



Phase II Environmental Site Assessment - 35 Barker Street, Picton, Ontario

July 22, 2024

Prepared for:
The Corporation of the County of Prince Edward

Cambium Reference: 20355-001

CAMBIUM INC.

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Executive Summary

The Corporation of the County of Prince Edward (Client) retained Cambium Inc. (Cambium) to complete a Phase II Environmental Site Assessment (ESA) at 35 Barker Street in Picton, Ontario (Site). The roughly 4.49-hectare (ha) (1.82 acres) Site is developed with a single-storey school building constructed in approximately 1953, with a partial two-storey addition constructed in 1967 (Site Building).

Cambium completed a Phase I ESA (Cambium Inc., 2024) that identified environmental concerns for the Site related to a former on-site underground fuel oil tank, installed in approximately 1985 and removed in approximately 1995. The absence of tank removal documentation makes the former fuel oil tank a concern for the Site.

A Phase II ESA work program was developed to investigate contaminants of potential concern (COPCs), including volatile organic compounds (VOCs), benzene, toluene, ethylbenzene, and xylenes (BTEX), petroleum hydrocarbon in the fraction ranges F1 to F4 (PHC F1-F4), polycyclic aromatic hydrocarbon (PAHs), metals, hydride-forming metals, and other regulated parameters (ORPs), including mercury (Hg), hexavalent chromium (CrVI), and hot water-soluble boron in soil and groundwater, identified during the Phase I ESA investigation.

The Phase II ESA included two boreholes, both of which were completed as groundwater monitoring wells. Soil and groundwater samples collected from each sampling location were submitted for laboratory analysis of the contaminants of potential concern. Prior to the drilling of the two boreholes, a ground penetrating radar (GPR) scan was completed at the approximate location of the reported fuel oil tank which identified no anomalies resembling an underground storage tank (UST).

The laboratory analysis results indicated that all analysed COPCs in the submitted soil and groundwater samples met the applicable regulatory standards. As such, no further subsurface investigation is warranted at this time.

Cambium recommends the following best management practices for the site:



- When no longer required, all monitoring wells should be abandoned as per the requirements of R.R.O. 1990, Regulation 903 - Wells.
- Soil cuttings and purge water are considered inert and can be disposed on the property, and in accordance with the regional sewer use by-law, and the drums recycled. Alternatively, Cambium can arrange for their removal from the site.
- In the event that the building is to be occupied, Cambium recommends that a potable water sampling program be completed.
- In the event that the building is to be demolished, Cambium recommends that a Designated Substances Survey be completed at the Site prior to demolition activities.



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1.0 Introduction

The Client retained Cambium to complete a Phase II ESA at the Site. The Phase II ESA was completed consistent with the *Canadian Standards Association (CSA) Standard Z769-00* (CSA, 2018), with reference to Ontario Regulation (O.Reg.) 153/04.

1.1 Previous Environmental Investigations

A Phase I ESA (Cambium Inc., 2024) identified environmental concerns for the Site related to a former on-site underground fuel oil tank, installed west of the Site Building in approximately 1985 and removed in approximately 1995. The absence of tank removal documentation makes the former fuel oil tank a concern for the Site.

1.2 Scope of Work

Cambium conducted the following activities as part of the Phase II ESA.

- Review of previous environmental reports to determine COPCs and areas of potential environmental concern.
- Obtained public and private locates for identification of buried services and utilities via Ontario One Call and a private locate company.
- Developed a site-specific Health and Safety Plan (HASP) prior to commencement of the fieldwork.
- Retained a contractor to complete a GPR scan on a portion of the west exterior side of the Site Building to assess for the presence or absence of a UST and/or former excavation area.
- Arranged for a Ministry of the Environment, Conservation and Parks (Ministry) licensed driller to advance two boreholes completed as monitoring wells on the Site.
- Arranged for Paracel Laboratories Ltd. (Paracel), an accredited analytical laboratory, to supply Cambium with appropriate sample containers for the proposed soil and groundwater



testing program and to undertake analytical services in accordance with standard operating protocols (MOE, 2011a).



2.0 Site Description

The Site is located at 35 Barker Street, Picton in the Municipality of Prince Edward, Ontario (Figure 1). The Universal Transverse Mercator (UTM) coordinates for the centre of the Site are Zone 18T, 327961 m east and 4875214 m north.

The roughly 4.49 ha (1.82 acres) Site is developed with a single-storey school building constructed in approximately 1953, with a partial two-storey addition constructed in 1967 (Site Building). The Site is generally flat, and consists of grassed/landscaped areas, formerly used primarily as playground and sports field areas. There is a paved circular driveway and parking area at the front entrance, located at the southwest side of the Site Building, and a paved area located northwest of the Site Building, southeast of Elm Street. The Site is surrounded on most sides by residential properties, while the northwest portion of the Site is adjacent to vacant land.

Surface elevation at the Site decreases toward the east. Regionally, surface elevation decreases to the east toward Picton Harbour, roughly 650 m east of the Site. Based on the location of the nearest water bodies and regional topographic relief, the inferred groundwater flow direction is easterly.

2.1 Applicable Site Condition Standards

The following site characteristics were reviewed to determine the applicable site condition standards (SCS) in the *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* (MOE, 2011b).

- The Site is a vacant, institutional property in Prince Edward County.
- The Site and surrounding properties rely on a municipal water supply that relies on a surface water source (no groundwater). However, the Site is located within an intake protection zone.
- The Site is not within or adjacent to an area of natural significance, and does not include land within 30 m of such an area. Additionally, laboratory results identified soil pH for



surface and subsurface soil were within the acceptable ranges of 5 to 9 and 5 to 11, respectively. As such, the Site is not environmentally sensitive as per Section 41 of O.Reg. 153/04.

- The average overburden thickness was greater than 2 m based on observations made during the subsurface investigation; as such, Section 43.1(a) of O.Reg. 153/04 does not apply.
- The Site is not within 30 m of a water body as defined in O.Reg. 153/04; as such, Section 43.1(b) of O.Reg. 153/04 does not apply.
- Field observations of the native soil indicated that the soil texture at the Site is coarse. Grain size analysis was not completed.

Based on the review of site characteristics, the Table 2 “full depth generic SCS in a potable ground water condition”, residential/parkland/institutional (RPI) property use, and coarse-textured soils are applicable.



3.0 Methodology

The following sections provide a detailed description of the investigations completed and methodologies used to conduct the Phase II ESA. The aspects of environmental concern for the Site were identified based on review of the historical and current operations at the Site and surrounding properties as described in Section 1.0.

The COPCs related to these environmental concerns are PHC F1-F4, VOCs/BTEX, PAHs, metals, hydride-forming metals, and ORPs including Hg, CrVI, and hot water-soluble boron.

3.1 Soil Sampling

Prior to commencing the drilling program, Cambium arranged for underground services to be located and marked for public and private utilities. Know Before You Dig Locates Inc. attended the Site on June 19, 2024 to provide clearance for buried services at the proposed drilling locations and complete a GPR scan along portions of the exterior west side of the Site Building to confirm the presence or absence of USTs and/or former excavation areas. The borehole locations were clear of utilities and no UST-like anomalies were identified in the area scanned.

On June 20, 2024, Strata Drilling Group advanced two boreholes (BH101-24 and BH102-24) to a maximum depth of 5.2 m below ground surface (mbgs) using a track-mounted Massenza MI3 drilling rig equipped with dual-tube sampling equipment.

Boreholes were advanced at the following locations (Figure 2). Borehole logs are provided in Appendix A.

- Borehole BH101-24, southwest of Site Building and west of the boiler room
- Borehole BH102-24, southwest of Site Building and southwest of the boiler room

The boreholes were located in the approximate location of the reported former UST.

Samples were collected consistent with accepted industry practices and regulatory guidance. During the soil investigation program, soil samples were collected in 1.5 m sections. Each sample was handled solely by the field technician using dedicated nitrile gloves to reduce the potential for cross-contamination. Gloves were replaced after collection of each sample.



Samples to be submitted for analysis of VOCs, BTEX, and/or PHC F1 were collected using a pre-calibrated syringe sampler and methanol preserved vials.

Olfactory and visual observations of the soil samples were documented immediately upon extraction for soil characteristics and potential indicators of environmental contamination. The samples, which were placed in plastic sample bags and sealed, were used to determine if volatile and/or organic contaminants were present in the sample headspace. An RKI Eagle 2 portable gas detector was used to screen the soil samples for concentrations of combustible soil vapour (CSV) and organic vapour (OV). The RKI was calibrated to hexane and isobutylene standards. After agitating the sample, the peak concentration was recorded by inserting the RKI probe into the sample bag. Refer to the borehole logs in Appendix A for the measured vapour concentrations.

Soil samples were selected for laboratory analysis based on the soil screening results, visual and olfactory observation, and location of the sample with respect to an environmental concern. Three soil samples were submitted to the laboratory for analysis. The soil analysis results are discussed in Section 4.4.

3.2 Monitoring Well Installation

Boreholes BH101 and BH102 were instrumented with groundwater monitoring wells in accordance with Ontario Regulation 903 - Wells. The monitoring wells were constructed using 51 mm flush-threaded environmental quality PVC well pipe. Each well was constructed with a riser pipe and 3 m section of screen installed to intersect the groundwater table. Silica sand filter-pack was placed in the annular space to approximately 0.3 m above the top of the screen. Bentonite was placed in the remaining annular space to about 6 cm below ground surface to seal the well. The bentonite was hydrated using store bought distilled water. A flush mount protective cover was cemented in place at the ground surface to protect the well from damage. Well construction details are shown on the borehole logs in Appendix A.



3.3 Groundwater Sampling

Following installation, the monitoring wells were developed by purging at least three well volumes, to remove sediment from the well, stabilize and grade the filter pack, improve connectivity between the well and the formation, and restore groundwater that may have been disturbed during the drilling process.

On July 3, 2024, the depth to groundwater was measured in each monitoring well prior to purging or sampling. An interface probe, which can accurately measure the depth to groundwater and the thickness of dense and light non-aqueous phase liquids (DNAPL and LNAPL, respectively) that may be present in the monitoring wells, was used to measure fluid levels. The probe was cleaned between wells with a mixture of Alconox™ soap and water and rinsed with distilled water to reduce the potential for cross-contamination between the monitoring wells.

Each well was purged of a minimum of three well volumes to remove stagnant water from the well prior to sampling. Using the low-flow purging method, water quality parameters were measured using a flow-through cell and allowed to stabilize prior to sample collection, to ensure samples were representative of the surrounding groundwater aquifer. Groundwater samples were collected using a peristaltic pump, with dedicated tubing installed in each of the monitoring wells. The peristaltic pump reduces the amount of sediment entrained in the collected groundwater samples, as agitation of the water column is reduced by lowering the pumping rate and limiting the movement of the tubing in the water column. Groundwater samples submitted for analysis of metals were field filtered.

Field staff wore nitrile sample gloves while collecting the groundwater samples. Gloves were replaced between each sample location. The groundwater analysis results are discussed in Section 4.5.

3.4 Laboratory Testing and Analysis

Soil and groundwater samples were maintained at a temperature less than 10°C. Select samples were transported to Paracel, an accredited analytical laboratory in Ottawa, Ontario,



for analysis of one or more of PHC F1-F4, VOCs, BTEX, PAHs, metals, hydride-forming metals, and ORPs. The analysis results are discussed in Section 4.0. Copies of the original laboratory Certificates of Analysis as received from Paracel are included in Appendix B.



4.0 Results

4.1 Stratigraphy

Subsurface conditions at the Site generally consisted of asphalt and concrete underlain by gravel fill. Sand and silty sand were encountered underlying the gravel fill to a maximum borehole depth of 5.2 mbgs. In addition, an inferred boulder was encountered at approximately 2.1 mbgs in BH102-24. There was no olfactory evidence of hydrocarbon contamination detected in the soil samples recovered from the boreholes.

Bedrock was not encountered to the maximum depth of the investigation.

4.2 Ground Penetrating Radar Scan

Cambium attended the Site on June 19, 2024 along with Know Before You Dig Locates Inc. to complete a GPR scan along a portion of the exterior west side of the Site Building. Based on the results of the GPR scan, no UST-like anomalies were identified in the area scanned. The results of the GPR scan are included in Appendix C.

4.3 Water levels and Flow Direction

Depth to groundwater ranged from 1.88 and 2.36 mbgs on July 3, 2024. Based on the Phase I ESA investigation, the groundwater flow direction is inferred to be in an easterly direction. Local groundwater flow direction may be affected by on-site sub-surface utility conduits and below grade portions of the Site Building and utility conduits beneath nearby streets and neighbouring properties.

4.4 Soil Quality

Details regarding the sample depth/location and COPCs analyzed for each soil sample are included in the table below:



Borehole ID	Depth (m)	COPC analyzed
BH101-24	1.5-2.1	VOCs, PHCs, PAHs, metals, and ORPs
BH102-24	0.9-1.5	BTEX, PHCs, PAHs, and pH
BH102-24	4.5-5.1	BTEX, PHCs, and pH

The submitted soil samples met the Table 2 SCS for the analyzed parameters.

The soil analysis results are presented in Table 1, with grey shading indicating exceedances (if present), and presented on Figure 3.

4.5 Groundwater Quality

No free phase product, hydrocarbon sheen, or unusual odours or discoloration were observed in the purge water or recovered groundwater samples.

Details regarding COPCs analyzed for each groundwater sample are included in the table below:

Borehole ID	COPC analyzed
BH101-24	VOCs, PHCs, and PAHs
BH102-24	VOCs, PHCs, and PAHs

The submitted groundwater samples met the Table 2 SCS.

The groundwater analysis results are presented in Table 2, with grey shading indicating exceedances (if present), and presented on Figure 4.



5.0 Discussion and Conclusions

Conclusions regarding the current environmental conditions at the Site are based solely on the results of the Phase II ESA. The Phase II ESA included a GPR scan in the reported location of a UST, and advancement of two boreholes, which were both completed as groundwater monitoring wells.

Three soil samples and two groundwater samples were submitted for laboratory analysis of one or more of the identified COPCs.

The laboratory analysis results indicated that all analysed COPCs in the submitted soil and groundwater samples met the Table 2 SCS.

Cambium recommends the following work at the site:

- When no longer required, all monitoring wells should be abandoned as per the requirements of R.R.O. 1990, Regulation 903 - Wells.
- Soil cuttings and purge water are considered inert and can be disposed on the property, and in accordance with the regional sewer use by-law, and the drums recycled. Alternatively, Cambium can arrange for their removal from the site.
- In the event that the building is to be occupied, Cambium recommends that a potable water sampling program be completed.
- In the event that the building is to be demolished, Cambium recommends that a Designated Substances Survey be completed at the Site prior to demolition activities.



6.0 Qualifications of the Assessor

This Phase II ESA was completed under the supervision of Mr. Derik Tam, P.Eng., QP_{ESA}. Credentials are presented in Appendix D. Information presented in this report is true and accurate to the best of the assessors' knowledge.

Respectfully submitted,

Cambium Inc.

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7.0 References

- Cambium Inc. (2024). *Phase I Environmental Site Assessment - 35 Barker Street, Picton, Ontario*.
- CSA. (2018). *CSA Standard Z769-00 Phase II Environmental Site Assessment (R2018)*. Canadian Standards Association.
- MOE. (2011a). *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*. Ministry of the Environment. July 1, 2011.
- MOE. (2011b). *Soil, Groundwater, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*. Ministry of the Environment. April 15, 2011.



