0	ug/L	NC	30
8772760	Methyl t-butyl ether (MTBE)	2023/07/07	92	70 - 130	88	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	Methylene Chloride(Dichloromethane)	2023/07/07	105	70 - 130	101	70 - 130	ND, RDL=2.0	ug/L	NC	30
8772760	o-Xylene	2023/07/07	87	70 - 130	88	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	p+m-Xylene	2023/07/07	98	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	Styrene	2023/07/07	99	70 - 130	99	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	Tetrachloroethylene	2023/07/07	91	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	Toluene	2023/07/07	103	70 - 130	104	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	Total Xylenes	2023/07/07					ND, RDL=0.20	ug/L	NC	30
8772760	trans-1,2-Dichloroethylene	2023/07/07	102	70 - 130	101	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	trans-1,3-Dichloropropene	2023/07/07	99	70 - 130	96	70 - 130	ND, RDL=0.40	ug/L	NC	30
8772760	Trichloroethylene	2023/07/07	100	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772760	Trichlorofluoromethane (FREON 11)	2023/07/07	92	70 - 130	92	70 - 130	ND, RDL=0.50	ug/L	NC	30
8772760	Vinyl Chloride	2023/07/07	101	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30
8772859	Benzene	2023/07/06	104	50 - 140	99	50 - 140	ND, RDL=0.20	ug/L	NC	30
8772859	Ethylbenzene	2023/07/06	118	50 - 140	109	50 - 140	ND, RDL=0.20	ug/L	NC	30
8772859	F1 (C6-C10) - BTEX	2023/07/06					ND, RDL=25	ug/L	NC	30
8772859	F1 (C6-C10)	2023/07/06	112	60 - 140	107	60 - 140	ND, RDL=25	ug/L	NC	30
8772859	o-Xylene	2023/07/06	110	50 - 140	105	50 - 140	ND, RDL=0.20	ug/L	NC	30
8772859	p+m-Xylene	2023/07/06	111	50 - 140	101	50 - 140	ND, RDL=0.40	ug/L	NC	30
8772859	Toluene	2023/07/06	100	50 - 140	96	50 - 140	ND, RDL=0.20	ug/L	NC	30
8772859	Total Xylenes	2023/07/06					ND, RDL=0.40	ug/L	NC	30
8776741	F2 (C10-C16 Hydrocarbons)	2023/07/10	125	60 - 130	106	60 - 130	ND, RDL=100	ug/L	NC	30
8776741	F3 (C16-C34 Hydrocarbons)	2023/07/10	119	60 - 130	123	60 - 130	ND, RDL=200	ug/L	85 (1)	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8776741	F4 (C34-C50 Hydrocarbons)	2023/07/10	130	60 - 130	120	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).

(1) Duplicate results exceeded RPD acceptance criteria for flagged analytes. The sample extract was reanalyzed with the same results. This is likely due to sample heterogeneity.

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Bureau Veritas Job #: C3J7236
Report Date: 2023/07/10

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: CD

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Senior Scientific Specialist

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Client Project #: BIGC-ENV-605A
Site Location: 1026 COOKE BLVD
Sampler Initials: CD

Exceedance Summary Table – Reg153/04 T3-GW-C

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

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.

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