8.0 Standard Limitations

Limited Warranty

In performing work on behalf of a client, Cambium relies on its client to provide instructions on the scope of its retainer and, on that basis, Cambium determines the precise nature of the work to be performed. Cambium undertakes all work in accordance with applicable accepted industry practices and standards. Unless required under local laws, other than as expressly stated herein, no other warranties or conditions, either expressed or implied, are made regarding the services, work or reports provided.

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A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Cambium's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

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Appended Figures



**PHASE II ENVIRONMENTAL
SITE ASSESSMENT**
THE CORPORATION OF THE
COUNTY OF PRINCE EDWARD
35 Barker Street
Pictou, Ontario

LEGEND

- Highway
- Major Road
- Minor Road
- Watercourse
- Water Area
- Provincial Park
- Wooded Area
- Built Up Area

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SITE LOCATION PLAN

Project No.: 20355-001	Date: July 2024
Scale: 1:100,000	Projection: NAD 1983 UTM Zone 18N
Created by: LD	Checked by: DT
Figure: 1	



**PHASE II ENVIRONMENTAL
SITE ASSESSMENT**
THE CORPORATION OF THE
COUNTY OF PRINCE EDWARD
35 Barker Street
Picton, Ontario

LEGEND

- Monitoring Well
- Inferred Former UST Area
- Site (approximate)

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SITE PLAN

Project No.: 20355-001		Date: July 2024	
Scale: 1:1,250		Projection: NAD 1983 UTM Zone 18N	
Created by: LD	Checked by: DT	Figure: 2	



**PHASE II ENVIRONMENTAL
SITE ASSESSMENT**
THE CORPORATION OF THE
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35 Barker Street
Picton, Ontario

LEGEND

- Monitoring Well
- Meets Table 2 RPI
- Exceeds Table 2 RPI
- Site (approximate)

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SOIL QUALITY

Project No.: 20355-001		Date: July 2024 Rev.:	
Scale: 1:1,250		Projection: NAD 1983 UTM Zone 18N	
Created by: LD	Checked by: DT	Figure: 3	



**PHASE II ENVIRONMENTAL
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THE CORPORATION OF THE
COUNTY OF PRINCE EDWARD
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LEGEND

- Monitoring Well
- Meets Table 2 RPI
- Exceeds Table 2 RPI
- Site (approximate)

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GROUNDWATER QUALITY

Project No.: 20355-001	Date: July 2024
Scale: 1:1,250	Rev.: Rev.
Created by: LD	Checked by: DT
Figure: 4	



Tables

Table 1 - Summary of Soil Quality

	Location Code		BH101-24	BH102-24	
	Field ID		BH101_1.5-2.1	BH102_0.9-1.5	BH102_4.5-5.1
	Depth (m bgs)		1.5 - 2.1	0.9 - 1.5	4.5 - 5.1
	Date		20 Jun 2024	20 Jun 2024	20 Jun 2024
	Unit	EQL	RPI, coarse soil		
BTEX					
Benzene	µg/g	0.02	0.21	<0.02	<0.02
Toluene	µg/g	0.05	2.3	<0.05	<0.05
Ethylbenzene	µg/g	0.05	1.1	<0.05	<0.05
Xylene Total	µg/g	0.05	3.1 ^{#1}	<0.05	<0.05
PHCs					
F1	µg/g	7	55 ^{#2}	<7	<7
F2	µg/g	4	98 ^{#3}	<4	<4
F3	µg/g	8	300 ^{#4}	<8	<8
F4	µg/g	6	2,800	<6	<6
PAH					
Acenaphthene	µg/g	0.02	7.9	<0.02	<0.02
Acenaphthylene	µg/g	0.02	0.15	<0.02	<0.02
Anthracene	µg/g	0.02	0.67	<0.02	<0.02
Benzo(a)anthracene	µg/g	0.02	0.5	<0.02	<0.02
Benzo(a)pyrene	µg/g	0.02	0.3	<0.02	<0.02
Benzo(g,h,i)perylene	µg/g	0.02	6.6	<0.02	<0.02
Benzo(k)fluoranthene	µg/g	0.02	0.78	<0.02	<0.02
Benzo(b)fluoranthene	µg/g	0.02	0.78 ^{#5}	<0.02	<0.02
Chrysene	µg/g	0.02	7	<0.02	<0.02
Dibenz(a,h)anthracene	µg/g	0.02	0.1	<0.02	<0.02
Fluoranthene	µg/g	0.02	0.69	<0.02	<0.02
Fluorene	µg/g	0.02	62	<0.02	<0.02
Indeno(1,2,3-c,d)pyrene	µg/g	0.02	0.38	<0.02	<0.02
Methylnaphthalene 1 & 2	µg/g	0.04	0.99 ^{#6}	<0.04	<0.04
Naphthalene	µg/g	0.01	0.6	<0.01	<0.01
Phenanthrene	µg/g	0.02	6.2	<0.02	<0.02
Pyrene	µg/g	0.02	78	<0.02	<0.02
VOCs					
Acetone	µg/g	0.5	16	<0.50	-
Bromomethane	µg/g	0.05	0.05	<0.05	-
Bromoform	µg/g	0.05	0.27	<0.05	-
Bromodichloromethane	µg/g	0.05	1.5	<0.05	-
Carbon tetrachloride	µg/g	0.05	0.05	<0.05	-
Chlorobenzene	µg/g	0.05	2.4	<0.05	-
Chloroform	µg/g	0.05	0.05	<0.05	-
Dibromoethane, 1,2-	µg/g	0.05	0.05	<0.05	-
Dichlorobenzene, 1,2-	µg/g	0.05	1.2	<0.05	-
Dichlorobenzene, 1,3-	µg/g	0.05	4.8	<0.05	-
Dichlorobenzene, 1,4-	µg/g	0.05	0.083	<0.05	-
Dichlorodifluoromethane	µg/g	0.05	16	<0.05	-
Dichloroethane, 1,1-	µg/g	0.05	0.47	<0.05	-
Dichloroethane, 1,2-	µg/g	0.05	0.05	<0.05	-
Dichloroethylene, 1,1-	µg/g	0.05	0.05	<0.05	-
Dichloroethylene, 1,2-trans-	µg/g	0.05	0.084	<0.05	-
Dichloroethylene, 1,2-cis-	µg/g	0.05	1.9	<0.05	-
Dichloromethane	µg/g	0.05	0.1	<0.05	-
Dichloropropane, 1,2-	µg/g	0.05	0.05	<0.05	-
Dichloropropene, 1,3- cis & trans	µg/g	0.05	0.05 ^{#7}	<0.05	-
Dibromochloromethane	µg/g	0.05	2.3	<0.05	-
Hexane	µg/g	0.05	2.8	<0.05	-
Methyl Ethyl Ketone	µg/g	0.5	16	<0.50	-
Methyl Iso-Butyl Ketone	µg/g	0.5	1.7	<0.50	-
MTBE	µg/g	0.05	0.75	<0.05	-
Styrene	µg/g	0.05	0.7	<0.05	-
Tetrachloroethylene	µg/g	0.05	0.28	<0.05	-
Tetrachloroethane, 1,1,1,2-	µg/g	0.05	0.058	<0.05	-
Tetrachloroethane, 1,1,2,2-	µg/g	0.05	0.05	<0.05	-
Trichloroethane, 1,1,1-	µg/g	0.05	0.38	<0.05	-
Trichloroethane, 1,1,2-	µg/g	0.05	0.05	<0.05	-
Trichloroethylene	µg/g	0.05	0.061	<0.05	-
Trichlorofluoromethane	µg/g	0.05	4	<0.05	-
Vinyl chloride	µg/g	0.02	0.02	<0.02	-
Metals					
Antimony	µg/g	1	7.5	<1.0	-
Arsenic	µg/g	1	18	1.6	-
Barium	µg/g	1	390	34.6	-
Beryllium	µg/g	0.5	4	<0.5	-
Boron	µg/g	5	120 ^{#8}	5.4	-
Cadmium	µg/g	0.5	1.2	<0.5	-
Chromium (III+VI)	µg/g	5	160	11.0	-
Cobalt	µg/g	1	22	3.9	-
Copper	µg/g	5	140	7.1	-
Lead	µg/g	1	120	2.4	-
Molybdenum	µg/g	1	6.9	<1.0	-
Nickel	µg/g	5	100	6.0	-
Selenium	µg/g	1	2.4	<1.0	-
Silver	µg/g	0.3	20	<0.3	-
Thallium	µg/g	1	1	<1.0	-
Uranium	µg/g	1	23	<1.0	-
Vanadium	µg/g	10	86	20.8	-
Zinc	µg/g	20	340	<20.0	-
ORPs					
Boron (hot water soluble)	µg/g	0.5	1.5 ^{#9}	<0.5	-
Chromium (hexavalent)	µg/g	0.2	8	<0.2	-
Mercury	µg/g	0.1	0.27	<0.1	-
pH (Lab)	-	0.05	5-9	-	7.55
					7.46

Comments

#1 Standard is applicable to total xylenes; m & p-xylenes and o-xylenes should be summed for comparison.

#2 Standard is applicable to PHC in the F1 range minus BTEX.

#3 Standard is applicable to PHC F2 minus naphthalene. If naphthalene is not analyzed, the standard is applied to F2.

#4 Standard is applicable to PHC F3 minus PAHs (other than naphthalene). If PAHs have not been measured, the standard is applied to F3.

#5 Standard is for benzo(b)fluoranthene; however, the laboratory can not distinguish between benzo(b)fluoranthene and benzo(k)fluoranthene.

#6 Standard is applicable to Methylnaphthalene, 1- and Methylnaphthalene, 2-. If both are detected, the sum of the two must not exceed the star

#7 Standard is applicable to 1,3-Dichloropropene. Individual isomers (cis + trans) should be added for comparison.

#8 Total Boron standard is for sub-surface soil (>1.5 m).

#9 HWS Boron standard is for surface soil (<1.5 m).

Notes

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



Table 2 - Summary of Groundwater Quality

		Location Code		Field ID		Date	
		BH101-24		BH102-24		03 Jul 2024	
		BH101-24		BH102-24		03 Jul 2024	
	Unit	EQL	coarse soil				
BTEX							
Benzene	µg/L	0.5	5	<0.5	<0.5		
Toluene	µg/L	0.5	24	<0.5	<0.5		
Ethylbenzene	µg/L	0.5	2.4	<0.5	<0.5		
Xylene Total	µg/L	0.5	300 ^{#1}	<0.5	<0.5		
PHCs							
F1	µg/L	25	750 ^{#2}	<25	<25		
F2	µg/L	100	150 ^{#3}	<100	<100		
F3	µg/L	100	500 ^{#4}	<100	<100		
F4	µg/L	100	500	<100	<100		
PAHs							
Acenaphthene	µg/L	0.05	4.1	<0.05	<0.05		
Acenaphthylene	µg/L	0.05	1	<0.05	<0.05		
Anthracene	µg/L	0.01	2.4	<0.01	<0.01		
Benz(a)anthracene	µg/L	0.01	1	<0.01	<0.01		
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01		
Benzo(g,h,i)perylene	µg/L	0.05	0.2	<0.05	<0.05		
Benzo(k)fluoranthene	µg/L	0.05	0.1	<0.05	<0.05		
Benzo(b)fluoranthene	µg/L	0.05	0.1 ^{#5}	<0.05	<0.05		
Chrysene	µg/L	0.05	0.1	<0.05	<0.05		
Dibenz(a,h)anthracene	µg/L	0.05	0.2	<0.05	<0.05		
Fluoranthene	µg/L	0.01	0.41	<0.01	<0.01		
Fluorene	µg/L	0.05	120	<0.05	<0.05		
Indeno(1,2,3-c,d)pyrene	µg/L	0.05	0.2	<0.05	<0.05		
Methylnaphthalene 1 & 2	µg/L	0.1	3.2 ^{#6}	<0.10	<0.10		
Naphthalene	µg/L	0.05	11	<0.05	<0.05		
Phenanthrene	µg/L	0.05	1	<0.05	<0.05		
Pyrene	µg/L	0.01	4.1	<0.01	<0.01		
VOCs							
Acetone	µg/L	5	2,700	<5.0	<5.0		
Bromomethane	µg/L	0.5	0.89	<0.5	<0.5		
Bromoform	µg/L	0.5	25	<0.5	<0.5		
Bromodichloromethane	µg/L	0.5	16	<0.5	<0.5		
Carbon tetrachloride	µg/L	0.2	0.79	<0.2	<0.2		
Chlorobenzene	µg/L	0.5	30	<0.5	<0.5		
Chloroform	µg/L	0.5	2.4	<0.5	0.8		
Dibromoethane, 1,2-	µg/L	0.2	0.2	<0.2	<0.2		
Dichlorobenzene, 1,2-	µg/L	0.5	3	<0.5	<0.5		
Dichlorobenzene, 1,3-	µg/L	0.5	59	<0.5	<0.5		
Dichlorobenzene, 1,4-	µg/L	0.5	1	<0.5	<0.5		
Dichlorodifluoromethane	µg/L	1	590	<1.0	<1.0		
Dichloroethane, 1,1-	µg/L	0.5	5	<0.5	<0.5		
Dichloroethane, 1,2-	µg/L	0.5	1.6	<0.5	<0.5		
Dichloroethylene, 1,1-	µg/L	0.5	1.6	<0.5	<0.5		
Dichloroethylene, 1,2-trans-	µg/L	0.5	1.6	<0.5	<0.5		
Dichloroethylene, 1,2-cis-	µg/L	0.5	1.6	<0.5	<0.5		
Dichloromethane	µg/L	5	50	<5.0	<5.0		
Dichloropropane, 1,2-	µg/L	0.5	5	<0.5	<0.5		
Dichloropropene, 1,3- cis & trans	µg/L	0.5	0.5	<0.5	<0.5		
Dibromochloromethane	µg/L	0.5	25	<0.5	<0.5		
Hexane	µg/L	1	51	<1.0	<1.0		
Methyl Ethyl Ketone	µg/L	5	1,800	<5.0	<5.0		
Methyl Iso-Butyl Ketone	µg/L	5	640	<5.0	<5.0		
MTBE	µg/L	2	15	<2.0	<2.0		
Styrene	µg/L	0.5	5.4	<0.5	<0.5		
Tetrachloroethylene	µg/L	0.5	1.6	<0.5	<0.5		
Tetrachloroethane, 1,1,1,2-	µg/L	0.5	1.1	<0.5	<0.5		
Tetrachloroethane, 1,1,2,2-	µg/L	0.5	1	<0.5	<0.5		
Trichloroethane, 1,1,1-	µg/L	0.5	200	<0.5	<0.5		
Trichloroethane, 1,1,2-	µg/L	0.5	4.7	<0.5	<0.5		
Trichloroethylene	µg/L	0.5	1.6	<0.5	<0.5		
Trichlorofluoromethane	µg/L	1	150	<1.0	<1.0		
Vinyl chloride	µg/L	0.5	0.5	<0.5	<0.5		

Comments

- #1 Standard is applicable to total xylenes; m & p-xylenes and o-xylenes should be summed for comparison.
 #2 Standard is applicable to PHC in the F1 range minus BTEX.
 #3 Standard is applicable to PHC F2 minus naphthalene. If naphthalene is not analyzed, the standard is applied to F2.
 #4 Standard is applicable to PHC F3 minus PAHs (other than naphthalene). If PAHs have not been measured, the standard is applied to F3.
 #5 Standard is for benzo(b)fluoranthene; however, the laboratory can not distinguish between benzo(b)fluoranthene and benzo(j)fluoranthene.
 #6 Standard is applicable to Methylnaphthalene, 1- and Methylnaphthalene, 2-. If both are detected, the sum of the two must not exceed the standard.

Notes

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



Appendix A
Borehole Logs



Client: Prince Edward County
Contractor: Strata Drilling Group
Project No.: 20355-001
Location: 35 Barker Street, Picton

Project Name: 35 Barker Street, Picton
Method: M13 Massenza Track DT
Elevation: 0
UTM: 18T **N:** 4875188 **E:** 327937

Log of Borehole: BH101
Page: 1 of 1
Date Completed: 06/20/2024

SUBSURFACE PROFILE					SAMPLE												Well Installation	Log Notes		
Elevation (m)	Depth	Lithology	Description	Elevation Depth	Number	Type	CSV (ppm)	OV (ppm)	% Recovery	SPT (N)/DCPT	Atterberg Limits (%)			Shear Strength Cu, kPa						
											LL	PL	PI	nat V. rem V. σ_v'						
											25	50	75	20	40	60	80			
											% Moisture			SPT (N) / DCPT						
											25	50	75	20	40	60	80			
0	0		ASPHALT:	-0.05																
			CONCRETE:	-0.05																
			FILL: Grey-brown gravel, moist	-0.05 -0.13																
-0.5	0.5		(SW) SAND: Sand, trace gravel; brown, no staining or odor; moist, loose	0.13	1	DT	<5	<2	30											
-1	1																			
-1.5	1.5																			
-1.5	1.5		(SM) SILTY SAND: Silty Sand; brown, no staining or odor; moist, dense	1.52																
-2	2				2	DT	<5	<2	50											
-2.5	2.5																			
-3	3		Very dense																	
-3.5	3.5				3	DT	<5	<2	80											
-4	4																			
-4.5	4.5																			
-5	5																			
-5.5	5.5																			
-5.5	5.5		Borehole terminated @ 5.2 mbgs due to target depth achieved.	5.18																
-6	6																			
-6.5	6.5																			
-7	7																			
-7.5	7.5																			

GRAINSIZE DISTRIBUTION

SAMPLE	GRAVEL	SAND	SILT	CLAY
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BH101_1.5-2.1:
PHCs, VOCs, PAHs,
metals, Hg, CrVI,
B-HWS

Groundwater level
measured at 2.36 m
bgs on July 3, 2024



Client: Prince Edward County

Contractor: Strata Drilling Group

Project No.: 20355-001

Location: 35 Barker Street, Picton

Project Name: 35 Barker Street, Picton

Method: M13 Massenza Track DT

Elevation: 0

UTM: 18T **N:** 4875173 **E:** 327947

Log of Borehole: BH102

Page: 1 of 1

Date Completed: 06/20/2024

SUBSURFACE PROFILE					SAMPLE												Well Installation	Log Notes
Elevation (m)	Depth	Lithology	Description	Elevation Depth	Number	Type	CSV (ppm)	OV (ppm)	% Recovery	SPT (N)/DCPT	Atterberg Limits (%)			Shear Strength Cu, kPa				
											LL	PL	PI	nat V.	rem V.	nat V.		
											25	50	75	20	40	60	80	
											% Moisture			SPT (N) / DCPT				
											25	50	75	20	40	60	80	
0	0		ASPHALT: -0.05															
			CONCRETE: -0.06															
			FILL: Brown Gravel, moist -0.08															
-0.5	0.5		(SW) SAND: Sand, trace gravel; brown, no staining or odor; moist, loose 0.13		1	DT	<5	<2	20									
-1	1																	
-1.5	1.5		Some cobbles															
-2	2		Boulder		2	DT	<5	<2	20									
-2.5	2.5																	
-3	3			-3.05														
-3.5	3.5		(SM) SILTY SAND: Silty Sand, cobbles; greyish-brown, no staining or odor; moist, dense 3.05															
-4	4				3	DT	<5	<2	80									
-4.5	4.5		Saturated															
-5	5				4	DT	<5	<2	50									
-5.5	5.5		Blueish-grey clay -5.18															
			Borehole terminated @ 5.2 mbgs due to target depth achieved. 5.18															
-6	6																	
-6.5	6.5																	
-7	7																	
-7.5																		
GRAINSIZE DISTRIBUTION																		
SAMPLE GRAVEL SAND SILT CLAY																		



Phase II Environmental Site Assessment - 35 Barker Street, Picton, Ontario
The Corporation of the County of Prince Edward
Cambium Reference: 20355-001
July 22, 2024

Appendix B

Laboratory Certificates of Analysis



300 - 2319 St. Laurent Blvd
Ottawa, ON, K1G 4J8
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

Cambium Inc. (Kingston)
223 Brock Street North
Whitby, ON L1N 4N6
Attn: Derik Tam

Client PO:
Project: 20355-001

Report Date: 4-Jul-2024
Order Date: 20-Jun-2024

Custody: Revised Report

Order #: 2425460

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2425460-01	BH101_1.5-2.1
2425460-03	BH102_0.9-1.5
2425460-04	BH102_4.5-5.1

Approved By: 

Mark Foto, M.Sc.
Lab Supervisor



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	27-Jun-24	27-Jun-24
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	24-Jun-24	24-Jun-24
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	25-Jun-24	25-Jun-24
Mercury by CVAA	EPA 7471B - CVAA, digestion	26-Jun-24	26-Jun-24
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	26-Jun-24	26-Jun-24
PHC F1	CWS Tier 1 - P&T GC-FID	24-Jun-24	24-Jun-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	25-Jun-24	25-Jun-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	26-Jun-24	26-Jun-24
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	26-Jun-24	26-Jun-24
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	24-Jun-24	24-Jun-24
Solids, %	CWS Tier 1 - Gravimetric	25-Jun-24	26-Jun-24



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T2 Ind/Com, coarse	Reg 153/04 -T2 Res/Park, coarse
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Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Client ID:	BH101_1.5-2.1	BH102_0.9-1.5	BH102_4.5-5.1	-	Criteria:	
Sample Date:	20-Jun-24 13:00	20-Jun-24 10:45	20-Jun-24 11:00	-	Reg 153/04 -T2	Reg 153/04 -T2
Sample ID:	2425460-01	2425460-03	2425460-04	-	Ind/Com, coarse	Res/Park, coarse
Matrix:	Soil	Soil	Soil	-		
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	91.4	91.8	90.1	-	-	-
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General Inorganics

pH	0.05 pH Units	-	7.55	7.46	-	5.00 - 9.00 pH Units	5.00 - 9.00 pH Units
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Metals

Antimony	1.0 ug/g	<1.0	-	-	-	40 ug/g	7.5 ug/g
Arsenic	1.0 ug/g	1.6	-	-	-	18 ug/g	18 ug/g
Barium	1.0 ug/g	34.6	-	-	-	670 ug/g	390 ug/g
Beryllium	0.5 ug/g	<0.5	-	-	-	8 ug/g	4 ug/g
Boron, available	0.5 ug/g	<0.5	-	-	-	2 ug/g	1.5 ug/g
Boron	5.0 ug/g	5.4	-	-	-	120 ug/g	120 ug/g
Cadmium	0.5 ug/g	<0.5	-	-	-	1.9 ug/g	1.2 ug/g
Chromium	5.0 ug/g	11.0	-	-	-	160 ug/g	160 ug/g
Chromium (VI)	0.2 ug/g	<0.2	-	-	-	8 ug/g	8 ug/g
Cobalt	1.0 ug/g	3.9	-	-	-	80 ug/g	22 ug/g
Copper	5.0 ug/g	7.1	-	-	-	230 ug/g	140 ug/g
Lead	1.0 ug/g	2.4	-	-	-	120 ug/g	120 ug/g
Mercury	0.1 ug/g	<0.1	-	-	-	3.9 ug/g	0.27 ug/g
Molybdenum	1.0 ug/g	<1.0	-	-	-	40 ug/g	6.9 ug/g
Nickel	5.0 ug/g	6.0	-	-	-	270 ug/g	100 ug/g
Selenium	1.0 ug/g	<1.0	-	-	-	5.5 ug/g	2.4 ug/g
Silver	0.3 ug/g	<0.3	-	-	-	40 ug/g	20 ug/g
Thallium	1.0 ug/g	<1.0	-	-	-	3.3 ug/g	1 ug/g
Uranium	1.0 ug/g	<1.0	-	-	-	33 ug/g	23 ug/g
Vanadium	10.0 ug/g	20.8	-	-	-	86 ug/g	86 ug/g
Zinc	20.0 ug/g	<20.0	-	-	-	340 ug/g	340 ug/g

Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Client ID:	BH101_1.5-2.1	BH102_0.9-1.5	BH102_4.5-5.1	-	Criteria:	
Sample Date:	20-Jun-24 13:00	20-Jun-24 10:45	20-Jun-24 11:00	-	Reg 153/04 -T2	Reg 153/04 -T2
Sample ID:	2425460-01	2425460-03	2425460-04	-	Ind/Com, coarse	Res/Park, coarse
Matrix:	Soil	Soil	Soil	-		
MDL/Units						

Volatiles

Acetone	0.50 ug/g	<0.50	-	-	-	16 ug/g	16 ug/g
Benzene	0.02 ug/g	<0.02	-	-	-	0.32 ug/g	0.21 ug/g
Bromodichloromethane	0.05 ug/g	<0.05	-	-	-	1.5 ug/g	1.5 ug/g
Bromoform	0.05 ug/g	<0.05	-	-	-	0.61 ug/g	0.27 ug/g
Bromomethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.05 ug/g
Carbon Tetrachloride	0.05 ug/g	<0.05	-	-	-	0.21 ug/g	0.05 ug/g
Chlorobenzene	0.05 ug/g	<0.05	-	-	-	2.4 ug/g	2.4 ug/g
Chloroform	0.05 ug/g	<0.05	-	-	-	0.47 ug/g	0.05 ug/g
Dibromochloromethane	0.05 ug/g	<0.05	-	-	-	2.3 ug/g	2.3 ug/g
Dichlorodifluoromethane	0.05 ug/g	<0.05	-	-	-	16 ug/g	16 ug/g
1,2-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	1.2 ug/g	1.2 ug/g
1,3-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	9.6 ug/g	4.8 ug/g
1,4-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	0.2 ug/g	0.083 ug/g
1,1-Dichloroethane	0.05 ug/g	<0.05	-	-	-	0.47 ug/g	0.47 ug/g
1,2-Dichloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.05 ug/g
1,1-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	0.064 ug/g	0.05 ug/g
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	1.9 ug/g	1.9 ug/g
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	1.3 ug/g	0.084 ug/g
1,2-Dichloropropane	0.05 ug/g	<0.05	-	-	-	0.16 ug/g	0.05 ug/g
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	-	-	-	0.059 ug/g	0.05 ug/g
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.05 ug/g
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	1.1 ug/g	1.1 ug/g
Hexane	0.05 ug/g	<0.05	-	-	-	46 ug/g	2.8 ug/g



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Client ID:	BH101_1.5-2.1	BH102_0.9-1.5	BH102_4.5-5.1	-	Criteria:	
Sample Date:	20-Jun-24 13:00	20-Jun-24 10:45	20-Jun-24 11:00	-	Reg 153/04 -T2	Reg 153/04 -T2
Sample ID:	2425460-01	2425460-03	2425460-04	-	Ind/Com, coarse	Res/Park, coarse
Matrix:	Soil	Soil	Soil	-		
MDL/Units						

Volatiles

Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	-	-	-	70 ug/g	16 ug/g
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	-	-	-	31 ug/g	1.7 ug/g
Methyl tert-butyl ether	0.05 ug/g	<0.05	-	-	-	1.6 ug/g	0.75 ug/g
Methylene Chloride	0.05 ug/g	<0.05	-	-	-	1.6 ug/g	0.1 ug/g
Styrene	0.05 ug/g	<0.05	-	-	-	34 ug/g	0.7 ug/g
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.087 ug/g	0.058 ug/g
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.05 ug/g
Tetrachloroethylene	0.05 ug/g	<0.05	-	-	-	1.9 ug/g	0.28 ug/g
Toluene	0.05 ug/g	<0.05	-	-	-	6.4 ug/g	2.3 ug/g
1,1,1-Trichloroethane	0.05 ug/g	<0.05	-	-	-	6.1 ug/g	0.38 ug/g
1,1,2-Trichloroethane	0.05 ug/g	<0.05	-	-	-	0.05 ug/g	0.05 ug/g
Trichloroethylene	0.05 ug/g	<0.05	-	-	-	0.55 ug/g	0.061 ug/g
Trichlorofluoromethane	0.05 ug/g	<0.05	-	-	-	4 ug/g	4 ug/g
Vinyl chloride	0.02 ug/g	<0.02	-	-	-	0.032 ug/g	0.02 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	-	-	-	26 ug/g	3.1 ug/g
Dibromofluoromethane	Surrogate	91.8%	-	-	-	-	-
4-Bromofluorobenzene	Surrogate	103%	-	-	-	-	-
Toluene-d8	Surrogate	109%	-	-	-	-	-
Benzene	0.02 ug/g	-	<0.02	<0.02	-	0.32 ug/g	0.21 ug/g
Ethylbenzene	0.05 ug/g	-	<0.05	<0.05	-	1.1 ug/g	1.1 ug/g
Toluene	0.05 ug/g	-	<0.05	<0.05	-	6.4 ug/g	2.3 ug/g
m,p-Xylenes	0.05 ug/g	-	<0.05	<0.05	-	-	-
o-Xylene	0.05 ug/g	-	<0.05	<0.05	-	-	-



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Client ID:	BH101_1.5-2.1	BH102_0.9-1.5	BH102_4.5-5.1	-	Criteria:	
Sample Date:	20-Jun-24 13:00	20-Jun-24 10:45	20-Jun-24 11:00	-	Reg 153/04 -T2	Reg 153/04 -T2
Sample ID:	2425460-01	2425460-03	2425460-04	-	Ind/Com, coarse	Res/Park, coarse
Matrix:	Soil	Soil	Soil	-		
MDL/Units						

Volatiles

Xylenes, total	0.05 ug/g	-	<0.05	<0.05	-	26 ug/g	3.1 ug/g
Toluene-d8	Surrogate	-	105%	114%	-	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	-	55 ug/g	55 ug/g
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	-	230 ug/g	98 ug/g
F3 PHCs (C16-C34)	8 ug/g	<8	<8	<8	-	1700 ug/g	300 ug/g
F4 PHCs (C34-C50)	6 ug/g	<6	<6	<6	-	3300 ug/g	2800 ug/g

Semi-Volatiles

Acenaphthene	0.02 ug/g	<0.02	<0.02	-	-	21 ug/g	7.9 ug/g
Acenaphthylene	0.02 ug/g	<0.02	<0.02	-	-	0.15 ug/g	0.15 ug/g
Anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.67 ug/g	0.67 ug/g
Benzo [a] anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.96 ug/g	0.5 ug/g
Benzo [a] pyrene	0.02 ug/g	<0.02	<0.02	-	-	0.3 ug/g	0.3 ug/g
Benzo [b] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	0.96 ug/g	0.78 ug/g
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	<0.02	-	-	9.6 ug/g	6.6 ug/g
Benzo [k] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	0.96 ug/g	0.78 ug/g
Chrysene	0.02 ug/g	<0.02	<0.02	-	-	9.6 ug/g	7 ug/g
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.1 ug/g	0.1 ug/g
Fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	9.6 ug/g	0.69 ug/g
Fluorene	0.02 ug/g	<0.02	<0.02	-	-	62 ug/g	62 ug/g
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	<0.02	-	-	0.76 ug/g	0.38 ug/g
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	30 ug/g	0.99 ug/g
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	30 ug/g	0.99 ug/g
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	<0.04	-	-	30 ug/g	0.99 ug/g
Naphthalene	0.01 ug/g	<0.01	<0.01	-	-	9.6 ug/g	0.6 ug/g



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Client ID:	BH101_1.5-2.1	BH102_0.9-1.5	BH102_4.5-5.1	-	Criteria:	
Sample Date:	20-Jun-24 13:00	20-Jun-24 10:45	20-Jun-24 11:00	-	Reg 153/04 -T2	Reg 153/04 -T2
Sample ID:	2425460-01	2425460-03	2425460-04	-	Ind/Com, coarse	Res/Park, coarse
Matrix:	Soil	Soil	Soil	-		
MDL/Units						

Semi-Volatiles

Phenanthrene	0.02 ug/g	<0.02	<0.02	-	-	12 ug/g	6.2 ug/g
Pyrene	0.02 ug/g	<0.02	<0.02	-	-	96 ug/g	78 ug/g
2-Fluorobiphenyl	Surrogate	78.7%	75.7%	-	-	-	-
Terphenyl-d14	Surrogate	106%	109%	-	-	-	-



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	0.896		%	67.2	50-140			
Surrogate: Terphenyl-d14	1.26		%	94.4	50-140			
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: 4-Bromofluorobenzene	8.40		%	105	50-140			
Surrogate: Dibromofluoromethane	6.64		%	83.0	50-140			
Surrogate: Toluene-d8	7.69		%	96.2	50-140			
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	7.69		%	96.2	50-140			



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.51	0.05	pH Units	7.55			0.5	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	2.1	1.0	ug/g	1.9			12.8	30	
Barium	16.4	1.0	ug/g	14.4			12.9	30	
Beryllium	ND	0.5	ug/g	ND			NC	30	
Boron, available	0.77	0.5	ug/g	ND			NC	35	
Boron	ND	5.0	ug/g	ND			NC	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	6.9	5.0	ug/g	5.9			15.0	30	
Cobalt	2.2	1.0	ug/g	1.9			16.1	30	
Copper	7.1	5.0	ug/g	6.2			13.3	30	
Lead	3.8	1.0	ug/g	3.3			14.4	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	5.4	5.0	ug/g	ND			NC	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	13.1	10.0	ug/g	11.5			13.1	30	
Zinc	ND	20.0	ug/g	ND			NC	30	
Physical Characteristics									
% Solids	88.4	0.1	% by Wt.	87.5			1.0	25	



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	ND	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	1.12		%		77.1	50-140			
Surrogate: Terphenyl-d14	1.55		%		107	50-140			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	10.5		%		114	50-140			
Surrogate: Dibromofluoromethane	8.62		%		93.6	50-140			
Surrogate: Toluene-d8	9.86		%		107	50-140			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	9.86		%		107	50-140			



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	196	7	ug/g	ND	97.8	85-115			
F2 PHCs (C10-C16)	93	4	ug/g	ND	106	60-140			
F3 PHCs (C16-C34)	228	8	ug/g	ND	106	60-140			
F4 PHCs (C34-C50)	132	6	ug/g	ND	97.1	60-140			
Metals									
Arsenic	47.4	1.0	ug/g	ND	93.3	70-130			
Barium	55.0	1.0	ug/g	5.8	98.4	70-130			
Beryllium	50.3	0.5	ug/g	ND	100	70-130			
Boron, available	3.71	0.5	ug/g	ND	74.1	70-122			
Boron	48.6	5.0	ug/g	ND	94.9	70-130			
Cadmium	46.4	0.5	ug/g	ND	92.8	70-130			
Chromium (VI)	0.08	0.2	ug/g	ND	41.5	70-130			QM-05
Chromium	51.9	5.0	ug/g	ND	99.1	70-130			
Cobalt	48.9	1.0	ug/g	ND	96.2	70-130			
Copper	48.3	5.0	ug/g	ND	91.6	70-130			
Lead	47.4	1.0	ug/g	1.3	92.1	70-130			
Mercury	1.30	0.1	ug/g	ND	86.6	70-130			
Molybdenum	46.1	1.0	ug/g	ND	91.8	70-130			
Nickel	49.6	5.0	ug/g	ND	95.3	70-130			
Selenium	43.8	1.0	ug/g	ND	87.5	70-130			
Silver	39.9	0.3	ug/g	ND	79.8	70-130			
Thallium	46.8	1.0	ug/g	ND	93.5	70-130			
Uranium	47.9	1.0	ug/g	ND	95.6	70-130			
Vanadium	54.7	10.0	ug/g	ND	100	70-130			
Zinc	49.7	20.0	ug/g	ND	88.7	70-130			
Semi-Volatiles									
Acenaphthene	0.153	0.02	ug/g	ND	84.0	50-140			
Acenaphthylene	0.152	0.02	ug/g	ND	83.4	50-140			
Anthracene	0.169	0.02	ug/g	ND	92.6	50-140			
Benzo [a] anthracene	0.148	0.02	ug/g	ND	81.2	50-140			

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [a] pyrene	0.104	0.02	ug/g	ND	56.8	50-140			
Benzo [b] fluoranthene	0.110	0.02	ug/g	ND	60.2	50-140			
Benzo [g,h,i] perylene	0.105	0.02	ug/g	ND	57.5	50-140			
Benzo [k] fluoranthene	0.126	0.02	ug/g	ND	68.9	50-140			
Chrysene	0.153	0.02	ug/g	ND	83.7	50-140			
Dibenzo [a,h] anthracene	0.108	0.02	ug/g	ND	59.1	50-140			
Fluoranthene	0.154	0.02	ug/g	ND	84.4	50-140			
Fluorene	0.165	0.02	ug/g	ND	90.4	50-140			
Indeno [1,2,3-cd] pyrene	0.104	0.02	ug/g	ND	57.3	50-140			
1-Methylnaphthalene	0.147	0.02	ug/g	ND	80.6	50-140			
2-Methylnaphthalene	0.146	0.02	ug/g	ND	80.2	50-140			
Naphthalene	0.144	0.01	ug/g	ND	79.0	50-140			
Phenanthrene	0.150	0.02	ug/g	ND	82.2	50-140			
Pyrene	0.170	0.02	ug/g	ND	93.5	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.16</i>		%		<i>79.7</i>	<i>50-140</i>			
<i>Surrogate: Terphenyl-d14</i>	<i>1.54</i>		%		<i>106</i>	<i>50-140</i>			
Volatiles									
Acetone	9.08	0.50	ug/g	ND	90.8	50-140			
Benzene	4.08	0.02	ug/g	ND	102	60-130			
Bromodichloromethane	3.38	0.05	ug/g	ND	84.5	60-130			
Bromoform	3.67	0.05	ug/g	ND	91.7	60-130			
Bromomethane	3.96	0.05	ug/g	ND	99.0	50-140			
Carbon Tetrachloride	2.77	0.05	ug/g	ND	69.3	60-130			
Chlorobenzene	4.14	0.05	ug/g	ND	103	60-130			
Chloroform	3.95	0.05	ug/g	ND	98.9	60-130			
Dibromochloromethane	3.44	0.05	ug/g	ND	86.0	60-130			
Dichlorodifluoromethane	3.66	0.05	ug/g	ND	91.6	50-140			
1,2-Dichlorobenzene	4.26	0.05	ug/g	ND	107	60-130			
1,3-Dichlorobenzene	4.18	0.05	ug/g	ND	105	60-130			
1,4-Dichlorobenzene	4.10	0.05	ug/g	ND	102	60-130			
1,1-Dichloroethane	4.01	0.05	ug/g	ND	100	60-130			



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloroethane	4.26	0.05	ug/g	ND	106	60-130			
1,1-Dichloroethylene	3.58	0.05	ug/g	ND	89.6	60-130			
cis-1,2-Dichloroethylene	3.98	0.05	ug/g	ND	99.5	60-130			
trans-1,2-Dichloroethylene	3.76	0.05	ug/g	ND	94.0	60-130			
1,2-Dichloropropane	3.84	0.05	ug/g	ND	95.9	60-130			
cis-1,3-Dichloropropylene	3.04	0.05	ug/g	ND	76.0	60-130			
trans-1,3-Dichloropropylene	3.21	0.05	ug/g	ND	80.2	60-130			
Ethylbenzene	4.17	0.05	ug/g	ND	104	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	3.20	0.05	ug/g	ND	80.1	60-130			
Hexane	4.28	0.05	ug/g	ND	107	60-130			
Methyl Ethyl Ketone (2-Butanone)	8.13	0.50	ug/g	ND	81.3	50-140			
Methyl Isobutyl Ketone	8.61	0.50	ug/g	ND	86.1	50-140			
Methyl tert-butyl ether	12.2	0.05	ug/g	ND	122	50-140			
Methylene Chloride	3.65	0.05	ug/g	ND	91.4	60-130			
Styrene	3.77	0.05	ug/g	ND	94.3	60-130			
1,1,1,2-Tetrachloroethane	3.30	0.05	ug/g	ND	82.5	60-130			
1,1,2,2-Tetrachloroethane	3.43	0.05	ug/g	ND	85.7	60-130			
Tetrachloroethylene	3.85	0.05	ug/g	ND	96.1	60-130			
Toluene	3.73	0.05	ug/g	ND	93.3	60-130			
1,1,1-Trichloroethane	2.95	0.05	ug/g	ND	73.8	60-130			
1,1,2-Trichloroethane	3.81	0.05	ug/g	ND	95.2	60-130			
Trichloroethylene	3.73	0.05	ug/g	ND	93.1	60-130			
Trichlorofluoromethane	3.88	0.05	ug/g	ND	96.9	50-140			
Vinyl chloride	3.03	0.02	ug/g	ND	75.6	50-140			
m,p-Xylenes	8.11	0.05	ug/g	ND	101	60-130			
o-Xylene	4.25	0.05	ug/g	ND	106	60-130			
Surrogate: 4-Bromofluorobenzene	8.47		%		106	50-140			
Surrogate: Dibromofluoromethane	8.57		%		107	50-140			
Surrogate: Toluene-d8	7.78		%		97.2	50-140			
Benzene	4.08	0.02	ug/g	ND	102	60-130			
Ethylbenzene	4.17	0.05	ug/g	ND	104	60-130			



Order #: 2425460

Certificate of Analysis

Report Date: 04-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	3.73	0.05	ug/g	ND	93.3	60-130			
m,p-Xylenes	8.11	0.05	ug/g	ND	101	60-130			
o-Xylene	4.25	0.05	ug/g	ND	106	60-130			
Surrogate: Toluene-d8	7.78		%		97.2	50-140			

Certificate of Analysis

Client: Cambium Inc. (Kingston)

Report Date: 04-Jul-2024

Order Date: 20-Jun-2024

Client PO:

Project Description: 20355-001

Qualifier Notes:**QC Qualifiers:**

QM-05 The spike recovery was outside acceptance limits for the matrix spike due to matrix interference.

Sample Data Revisions:

None

Work Order Revisions / Comments:

REVISION-1: This report includes additional PHCs + BTEX data for sample 2425460-04.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unless otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.



Parcel ID: 2425460

Parcel Order Number
(Lab Use Only)

2425460

Chain of Custody
(Lab Use Only)

118 344755

Client Name: Cambium Inc.	Project Ref: 20355-001	Page 1 of 1
Contact Name: Derek Tam	Quote #:	Turnaround Time ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular Date Required:
Address:	PO #:	
Telephone:	E-mail: derek.tam kelsi.daugherty	

☐ REG 153/04 ☐ REG 406/19 ☐ Table 1 ☒ Res/Park ☐ Med/Fine ☒ Table 2 ☒ Ind/Comm ☒ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table _____ For RSC: ☐ Yes ☒ No	Other Regulation ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU-Storm Mun: _____ ☐ Other	Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)	Required Analysis											
Sample ID/Location Name	Matrix	Air Volume	# of Containers	Date	Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CuI	B (HWS)	pH	Hold
1 PH101-1.5-2.1	S		2	06/20/24	1300	X	X	X	X	X	X	X		
2 BH101-3.9-4.5	1		1		1305								X	
3 BH102-0.9-1.5	1		1		1015	X		X					X	
4 BH102-4.5-5.1	1		1		1100								X	X
5														
6														
7														
8														
9														
10														

Comments: pH not on hold for BH 102-4.5-5.1		Method of Delivery: Drop Box	
Relinquished By (Sign): [Signature]	Received at Depot: [Signature]	Received at Lab: [Signature]	Verified By: [Signature]
Relinquished By (Print): Kelsi Daugherty	Date/Time: June 20 16:33	Date/Time: June 21 15:45	Date/Time: June 22 20:13:56
Date/Time: 06/20/24 @ 16:30	Temperature: 15.7 °C	Temperature: 8.3 °C	pH Verified: ☐ By: _____

Chain of Custody (Env).xlsx



300 - 2319 St. Laurent Blvd
Ottawa, ON, K1G 4J8
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

Cambium Inc. (Kingston)
223 Brock Street North
Whitby, ON L1N 4N6
Attn: Derik Tam

Client PO:
Project: 20355-001
Custody: 144706

Report Date: 10-Jul-2024
Order Date: 4-Jul-2024

Order #: 2427285

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2427285-01	BH102
2427285-02	BH101

Approved By: 

Dale Robertson, BSc
Laboratory Director



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	9-Jul-24	9-Jul-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	9-Jul-24	9-Jul-24
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	9-Jul-24	9-Jul-24
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	9-Jul-24	9-Jul-24



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T2 Potable Groundwater, coarse	Reg 153/04 -T2 Potable Groundwater, fine
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Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Client ID:	BH102	BH101	-	-	Criteria:	
Sample Date:	03-Jul-24 15:35	03-Jul-24 14:45	-	-	Reg 153/04 -T2	Reg 153/04 -T2
Sample ID:	2427285-01	2427285-02	-	-	Potable	Potable
Matrix:	Ground Water	Ground Water	-	-	Groundwater, coarse	Groundwater, fine
MDL/Units						

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	-	-	2700 ug/L	2700 ug/L
Benzene	0.5 ug/L	<0.5	<0.5	-	-	5 ug/L	5 ug/L
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	-	-	16 ug/L	16 ug/L
Bromoform	0.5 ug/L	<0.5	<0.5	-	-	25 ug/L	25 ug/L
Bromomethane	0.5 ug/L	<0.5	<0.5	-	-	0.89 ug/L	0.89 ug/L
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	-	-	0.79 ug/L	5 ug/L
Chlorobenzene	0.5 ug/L	<0.5	<0.5	-	-	30 ug/L	30 ug/L
Chloroform	0.5 ug/L	0.8	<0.5	-	-	2.4 ug/L	22 ug/L
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	-	-	25 ug/L	25 ug/L
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	-	-	590 ug/L	590 ug/L
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-	3 ug/L	3 ug/L
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-	59 ug/L	59 ug/L
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-	1 ug/L	1 ug/L
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-	5 ug/L	5 ug/L
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-	1.6 ug/L	5 ug/L
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-	1.6 ug/L	14 ug/L
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-	1.6 ug/L	17 ug/L
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-	1.6 ug/L	17 ug/L
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	-	-	5 ug/L	5 ug/L
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	-	-	0.5 ug/L	0.5 ug/L
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	<0.2	-	-	0.2 ug/L	0.2 ug/L
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-	2.4 ug/L	2.4 ug/L
Hexane	1.0 ug/L	<1.0	<1.0	-	-	51 ug/L	520 ug/L



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Client ID:	BH102	BH101	-	-	Criteria:	
Sample Date:	03-Jul-24 15:35	03-Jul-24 14:45	-	-	Reg 153/04 -T2	Reg 153/04 -T2
Sample ID:	2427285-01	2427285-02	-	-	Potable	Potable
Matrix:	Ground Water	Ground Water	-	-	Groundwater, coarse	Groundwater, fine
MDL/Units						

Volatiles

Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	-	-	1800 ug/L	1800 ug/L
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	-	-	640 ug/L	640 ug/L
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	-	-	15 ug/L	15 ug/L
Methylene Chloride	5.0 ug/L	<5.0	<5.0	-	-	50 ug/L	50 ug/L
Styrene	0.5 ug/L	<0.5	<0.5	-	-	5.4 ug/L	5.4 ug/L
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-	1.1 ug/L	1.1 ug/L
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-	1 ug/L	1 ug/L
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	-	-	1.6 ug/L	17 ug/L
Toluene	0.5 ug/L	<0.5	<0.5	-	-	24 ug/L	24 ug/L
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-	200 ug/L	200 ug/L
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-	4.7 ug/L	5 ug/L
Trichloroethylene	0.5 ug/L	<0.5	<0.5	-	-	1.6 ug/L	5 ug/L
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	-	-	150 ug/L	150 ug/L
Vinyl chloride	0.5 ug/L	<0.5	<0.5	-	-	0.5 ug/L	1.7 ug/L
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-	300 ug/L	300 ug/L
Dibromofluoromethane	Surrogate	96.8%	100%	-	-	-	-
Toluene-d8	Surrogate	114%	115%	-	-	-	-
4-Bromofluorobenzene	Surrogate	120%	124%	-	-	-	-

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-	750 ug/L	750 ug/L
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-	150 ug/L	150 ug/L
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-	500 ug/L	500 ug/L
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-	500 ug/L	500 ug/L



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Client ID:	BH102	BH101	-	-	Criteria:	
Sample Date:	03-Jul-24 15:35	03-Jul-24 14:45	-	-	Reg 153/04 -T2	Reg 153/04 -T2
Sample ID:	2427285-01	2427285-02	-	-	Potable	Potable
Matrix:	Ground Water	Ground Water	-	-	Groundwater, coarse	Groundwater, fine
MDL/Units						

Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	<0.05	-	-	4.1 ug/L	4.1 ug/L
Acenaphthylene	0.05 ug/L	<0.05	<0.05	-	-	1 ug/L	1 ug/L
Anthracene	0.01 ug/L	<0.01	<0.01	-	-	2.4 ug/L	2.4 ug/L
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	-	-	1 ug/L	1 ug/L
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	-	-	0.01 ug/L	0.01 ug/L
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-	0.1 ug/L	0.1 ug/L
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	-	-	0.2 ug/L	0.2 ug/L
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-	0.1 ug/L	0.1 ug/L
Chrysene	0.05 ug/L	<0.05	<0.05	-	-	0.1 ug/L	0.1 ug/L
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	-	-	0.2 ug/L	0.2 ug/L
Fluoranthene	0.01 ug/L	<0.01	<0.01	-	-	0.41 ug/L	0.41 ug/L
Fluorene	0.05 ug/L	<0.05	<0.05	-	-	120 ug/L	120 ug/L
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	-	-	0.2 ug/L	0.2 ug/L
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-	3.2 ug/L	3.2 ug/L
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-	3.2 ug/L	3.2 ug/L
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	-	-	3.2 ug/L	3.2 ug/L
Naphthalene	0.05 ug/L	<0.05	<0.05	-	-	11 ug/L	11 ug/L
Phenanthrene	0.05 ug/L	<0.05	<0.05	-	-	1 ug/L	1 ug/L
Pyrene	0.01 ug/L	<0.01	<0.01	-	-	4.1 ug/L	4.1 ug/L
2-Fluorobiphenyl	Surrogate	64.0%	61.4%	-	-	-	-
Terphenyl-d14	Surrogate	86.9%	88.9%	-	-	-	-



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
Semi-Volatiles								
Acenaphthene	ND	0.05	ug/L					
Acenaphthylene	ND	0.05	ug/L					
Anthracene	ND	0.01	ug/L					
Benzo [a] anthracene	ND	0.01	ug/L					
Benzo [a] pyrene	ND	0.01	ug/L					
Benzo [b] fluoranthene	ND	0.05	ug/L					
Benzo [g,h,i] perylene	ND	0.05	ug/L					
Benzo [k] fluoranthene	ND	0.05	ug/L					
Chrysene	ND	0.05	ug/L					
Dibenzo [a,h] anthracene	ND	0.05	ug/L					
Fluoranthene	ND	0.01	ug/L					
Fluorene	ND	0.05	ug/L					
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L					
1-Methylnaphthalene	ND	0.05	ug/L					
2-Methylnaphthalene	ND	0.05	ug/L					
Methylnaphthalene (1&2)	ND	0.10	ug/L					
Naphthalene	ND	0.05	ug/L					
Phenanthrene	ND	0.05	ug/L					
Pyrene	ND	0.01	ug/L					
Surrogate: 2-Fluorobiphenyl	14.5		%	72.6	50-140			
Surrogate: Terphenyl-d14	19.6		%	98.1	50-140			
Volatiles								
Acetone	ND	5.0	ug/L					
Benzene	ND	0.5	ug/L					
Bromodichloromethane	ND	0.5	ug/L					
Bromoform	ND	0.5	ug/L					



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromomethane	ND	0.5	ug/L					
Carbon Tetrachloride	ND	0.2	ug/L					
Chlorobenzene	ND	0.5	ug/L					
Chloroform	ND	0.5	ug/L					
Dibromochloromethane	ND	0.5	ug/L					
Dichlorodifluoromethane	ND	1.0	ug/L					
1,2-Dichlorobenzene	ND	0.5	ug/L					
1,3-Dichlorobenzene	ND	0.5	ug/L					
1,4-Dichlorobenzene	ND	0.5	ug/L					
1,1-Dichloroethane	ND	0.5	ug/L					
1,2-Dichloroethane	ND	0.5	ug/L					
1,1-Dichloroethylene	ND	0.5	ug/L					
cis-1,2-Dichloroethylene	ND	0.5	ug/L					
trans-1,2-Dichloroethylene	ND	0.5	ug/L					
1,2-Dichloropropane	ND	0.5	ug/L					
cis-1,3-Dichloropropylene	ND	0.5	ug/L					
trans-1,3-Dichloropropylene	ND	0.5	ug/L					
1,3-Dichloropropene, total	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L					
Hexane	ND	1.0	ug/L					
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L					
Methyl Isobutyl Ketone	ND	5.0	ug/L					
Methyl tert-butyl ether	ND	2.0	ug/L					
Methylene Chloride	ND	5.0	ug/L					
Styrene	ND	0.5	ug/L					
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L					
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L					
Tetrachloroethylene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
1,1,1-Trichloroethane	ND	0.5	ug/L					
1,1,2-Trichloroethane	ND	0.5	ug/L					
Trichloroethylene	ND	0.5	ug/L					



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Trichlorofluoromethane	ND	1.0	ug/L					
Vinyl chloride	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: 4-Bromofluorobenzene	91.7		%	115	50-140			
Surrogate: Dibromofluoromethane	63.0		%	78.8	50-140			
Surrogate: Toluene-d8	109		%	136	50-140			



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	0.90	0.5	ug/L	1.12			21.8	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	2.01	0.5	ug/L	2.22			9.9	30	
Dibromochloromethane	1.25	0.5	ug/L	1.23			1.6	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	91.6		%		114	50-140			
Surrogate: Dibromofluoromethane	65.6		%		82.0	50-140			
Surrogate: Toluene-d8	103		%		129	50-140			



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1850	25	ug/L	ND	92.7	85-115			
F2 PHCs (C10-C16)	1600	100	ug/L	ND	100	60-140			
F3 PHCs (C16-C34)	3720	100	ug/L	ND	94.9	60-140			
F4 PHCs (C34-C50)	1940	100	ug/L	ND	78.2	60-140			
Semi-Volatiles									
Acenaphthene	4.02	0.05	ug/L	ND	80.3	50-140			
Acenaphthylene	4.10	0.05	ug/L	ND	82.0	50-140			
Anthracene	4.71	0.01	ug/L	ND	94.2	50-140			
Benzo [a] anthracene	4.49	0.01	ug/L	ND	89.8	50-140			
Benzo [a] pyrene	5.69	0.01	ug/L	ND	114	50-140			
Benzo [b] fluoranthene	4.47	0.05	ug/L	ND	89.3	50-140			
Benzo [g,h,i] perylene	4.55	0.05	ug/L	ND	91.0	50-140			
Benzo [k] fluoranthene	4.59	0.05	ug/L	ND	91.8	50-140			
Chrysene	4.41	0.05	ug/L	ND	88.3	50-140			
Dibenzo [a,h] anthracene	4.48	0.05	ug/L	ND	89.6	50-140			
Fluoranthene	5.33	0.01	ug/L	ND	107	50-140			
Fluorene	4.11	0.05	ug/L	ND	82.2	50-140			
Indeno [1,2,3-cd] pyrene	4.89	0.05	ug/L	ND	97.8	50-140			
1-Methylnaphthalene	4.10	0.05	ug/L	ND	81.9	50-140			
2-Methylnaphthalene	5.98	0.05	ug/L	ND	120	50-140			
Naphthalene	4.55	0.05	ug/L	ND	91.0	50-140			
Phenanthrene	4.60	0.05	ug/L	ND	91.9	50-140			
Pyrene	5.74	0.01	ug/L	ND	115	50-140			
Surrogate: 2-Fluorobiphenyl	14.8		%		73.8	50-140			
Surrogate: Terphenyl-d14	19.6		%		98.1	50-140			
Volatiles									
Acetone	76.8	5.0	ug/L	ND	76.8	50-140			
Benzene	37.3	0.5	ug/L	ND	93.2	60-130			
Bromodichloromethane	33.7	0.5	ug/L	ND	84.2	60-130			
Bromoform	30.3	0.5	ug/L	ND	75.8	60-130			

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromomethane	38.7	0.5	ug/L	ND	96.7	50-140			
Carbon Tetrachloride	32.3	0.2	ug/L	ND	80.7	60-130			
Chlorobenzene	39.4	0.5	ug/L	ND	98.6	60-130			
Chloroform	36.9	0.5	ug/L	ND	92.3	60-130			
Dibromochloromethane	32.9	0.5	ug/L	ND	82.2	60-130			
Dichlorodifluoromethane	44.6	1.0	ug/L	ND	112	50-140			
1,2-Dichlorobenzene	39.1	0.5	ug/L	ND	97.8	60-130			
1,3-Dichlorobenzene	30.4	0.5	ug/L	ND	76.1	60-130			
1,4-Dichlorobenzene	31.5	0.5	ug/L	ND	78.8	60-130			
1,1-Dichloroethane	35.0	0.5	ug/L	ND	87.5	60-130			
1,2-Dichloroethane	34.4	0.5	ug/L	ND	85.9	60-130			
1,1-Dichloroethylene	40.8	0.5	ug/L	ND	102	60-130			
cis-1,2-Dichloroethylene	38.6	0.5	ug/L	ND	96.4	60-130			
trans-1,2-Dichloroethylene	41.4	0.5	ug/L	ND	104	60-130			
1,2-Dichloropropane	32.1	0.5	ug/L	ND	80.2	60-130			
cis-1,3-Dichloropropylene	42.4	0.5	ug/L	ND	106	60-130			
trans-1,3-Dichloropropylene	37.2	0.5	ug/L	ND	93.1	60-130			
Ethylbenzene	32.3	0.5	ug/L	ND	80.7	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	35.0	0.2	ug/L	ND	87.6	60-130			
Hexane	47.4	1.0	ug/L	ND	118	60-130			
Methyl Ethyl Ketone (2-Butanone)	70.8	5.0	ug/L	ND	70.8	50-140			
Methyl Isobutyl Ketone	70.9	5.0	ug/L	ND	70.9	50-140			
Methyl tert-butyl ether	123	2.0	ug/L	ND	123	50-140			
Methylene Chloride	40.2	5.0	ug/L	ND	100	60-130			
Styrene	34.3	0.5	ug/L	ND	85.8	60-130			
1,1,1,2-Tetrachloroethane	36.7	0.5	ug/L	ND	91.6	60-130			
1,1,2,2-Tetrachloroethane	31.8	0.5	ug/L	ND	79.4	60-130			
Tetrachloroethylene	41.1	0.5	ug/L	ND	103	60-130			
Toluene	37.1	0.5	ug/L	ND	92.7	60-130			
1,1,1-Trichloroethane	37.2	0.5	ug/L	ND	93.1	60-130			
1,1,2-Trichloroethane	34.4	0.5	ug/L	ND	86.0	60-130			



Order #: 2427285

Certificate of Analysis

Report Date: 10-Jul-2024

Client: Cambium Inc. (Kingston)

Order Date: 4-Jul-2024

Client PO:

Project Description: 20355-001

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Trichloroethylene	35.6	0.5	ug/L	ND	89.0	60-130			
Trichlorofluoromethane	39.8	1.0	ug/L	ND	99.4	60-130			
Vinyl chloride	49.1	0.5	ug/L	ND	123	50-140			
m,p-Xylenes	60.9	0.5	ug/L	ND	76.2	60-130			
o-Xylene	30.5	0.5	ug/L	ND	76.2	60-130			
Surrogate: 4-Bromofluorobenzene	79.9		%		99.8	50-140			
Surrogate: Dibromofluoromethane	106		%		132	50-140			
Surrogate: Toluene-d8	99.0		%		124	50-140			



Order #: 2427285

Certificate of Analysis

Client: Cambium Inc. (Kingston)

Client PO:

Report Date: 10-Jul-2024

Order Date: 4-Jul-2024

Project Description: 20355-001

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.



Paracel ID: 2427285

Paracel Order Number
(Lab Use Only)

2427285

Chain of Custody
(Lab Use Only)

No 144706

Client Name: Cambium	Project Ref: 20355-001	Page 1 of 1
Contact Name: Derik Tam	Quote #: 2044706 A-F	Turnaround Time ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular Date Required:
Address:	PO #:	
Telephone: 705-957-0137	E-mail: derik.tam@cambium-inc.com orlie.fynn@cambium-inc.com	

☒ REG 153/04 ☐ REG 406/19		Other Regulation		Matrix Type: S (Soil/Sed.) GW (Ground Water)		Required Analysis													
☐ Table 1 ☒ Res/Park ☐ Med/Fine ☒ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table ____	☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU-Storm Mun: _____ ☐ Other	☐ SW (Surface Water) ☐ SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)		Sample Taken															
For RSC: ☐ Yes ☒ No		Matrix	Air Volume	# of Containers	Date	Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	Cu/I	B (HWS)						
Sample ID/Location Name																			
1 BH102		GW		4	24/07/03	15:35	X	X	X										
2 BH101		GW		4	24/07/03	14:45	X	X	X										
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Comments:		Method of Delivery:	
Relinquished By (Sign):	Received at Depot: <i>CP</i>	Received at Lab: <i>DB</i>	Verified By: <i>Walk in</i>
Relinquished By (Print):	Date/Time: July 4 14:21	Date/Time: July 6 14:45	Date/Time: July 6 14:45
Date/Time:	Temperature: 12.6 °C	Temperature: 11.9/11.4 °C	pH Verified: ☐ By: <i>DB</i>

Chain of Custody (Env).xlsx



Appendix C

Ground Penetrating Radar Scan Results

Company: Cambium Inc.		Requested by: Derik Tam	
Phone #: 9059264294		Email Address: derik.tam@cambium-inc.com	
Company Address: Bayfield Street, Barrie		Excavation Date: 19-Jun-2024	
Locate Address: 35 Barker Street, Prince Edward		Site Contact Phone #:	
Site meet with Excavator: ☒ Yes ☐ No		If yes, site contact name:	
Depth of Excavation:			
Caller's Remarks / Instructions:			
LOCATE SERVICES PROVIDED: ☒ PRIVATELY-OWNED INFRASTRUCTURE ☐ DESIGN / PRE-ENG. (SUE / SUM)			
A NOTICE TO EXCAVATOR, AUXILIARY DRAWING REPORT AND CLIENT ACKNOWLEDGMENTS PAGE WILL ACCOMPANY THIS PRIMARY SHEET.			
PLEASE READ AND UNDERSTAND ALL SPECIAL INSTRUCTIONS AND LIMITATIONS NOTED IN THE FOLLOWING PAGES.			
Type and Location of Work:	☐ PUBLIC PROPERTY ☒ PRIVATE PROPERTY ☒ EXTERIOR ☐ INTERIOR ☒ BOREHOLE DRILLING ☐ DIRECTIONAL DRILLING ☐ MACHINE DIG ☐ VACUUM EXCAVATION ☐ HAND DIG ☐ OTHER:		
Equipment Used:	☒ EM TRANSMITTER ☐ PUSH SEWER CAMERA / SONDE ☐ ROBOTIC SEWER CAMERA ☐ LATERAL LAUNCH SEWER CAMERA ☐ MAGNETOMETER / PIN FINDER ☒ NOGGIN GPR 250 MHZ WITH GPS ☐ CONQUEST GPR 1000MHZ ☒ EM61 ☐ EM31		
Utility Locate Technician (ULT) Name: Will P.		LOCATE DELIVERED VIA EMAIL	
ACKNOWLEDGMENTS / WARNINGS:			
READ AND FULLY UNDERSTAND ALL THE PAGES CONTAINED IN THIS LOCATE REPORT. THIS LOCATE REPORT INCLUDES THIS PRIMARY LOCATE REPORT, A NOTICE TO EXCAVATOR, DRAWING AUXILIARY LOCATE REPORT AND CLIENT ACKNOWLEDGMENT DISCLAIMER FOR THE BURIED FACILITIES INVESTIGATED, LOCATED AND MARKED BY KNOW BEFORE YOU DIG LOCATES, INC.			
LOCATES ARE VALID FOR A LIMITED TIME. THE VALIDITY PERIOD FOR THIS LOCATE IS 60-DAYS FROM THE LOCATE DATE.			
THIS LOCATE REPORT IN ITS ENTIRETY MUST BE AT THE WORK SITE AND IN THE HANDS OF THE PERSON EXCAVATING DURING ANY TYPE OF GROUND DISTURBANCE WORK FOR THIS LOCATE TO BE VALID. IF GROUND MARKINGS DO NOT MATCH THE LOCATE REPORT, ARE MISSING, OR THE EXCAVATOR FINDS AN ERROR WITH THIS REPORT, THIS LOCATE IS INVALID.			
ANY CHANGES TO LOCATION OR NATURE OF EXCAVATION WORK REQUIRES A NEW LOCATE. THE EXCAVATOR MUST NOT WORK OUTSIDE THE LOCATED AREA WITHOUT A NEW LOCATE. FOR ALL LOCATE REQUESTS, INCLUDING REMARKS, CONTACT KNOW BEFORE YOU DIG LOCATES, LLC AT THE NUMBER ABOVE FOR A NEW LOCATE.			
EACH UTILITY OWNER DEFINES THEIR OWN TOLERANCE DISTANCE. THE TOLERANCE DISTANCE IS THE HORIZONTAL SPACE ON EITHER SIDE OF THE MARKED FACILITY THAT MUST BE EXPOSED USING SOFT EXCAVATION TECHNIQUES. KNOW BEFORE YOU DIG LOCATES, INC. SETS THE TOLERANCE DISTANCE FOR THIS PRIVATE LOCATE AT 2 METERS FOR ANY MARKED BURIED FACILITY TO ACCOUNT FOR THE UNKNOWN SIZE OF THE BURIED FACILITY AND OTHER UNKNOWNNS WHEN UTILITY RECORDS ARE NOT AVAILABLE. DO NOT USE MECHANICAL EXCAVATION EQUIPMENT WITHIN THE TOLERANCE DISTANCE OF A MARKED BURIED FACILITY.			
BY ACCEPTING THIS REPORT VIA EMAIL AND RELYING UPON THIS LOCATE REPORT, THE RECIPIENT ACKNOWLEDGES AND IS IN AGREEMENT TO ALL THE TERMS AND CONDITIONS AND LIMITATIONS ON EACH LOCATE SHEET.			

Marking Colours: (These colours are used by Premier Locates to identify each Utility line marked as part of this locate.)

YELLOW

Gas, Oil, Steam, Petroleum, or Gaseous Materials

ORANGE

Communications: Phones, Cable TV, Alarm or Signal Lines, Cables, or Conduit

RED

Electric Power Lines, Cables, Conduit, and Lighting

BLUE

Potable Water

GREEN

Sewers and Drains (Sanitary & Storm Infrastructure)

PINK

Temporary Survey Marks (SUE / SUM)

PURPLE

Reclaimed Water, Irrigation, and Slurry Lines

WHITE

Proposed Excavation Limits (White Lining)

KNOW BEFORE YOU DIG
LOCATES INC

NOTICE TO EXCAVATOR

bookings@knowbeforeyoudig.ca / 905-251-4671
www.knowbeforeyoudig.ca/book-a-locate

Ticket #: 3119

Locate Address: 35 Barker Street, Prince Edward	Date Located: 2024-06-19 1:42:07PM																								
Utility Locate Methods Used: ☒ ACTIVE ☒ PASSIVE ☐ INDUCTIVE SWEEP																									
Private Detectable Services Found: ☒ AS SHOWN ON DRAWING ☐ NONE																									
Sewer Lines: ☐ LOCATED ☒ NOT LOCATED ☐ MH OR CB INVERTS MARKED WHERE FOUND / VISIBLE																									
Geophysics: ☒ EXTERIOR 250 MHZ GPR LINE SCAN ☒ EXTERIOR 250 MHZ GPR GRID SCAN ☐ INTERIOR 1,000 MHZ GPR LINE ☐ INTERIOR 1,000 MHZ GPR GRID SCAN																									
PLEASE READ AND UNDERSTAND ALL SPECIAL INSTRUCTIONS AND LIMITATIONS NOTED HERE:																									
SITE CONDITIONS / LOCATE LIMITATIONS: - A LOCATE LIMITATION FOR THIS LOCATE IS ANY FACTOR THAT HINDERED THE LOCATE TECHNICIAN WHEN PERFORMING THIS UTILITY LOCATE. - IF THERE IS A LIMITATION INDICATED IN THIS SECTION, WRITTEN OR CHECKED, THERE IS AN ELEVATED RISK OF STRIKING A BURIED FACILITY. - THE EXCAVATOR IS TO NOTIFY ALL INVOLVED WITH THIS DIG PROJECT (INCLUDING AND NOT LIMITED TO ALL FIELD STAFF, PROJECT MANAGERS, THEIR CLIENT, AND/OR PROPERTY OWNER OF THE SUBJECT PROPERTY IF THE SAME. ANY LIMITATION NOTED TRANSLATES INTO AN INCREASED RISK OF NOT FINDING ALL BURIED FACILITIES WITHIN THE WORK AREA.																									
SITE CONDITIONS / LOCATE LIMITATIONS: Documents / Access / Site Conditions: <table><tr><td>1. Site plan showing the work area:</td><td>☒ YES</td><td>☐ NO</td></tr><tr><td>2. Property as-built or utility drawings:</td><td>☐ YES</td><td>☒ NO</td></tr><tr><td>3. Survey:</td><td>☐ YES</td><td>☒ NO</td></tr><tr><td>4. Building access:</td><td>☒ YES</td><td>☐ NO</td></tr><tr><td>5. Site operations personnel interviewed:</td><td>☒ YES</td><td>☐ NO</td></tr><tr><td>6. Weather:</td><td colspan="2">26 DEGREES, SUNNY</td></tr><tr><td>7. Ground snow covered:</td><td>☐ YES</td><td>☒ NO</td></tr><tr><td>8. Obstructions:</td><td>☐ Parked Vehicles</td><td>☒ Overgrown Vegetation ☐ Product Storage</td></tr></table>		1. Site plan showing the work area:	☒ YES	☐ NO	2. Property as-built or utility drawings:	☐ YES	☒ NO	3. Survey:	☐ YES	☒ NO	4. Building access:	☒ YES	☐ NO	5. Site operations personnel interviewed:	☒ YES	☐ NO	6. Weather:	26 DEGREES, SUNNY		7. Ground snow covered:	☐ YES	☒ NO	8. Obstructions:	☐ Parked Vehicles	☒ Overgrown Vegetation ☐ Product Storage
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8. Obstructions:	☐ Parked Vehicles	☒ Overgrown Vegetation ☐ Product Storage																							
OTHER LIMITATION NOTES / SPECIAL INSTRUCTIONS: Apply Sticker Here if Required																									
Reference Documents:	Private Locate Guideline - https://www.knowbeforeyoudig.ca/post/Private-Utility-Locate-Guidelines Damage Prevention For The Protection Of Underground Infrastructure, (CSA Z-247-15, Aug 2016) Guideline For Excavating Proximity Of Underground Distribution Lines (ESA, Feb 2021)																								
(If you would like a copy of any of these documents, please contact our office at the number above.)																									

AUXILIARY LOCATE REPORT

www.knowbeforeyoudig.ca/book-a-locate

Ticket #: 3119

Date Located: 19-Jun-2024

TO: 15M WEST OF WBL

[illegible]

ANY PUBLIC UTILITY OWNED BURIED FACILITIES SHOWN HERE ARE FOR REFERENCE ONLY. THESE PUBLIC FACILITIES HAVE BEEN MARKED BY OTHERS OR MARKED BY PREMIER LOCATES WITH PINK PAINT. FACILITIES MARKED IN PINK WITHIN THE LOCATE AREA, ARE FOR SURVEY PURPOSES ONLY, AND REQUIRE A PUBLIC LOCATE.

KNOW BEFORE YOU DIG

LOCATES INC

PRIVATELY-OWNED UTILITY LOCATE

CLIENT COMPANY ACKNOWLEDGEMENTS / DISCLAIMER

BY SIGNING OR RECEIVING AN EMAILED COPY OF THIS LOCATE REPORT, THE CLIENT HAS READ, ACKNOWLEDGES, AND AGREES TO THE FOLLOWING:

EXCAVATOR - AN EXCAVATOR IS ANY PERSON, PARTNERSHIP, CORPORATION, PUBLIC AGENCY, AGENT, OR OTHER ENTITY THAT IS RESPONSIBLE FOR CARRYING OUT A GROUND DISTURBANCE.

GROUND DISTURBANCE / EXCAVATE - GROUND DISTURBANCE OR EXCAVATE MEANS ANY WORK, OPERATION, OR ACTIVITY ON OR UNDER THE EXISTING SURFACE RESULTING IN A DISTURBANCE OR DISPLACEMENT OF THE SOIL OR GROUND COVER. GROUND DISTURBANCE OR EXCAVATE CAN INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: DIGGING; EXCAVATION; TRENCHING; DITCHING; TUNNELING; BORING/DRILLING/PUSHING; AUGURING; TOPSOIL STRIPPING; LAND LEVELING/GRADING; PLOWING TO INSTALL UNDERGROUND INFRASTRUCTURE; TREE PLANTING; CLEARING AND STUMP REMOVAL; SUBSOILING; BLASTING/USE OF EXPLOSIVES; QUARRYING; GRINDING AND MILLING OF ASPHALT/CONCRETE; SEISMIC EXPLORATION; DRIVING FENCE POSTS, BARS, RODS, PINS, ANCHORS, OR PILLING; AND, CROSSING OF BURIED PIPELINES OR OTHER UNDERGROUND INFRASTRUCTURE BY HEAVY LOADS OFF THE TRAVELED PORTION OF A PUBLIC ROADWAY.

LIMIT OF LOCATE - THE EXCAVATOR MUST NOT WORK OUTSIDE THE INDICATED LOCATE AREA WITHOUT FURTHER LOCATES BY KNOW BEFORE YOU DIG LOCATES, INC. (SUBSEQUENTLY REFERRED TO AS "KBYD").

MULTIPLE EXCAVATORS - WHEN A LOCATE IS BEING PROVIDED FOR MORE THAN ONE PARTY WORKING ON THE PROJECT, THE PERSON NAMED ON THIS LOCATE REPORT IS CONSIDERED TO BE ACTING ON BEHALF OF THE EXCAVATOR IN ACCEPTING AND ENSURING THE EXCAVATOR RECEIVES A COPY OF THIS LOCATE.

VALIDITY OF LOCATE - THIS LOCATE IS ONLY VALID FOR 60 DAYS UNLESS STATED OTHERWISE ON THE LOCATE REPORT. A RE-MARK OF SURFICIAL MARKINGS PLACED ON THE SITE BY KBYD MUST BE OBTAINED PRIOR TO ANY EXCAVATION IF: THE DATE OF EXCAVATION IS PAST THE VALIDATION PERIOD; MARKINGS BECOME UNCLEAR, DISAPPEAR, ARE DISTURBED OR DISPLACED; THE SKETCH AND SITE MARKINGS DO NOT COINCIDE; THE WORK LOCATION HAS CHANGED; AND, IF ANYTHING OCCURS WHICH MAY INDICATE THAT A NEW, BETTER, OR DIFFERENT LOCATE SERVICE IS NEEDED.

GROUND MARKINGS - IF THE MARKINGS DISAPPEAR OR ARE DISPLACED OR SHOULD SKETCH MARKINGS NOT COINCIDE WITH GROUND MARKINGS. THE PRIVATE LOCATE IS INVALID AND KBYD WILL NEED TO BE CONTACTED TO EITHER REFRESH THE MARKINGS OR FIX ANY DISCREPANCY.

LEGAL REQUIREMENTS - YOU ARE REQUIRED BY LAW TO HAVE ALL BURIED PUBLIC AND PRIVATE FACILITIES LOCATED AND MARKED IN THE VICINITY OF ANY WORK BEFORE PERFORMING ANY TYPE OF EXCAVATION OR DRILLING ACTIVITIES. YOU MUST HAVE VALID PUBLIC LOCATES FOR YOUR WORK AREA. FINES AND PENALTIES BY PUBLIC AUTHORITIES CAN BE GIVEN IF WORKING WITH EXPIRED LOCATES.

PUBLIC LOCATES - ANY PUBLIC UTILITY OWNED SERVICES (GAS, TELEPHONE, CABLE TV, HYDRO, WATER, SEWER, ETC.) WITHIN THE LIMITS OF THIS LOCATE AND SHOWN ON THIS LOCATE REPORT. ARE FOR REFERENCE ONLY. THESE PUBLIC BURIED FACILITIES HAVE BEEN MARKED BY OTHERS OR MARKED BY KBYD WITH PINK PAINT. ANY BURIED FACILITIES MARKED IN PINK WITHIN THE LOCATE AREA, ARE FOR SURVEY PURPOSES ONLY, AND RE-QUIRE A PUBLIC LOCATE BEFORE EXCAVATING. IT IS THE RESPONSIBILITY OF THE CLIENT TO ENSURE AND VERIFY THAT THE INTENDED WORK ARE COINCIDES WITH THE WORK AREAS DRAWN OR DESCRIBED ON ALL PUBLIC AND PRIVATE UTILITY LOCATE REPORTS.

SCOPE OF WORK - THIS PRIVATE LOCATE REPORT IS BASED ON INFORMATION GIVEN AT THE TIME OF THE LOCATE. ANY CHANGES TO THE LOCATION OR SCOPE OF WORK REQUIRES A NEW LOCATE REPORT.

BUILDING AND/OR SERVICE ROOM ACCESS - SOME CABLES OR PIPES MAY NOT BE DETECTED OR LOCATED IF DIRECT PHYSICAL ACCESS TO BUILDING SERVICE ROOMS ARE NOT PROVIDED AT THE TIME OF THE LOCATE.

PHYSICAL LIMITATIONS - IF THERE ARE ANY PHYSICAL LIMITATIONS AT THE SITE (I.E. SNOW-COVERED GROUND, PARKED CARS, EQUIPMENT OR MATERIALS, ETC. CONGESTING THE AREA TO BE LOCATED), THE CLIENT IS HEREBY MADE AWARE AND ACKNOWLEDGES THAT SOME CABLES OR PIPES MAY NOT BE DETECTED OR LOCATED IF THE LOCATE AREA IS NOT CLEAR OF THESE OBSTRUCTIONS AT THE TIME OF THE LOCATE.

INTERIOR LOCATES - DUE TO BUILDING INTERFERENCES, CONGESTION, AND HIDDEN OR INACCESSIBLE ELECTRICAL CONDUITS OR PIPES, SOME CABLES OR PIPES MAY OR MAY NOT BE DETECTED WITH THE EQUIPMENT EMPLOYED BY KBYD. KBYD USES GROUND PENETRATING RADAR (GPR) WITH A 1000 MHZ ANTENNA ALONG WITH ELECTROMAGNETIC CABLE LOCATE EQUIPMENT WHILE PERFORMING INTERIOR PRIVATE LOCATES. SEWER LINES INSIDE BUILDINGS MAY NOT BE VISIBLE WITH GPR IF THEY ARE DEEPER THAN 2 FEET OR ARE COMPRISED OF A MATERIAL SUCH AS PLASTIC OR CLAY THAT ARE NOT VISIBLE TO GPR.

SANITARY AND STORM SEWERS - KBYD USES A CCTV CAMERA WITH BUILT-IN SONDE TO LOCATE SEWER LINES PROVIDED: SEWER DRAWINGS HAVE BEEN PROVIDED TO KBYD FROM THE PRIVATE LANDOWNER; THERE IS SUFFICIENT ACCESS TO THE SEWER LINE THAT DOES NOT REQUIRE CONFINED SPACE ENTRY; AND, THE SEWER LINE IS ON PRIVATE PROPERTY. IF A MANHOLE OR CATCH BASIN IS SHOWN ON A DRAWING OR FOUND DURING THE LOCATE, KBYD WILL ATTEMPT TO OPEN THEM, MARK THE INVERT DIRECTION, AND USE A CCTV CAMERA WITH SONDE TO LOCATE THE LINE IF SO REQUESTED BY THE CLIENT. IF KBYD IS UNABLE OPEN A MANHOLE OR CATCH BASIN, DETERMINE THE DIRECTION OF THE INVERTS, OR LOCATE THE BURIED LINE, IT WILL BE INDICATED AS A LIMITATION AND NOTED ON THE LOCATE REPORT. THE CLIENT ALSO ACKNOWLEDGES THAT TRUNK SEWER AND WATER MAINS MAY NOT BE DETECTABLE AND REQUIRE A PUBLIC LOCATE IF WITHIN AN EASEMENT ON PRIVATE PROPERTY.

UNDERGROUND STORAGE TANKS AND ASSOCIATED EQUIPMENT - KBYD DOES NOT LOCATE UNDERGROUND STORAGE TANKS OR ANY ASSOCIATED EQUIPMENT UNLESS GROUND PENETRATING RADAR AND/OR AN EM61 TIME DOMAIN METAL DETECTOR IS EMPLOYED AT THE TIME OF THE LOCATE. THE CLIENT ALSO HAS BEEN MADE AWARE OF AND ACKNOWLEDGES THAT ANY EXCAVATING OR DRILLING WITHIN KBYD DEFINED CRITICAL AREAS LABELED ON A LOCATE REPORT NEAR ANY UNDERGROUND PETROLEUM EQUIPMENT AND STRUCTURES SUCH AS UNDERGROUND STORAGE TANKS (USTS) AND FUEL DISPENSERS; AND, WITHIN THE AREA BETWEEN USTS, PUMP DISPENSERS AND FUEL KIOSK, REQUIRES HAND DIGGING OR SOFT DIGGING WITH VACUUM EXCAVATION EQUIPMENT TO EXPOSE THE WORK AREA.

- LIMITATIONS**
- THE TECHNOLOGIES EMPLOYED BY KBYD TO TRACE AND MARK BURIED FACILITIES ARE COMPLIANT WITH ACSE STANDARD 38-02 LEVEL B, WHICH ARE ASSIGNED TO HAVE A MODERATE RISK. THESE GEOPHYSICAL METHODS ARE NOT 100% EFFECTIVE AND CANNOT DETECT ALL BURIED SERVICES SINCE THERE ARE TOO MANY VARIABLES THAT CAN WORK AGAINST THE EQUIPMENT. IT MAY NOT BE POSSIBLE TO ABSOLUTELY "CLEAR" REGARDLESS OF THE SKILL, EFFORT, OR TECHNOLOGIES USED BY KBYD. LOCATING METHODS USED BY KBYD ONLY HELPS REDUCE RISK OF STRIKING A BURIED UTILITY AND DOES NOT ELIMINATE THE RISK. IF PRECISE HORIZONTAL AND VERTICAL LOCATIONS OF BURIED FACILITIES ARE NEEDED, THEN ACSE STANDARD 38-02 QUALITY LEVEL A METHODS WOULD NEED TO BE EMPLOYED. QUALITY LEVEL A METHODS INVOLVE THE ACTUAL EXPOSURE OF A FACILITY BY MEANS OF EITHER HAND DIGGING OR THE USE OF VACUUM EXCAVATION SYSTEMS
 - SOME CABLES OR PIPES MAY NOT BE DETECTABLE OR LOCATED ACCURATELY DUE TO DEPTH, LACK OF OR MALFUNCTIONING TRACER WIRES, MATERIAL MAKEUP, CONFINED SPACES, OR INABILITY TO CONNECT PROPERLY. THIS MAY BE COMPOUNDED BY THE LACK OF ACCESS OR ACCESS TOO FAR FROM THE AREA TO BE TRACED.
 - THE LOCATION AND MARKING OF BURIED FACILITIES BY THE KBYD LOCATE TECHNICIAN FOR THE CLIENT REPRESENTATIVE IS FOR THE CONVENIENCE OF THAT SAID APPLICANT ONLY AND DOES NOT RELIEVE SAID APPLICANT, OR ANY PERSON OR CORPORATION, FROM LIABILITY FOR DAMAGES OR PERSONAL INJURY INCLUDING DEATH TO ANY PERSON OR FOR PROPERTY DAMAGE CAUSED TO THE SAID PLANT OR TO ANY OTHER PROPERTY. BY REASON OF THE SAID APPLICANT, OR ANY OTHER PERSON OR CORPORATION, HAVING RELIED UPON THE LOCATION AND MARKING OF FACILITIES BY KBYD.
 - IF THERE ARE ANY LIMITATIONS NOTED ON THE LOCATE REPORT AND/OR SITE SERVICES CHECKLIST, THE CLIENT ACCEPTING THIS LOCATE REPORT MUST INFORM ALL INVOLVED WITH THE PROJECT OF THE LIMITATION INCLUDING AND NOT LIMITED TO: ALL FIELD STAFF; PROJECT MANAGERS; THEIR CLIENT; AND THE PROPERTY OWNER OF THE SUBJECT PROPERTY. THE PROPERTY OWNER IS ULTIMATELY RESPONSIBLE FOR THEIR BURIED FACILITIES AND SHOULD HAVE THE FINAL DECISION IN HOW TO EXCAVATE NEAR THEIR BURIED FACILITIES IF THEY CANNOT BE ACCURATELY LOCATED AND MARKED. WHOEVER ACCEPTS THE LIMITATION CLAIMS RESPONSIBILITY IF A BURIED FACILITY IS DAMAGED AS A RESULT OF THE LIMITATION.
 - THE PRIVATE UTILITY LOCATE PREPARED BY KBYD IS FOR THE USE OF THE CLIENT. IF THE CLIENT PROVIDES THE LOCATE REPORT TO A SUB-CONTRACTOR FOR RELIANCE, THE SUB-CONTRACTOR MUST BE GIVEN A COPY OF THE LOCATE REPORT AND NOTIFIED OF ANY LIMITATIONS NOTED WITHIN THE LOCATE REPORT.

THE PERSON ACCEPTING THIS PRIVATE UTILITY LOCATE REPORT, AGREES THAT THEY FULLY UNDERSTAND ALL THE INFORMATION PRESENTED IN THE LOCATE REPORT, SITE SERVICES CHECKLIST (IF ANY), AND CLIENT COMPANY ACKNOWLEDGMENT / DISCLAIMER.

THE CLIENT WARRANTS THAT KBYD IS NOT LIABLE FOR ANY CLAIMS FOR DAMAGES TO ANY UNDERGROUND FACILITY WHERE KBYD WAS NOT NOTIFIED OF SUCH DAMAGE FORTHWITH, SUCH THAT KBYD CAN COMPLETE A DAMAGE INVESTIGATION TO PHYSICALLY VIEW ANY SUCH DAMAGED UNDERGROUND FACILITY WHETHER ANY SUCH DAMAGE MAY BE ATTRIBUTED TO ERRORS OR OMISSIONS COMMITTED BY KBYD IN PERFORMING THE WORK.

KBYD SHALL NOT BE LIABLE FOR ANY AMOUNT MORE THAN THE FEES PAID BY THE CLIENT TO KBYD FOR THE SERVICE ON ACCOUNT OF ANY LOSS, INJURY, DEATH, OR DAMAGE WHETHER RESULTING DIRECTLY OR INDIRECTLY TO A PERSON OR PROPERTY IRRESPECTIVE OF THE CAUSE OR ORIGIN OF SUCH LOSS, INJURY, DEATH OR DAMAGE INCLUDING, WITHOUT LIMITATION, LOSS, INJURY, DEATH OR DAMAGE ATTRIBUTABLE TO THE NEGLIGENCE OF KBYD, ITS EMPLOYEES AND AGENTS IN THE PERFORMANCE OR NON-PERFORMANCE OF THE SERVICE.

KNOW BEFORE YOU DIG LOCATES INC

PRIVATELY-OWNED UTILITY LOCATE CLIENT COMPANY ACKNOWLEDGEMENTS / DISCLAIMER

BY SIGNING OR RECEIVING AN EMAILED COPY OF THIS LOCATE REPORT, THE CLIENT HAS READ, ACKNOWLEDGES, AND AGREES TO THE FOLLOWING:

GEOPHYSICS DATA PRESENTATION

THE GEOPHYSICAL DATA WERE ACQUIRED AT THE STATION SPACING AND ON THE DATE AS SHOWN ON THE LOCATE REPORT.

THE INTERPRETATION OF GROUND PENETRATING RADAR (GPR) AND/OR EM61 DATA IS PRESENTED ON THE SKETCH FOR THIS LOCATE REPORT AND WITH PAINT MARKS IN THE WORK STUDY AREA.

THE GPR AND EM61 DATA ARE PRESENTED ALONG A SURVEY LINE, DISPLAYED FROM LEFT TO RIGHT. THE GPR DATA IS A REPRESENTATIVE IMAGE OF THE GPR SIGNAL AMPLITUDE AND IS NOT AN IMAGE OF THE SUBSURFACE. THE GPR SIGNAL PENETRATION DEPTH IS NOTED ON THE LOCATE REPORT. THE STANDARD EM61 CANNOT DETECT SINGLE OBJECTS AND DEPTHS MUCH GREATER THAN 3-4 METERS.

GEOPHYSICAL DATA RECORDED ON-SITE MAY BE RE-EXAMINED AFTER THE COMPLETION OF THE SURVEY AND A SUPPLEMENTAL REPORT WILL BE SENT IF COMPUTER ANALYZED DATA DIFFERS FROM THE FIELD TECHNICIANS INTERPRETATION.

GEOPHYSICS TECHNICAL LIMITATIONS

THE INTERPRETATION OF THE GEOPHYSICAL DATA OBTAINED DURING THE INVESTIGATION IS INTENDED FOR THE GUIDANCE OF THE CLIENT ONLY. SHOULD THIS INTERPRETATION OF THE DATA BE USED DURING ANY SUBSEQUENT PROGRAMS, THE USER MUST BE AWARE OF THE FOLLOWING INTERPRETIVE RESTRICTIONS:

THE CLIENT ACKNOWLEDGES THAT THE LAWS OF FUNDAMENTAL PHYSICS APPLY AND DO NOT ENABLE KNOW BEFORE YOU DIG LOCATES, INC. (KBYD) EQUIPMENT TO DETECT ALL BURIED FACILITIES, OBJECTS, FEATURES, AND STRUCTURES OR TO PROVIDE ALL COORDINATES OF THE POSITION THEREOF. PIPE, CABLE, CONDUIT, ANY BURIED FACILITY, OBJECTS, FEATURES OR STRUCTURES WHICH ARE NOT DETECTABLE (I.E. NOT "LOCATABLE") BECAUSE OF THE LAWS OF FUNDAMENTAL PHYSICS CANNOT BE LOCATED BY KBYD AND ARE NOT THE SUBJECT OF THE PROVISION OF THE "SERVICE" PURSUANT TO THIS CONTRACT.

THE "SERVICE" PROVIDED TO THIS CONTRACT IS THE LOCATION, LATEROALLY AND LONGITUDINALLY, OF UTILITIES, OBJECTS, FEATURES OR STRUCTURES AND THE SUBSEQUENT MARKING OF THE SITE ACCORDING TO THE STANDARD SUBSURFACE UTILITY LOCATING INDUSTRY PRACTICE. THE DEPTH AND/OR SIZE OF PIPE, CABLE, CONDUITS, UTILITIES, OBJECTS, FEATURES AND STRUCTURES IS RECORDED ONLY IF THE CLIENT HAS REQUESTED PRIOR TO THE START OF THE SURVEY.

A "DETECTABLE FEATURE" DEFINED BY THIS INVESTIGATION MAY CONSIST OF A CABLE, WIRE, PIPE, CONDUIT, STRUCTURE OR OTHER OBJECT CONTAINED WITHIN THE SUBSURFACE. DIFFERENTIATION BETWEEN THESE TYPES OF FEATURES IS NOT PROMISED NOR GUARANTEED. A FEATURE IS ONLY DETECTABLE IF THE SUBSURFACE ALLOWS THE GPR SIGNAL TO PROPAGATE DEEP ENOUGH TO DEFINE THE FEATURE. GPR PENETRATION INTO THE SUBSURFACE VARIES DEPENDING UPON THE SUBSURFACE CONDITIONS AND IS NOT CONTROLLED BY THE RADAR EQUIPMENT OR THE TECHNICIAN'S ABILITY. LIMITED PENETRATION IS CAUSED BY HIGH-CONDUCTIVITY MATERIALS SUCH AS CLAY AND SILT SOILS AND SOLIDS THAT ARE SALT CONTAMINATED. PERFORMANCE IS ALSO LIMITED BY SIGNAL SCATTERING IN HETEROGENEOUS CONDITIONS (E.G. ROCKY SOILS, LARGE TREE ROOTS, CONSTRUCTION DEBRIS ETC.). SNOW, DISSOLVED SOLIDS, MOISTURE, VOIDS, AND FEATURES HAVING A SIGNIFICANT ELECTROMAGNETIC VARIANCE.

ACCURACY OF INFERRED BURIED DETECTABLE FEATURES WILL VARY DUE TO SUBSURFACE SOIL CONDITIONS AND SURFACE CONDITIONS (I.E. LOOSE DIRT, ICE, SNOW, TALL GRASS, AND WATER).

KBYD IS NOT LIABLE FOR DAMAGES, IF ANY, RESULTING FROM PHYSICAL EXPOSURE OF ANY "DETECTABLE FEATURES" BY THE CLIENT, OR THEIR REPRESENTATIVES, OR THEIR SUB-CONTRACTORS, OR ANY OTHER PERSON, OR CORPORATION, BASED ON THE INFORMATION PROVIDED.

AREAS CONSIDERED TO BE INACCESSIBLE (AN "INACCESSIBLE AREA") FOR THE SERVICE INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: THOSE OF PHYSICALLY RESTRICTED ACCESS; THOSE COVERED BY A STRUCTURE OR OBJECT (I.E. BUILDING WALLS, VEHICLES, EQUIPMENT, DEBRIS, STOCKPILES OF MATERIAL OR SNOW ETC.); THOSE COVERED BY OPEN WATER; THOSE COVERED BY WOODS OR VEGETATION TOO THICK TO PERMIT EASY WALKING; THOSE WITH SURFACE TERRAIN SLOPES STEEPER THAN 1:3; AND, THOSE WHERE THE SAFETY OF THE TECHNICIAN IS JEOPARDIZED (I.E. UNSTABLE FOOTING, ENVIRONMENTAL HAZARDS, UNCONTROLLED ROADS, ETC.). THE JUDGMENT OF THE KBYD TECHNICIAN WILL PREVAIL ON ACCESSIBILITY DECISIONS.

IT IS THE RESPONSIBILITY OF THE CLIENT TO PROVIDE DIRECT AND SIMPLE ACCESS FREE FROM SURFACE OBJECTS TO ANY AND ALL SURVEY AREAS. KBYD ACCEPTS NO RESPONSIBILITY FOR SURVEYING IN ANY AREAS WHERE THE CLIENT DOES NOT PROVIDE ACCESS AND/OR APPROPRIATE WORKPLACE SAFETY MEASURES. AREAS CONSIDERED TO BE INACCESSIBLE FOR SCANNING AND MARKING, ASIDE FROM RESTRICTED ACCESS, INCLUDE THE FOLLOWING, BUT NOT LIMITED TO: WITHIN 36 INCHES OF A STRUCTURE OR OBJECT (I.E. WALLS, VEHICLES, EQUIPMENT, DEBRIS, STOCKPILES OF MATERIALS, ETC.).

THE EM61 AND/OR EM31 RESPONSES OF TARGETS MAY BE DETECTED ONLY IF THEY ARE GREATER THAN THE BACKGROUND NOISE LEVELS. GEOPHYSICAL NOISE (NOT SENSOR SENSITIVITY) IS THEREFORE THE LIMITING FACTOR IN DETERMINING THRESHOLDS AND DETECTION DEPTHS.

GEOPHYSICS LIMITS OF KNOW BEFORE YOU DIG LOCATES, INC. LIABILITY

ANY INFORMATION PROVIDED BY KBYD REGARDING THE LOCATION OF BURIED FACILITIES BY GPR AND/OR EM61 AND/OR EM31, DOES NOT SUBSTITUTE FOR A FULL PRIVATE UTILITY LOCATE PERFORMED BY KBYD. THE SERVICE IS PROVIDED TO ASSIST WITH EXCAVATION PLANNING ONLY. THE CLIENT IS ALWAYS RESPONSIBLE FOR OBTAINING SANCTIONED LOCATES FROM THE OWNERS OF UNDERGROUND PLANT SUCH AS ELECTRIC CABLES, NATURAL GAS, ANY TYPE OF PIPELINE, TELECOMMUNICATIONS, CABLE TV, FIBRE-OPTIC CABLES, WATER, SEWER, OIL, STEAM, ETC. THE CLIENT MUST CONTACT THE UTILITY OWNERS DIRECTLY, OR THEIR CALL CENTRE, TO FACILITATE THESE LOCATES.

KBYD MARKING OF UNDERGROUND FEATURES IS ONLY FOR THE CONVENIENCE OF THE CLIENT, AND THIS DOES NOT RELIEVE THE CLIENT, OR ANY OTHER PERSON, OR CORPORATION, FROM LIABILITY FOR DAMAGES FOR PERSON INJURY INCLUDING DEATH, OR FOR PROPERTY DAMAGE OR LIABILITY CAUSED TO OR FROM ANY BURIED FACILITY, WITHIN THE AREA ON THE PROPERTY WHERE THE BURIED FACILITY AND/OR CLEARANCE WAS MARKED, OR ANY OTHER PROPERTY, BY REASON OF THE CLIENT, ITS REPRESENTATIVES, OR ANY OTHER PERSON, OR CORPORATION HAVING RELIED UPON THE SURFACE MARKING PROVIDED BY KBYD.

KBYD IS NOT LIABLE FOR DAMAGES RESULTING FROM PHYSICAL EXPOSURE OF ANY UNDERGROUND FEATURES BY THE CLIENT, ITS REPRESENTATIVES, THEIR SUB-CONTRACTORS OR ANY OTHER PERSON OR CORPORATION.

THE SERVICE COMPLETED BY KBYD IS BASED ON INFORMATION PROVIDED BY THE CLIENT AT OR PRIOR TO THE EARLIER OF THE TIME WHEN THE SERVICE IS DESCRIBED IN THIS CONTRACT OR THE PERFORMANCE OF THE SERVICE. THE SERVICE PROVIDED BY KBYD REGARDING THE LOCATION OF ANY BURIED FACILITY, OBJECT OR STRUCTURE, IS ON A BEST EFFORT AND BEST PRACTICES BASIS.

A RE-MARK OF SURFICIAL MARKINGS PLACED ON THE SITE BY KBYD MUST BE OBTAINED PRIOR TO ANY EXCAVATION IF:

- MARKINGS BECOME UNCLEAR, DISAPPEAR, ARE DISTURBED OR DISPLACED;
- THE SKETCH AND SITE MARKINGS DO NOT COINCIDE;
- THE WORK LOCATION HAS CHANGED;
- IF ANYTHING OCCURS WHICH MAY INDICATE THAT A NEW OR BETTER OR DIFFERENT LOCATE SERVICE IS NEEDED.

IF THE CLIENT EXCAVATES OUTSIDE THE LIMIT OF LOCATE AREA, KBYD ACCEPTS NO RESPONSIBILITY OR LIABILITY.

THE CLIENT WARRANTS THAT KBYD IS NOT LIABLE FOR ANY CLAIMS FOR DAMAGES TO ANY BURIED FACILITY WHERE KBYD WAS NOT NOTIFIED OF SUCH DAMAGE FORTHWITH SUCH THAT KBYD CAN COMPLETE A DAMAGE INVESTIGATION TO PHYSICALLY VIEW ANY SUCH DAMAGED BURIED FACILITY WHETHER OR NOT ANY SUCH DAMAGE MAY BE ATTRIBUTED TO ERRORS OR OMISSIONS COMMITTED BY KBYD IN PERFORMING THE WORK.

KBYD SHALL NOT BE HELD LIABLE FOR ANY AMOUNT MORE THAN THE FEES PAID BY THE CLIENT TO KBYD FOR THE SERVICE ON ACCOUNT OF ANY LOSS, INJURY, DEATH OR DAMAGE WHETHER RESULTING DIRECTLY OR INDIRECTLY TO A PERSON OR PROPERTY IRRESPECTIVE OF THE CAUSE OR ORIGIN OF SUCH LOSS, INJURY, DEATH OR DAMAGE.



Appendix D
Curriculum Vitae



MEAGHAN HALIGOWSKI, M.Env.Sc.

Project Coordinator

SUMMARY OF PROFESSIONAL EXPERIENCE

- 2023 - Present Project Coordinator. Cambium Inc.
Whitby, ON, Canada
- 2021 - 2023 Environmental Technologist. Cambium Inc.
Oshawa, ON, Canada
Miss Haligowski performs field sampling and testing at residential, commercial, and industrial sites. She is responsible for conducting Environmental Site Assessments, following both CSA Phase I and Phase II site assessments, as well as regulatory Phase One and Phase Twos in accordance with O. Reg. 153/04. Miss Haligowski supervises third-party contractors to collect soil samples, performing on-site characterization and sample screenings using an RKI Eagle 2 multi-gas detector to aid in sample selection. She also conducts excess soil sampling in accordance with O. Reg. 406/15. Miss Haligowski collects surface water samples and groundwater samples using low-flow sampling techniques and stabilizing parameters prior to sampling using a Horiba multi-parameter water quality meter, or a YSI multi-meter. Miss Haligowski also performs QA/QC of sample data, as well as writing reports for various projects.
- 2018 - 2021 Environmental Scientist. Arcadis Canada Inc.
Port Hope, ON, Canada
Miss Haligowski conducted radiological surveys including interior and exterior characterization surveys using Ludlum instruments, as well as delineation surveys on residential and commercial properties. Miss Haligowski characterized soil samples in a laboratory setting, testing for environmental contaminants of concern using an XRF machine, before selecting samples to be sent to a third-party lab for analysis. Miss Haligowski completed QA/QC of figures and tables, as well as compiling and reviewing final reports. She was also tasked with holding twice-weekly client meetings to co-ordinate report deadlines, co-ordinating co-workers to meet reporting deadlines, and presenting month end numbers to the client.

EDUCATION & TRAINING

- 2024 HAZWOPER (Hazardous Waste Operations and Emergency Response) – ACUTE
- 2021 WHMIS 2015
- 2021 Standard First Aid CPR-C & AED - St. John Ambulance
Ajax, ON, Canada
- 2018 Radiation Protection Training, Arcadis Canada Inc.
Port Hope, ON, Canada
- 2018 Master's of Environmental Science, University of Toronto
Toronto, ON, Canada



2017

Bachelor's of Environmental Science, University of Manitoba
Winnipeg, MB, Canada

PROFESSIONAL AREA OF FOCUS

PHASE I/ONE AND II/TWO ENVIRONMENTAL SITE ASSESSMENTS – ONTARIO

Since 2021, conducted field investigations and coordination tasks for multiple Phase I/One and II/Two ESAs (including record of site condition sites). Work was completed throughout Ontario under Canadian Standards Association (CSA) Standard Z768-01 requirements, and O.Reg. 153/04 requirements. For Phase I/One ESA projects, reviewed detailed historical document including ERIS reports, fire insurance plans, insurance inspection reports, city directories, and aerial images to identify environmental concerns associated with current and historical activities at the Site and surrounding properties. For Phase II/Two ESA projects, prepared health and safety documents, coordinated sub-contractors including drillers and private utility locators, reviewed utility locates, completed field oversight, and soil and groundwater sampling. Drafted numerous reports at the direction of the Project Managers and QP_{ESA}.

PHAI SMALL SCALE SITES SURVEY – PORT HOPE, ONTARIO

Miss Haligowski was involved in varying capacities with the Port Hope SSSS for over three and a half years. She completed radon monitoring deployment and retrieval, interior and exterior characterization surveys, interior delineation surveys, lab analysis and characterization of soil samples, QA/QC of survey data, report writing and review, and coordination of report submission and review. Miss Haligowski was the lead technician, training new staff on health and safety practices and standard operating procedures. She was responsible for leading interior delineation surveys, sometimes including drilling with a hand-drill and concrete core bit and using an AMS hand sampler to retrieve samples. Miss Haligowski coordinated report deadlines internally and with the client through hosting twice-weekly meetings to discuss survey details and target deadline dates. Furthermore, she organized monthly client meetings to discuss month end numbers and future goals.



DERIK K. TAM, P.Eng.

Project Manager

SUMMARY OF PROFESSIONAL EXPERIENCE

- 2023 - Present Project Manager. Cambium Inc.
Oshawa, Ontario, Canada
Responsible for managing various environmental investigations including budgeting, coordination of project staff, sub-consultants and contractors, liaison with clients and regulators, data analysis and interpretation, maintaining overall data quality objectives, report preparation, mentorship, training, ensure compliance with provincial and municipal environmental regulations and technical review of reports. Field of expertise includes environmental site assessments for transactional due diligence, brownfield redevelopment, and development activities, soil and groundwater remediation, excess soil management and risk assessment including soil vapour assessments.
- 2020 - 2023 Project Manager. Pinchin Ltd.
Mississauga, Ontario, Canada
Responsibilities included project management related to Phase I and II Environmental Site Assessments (ESAs) for transactional due diligence, Phase One and Two ESAs to support Record of Site Condition (RSC) filings and development applications, excess soil management, underground storage tank (UST) removals, soil vapour assessments and soil, groundwater, drinking water, sump testing to support insurance services. Additional responsibilities included maintaining quarterly quality assurance objectives.
- 2014 - 2020 Manager of Technical Services & Project Manager (succeeding Environmental Consultant).
RiskCheck Environmental Ltd.
Toronto, Ontario, Canada
Responsibilities included project management and field component related to Phase I and II ESAs for transactional due diligence, Phase One and Two ESAs to support RSC filings and development applications or municipal infrastructure projects, UST removals, soil and groundwater remediation and soil vapour assessments. Additional responsibilities included the assessment of building and management activities and conditions for properties in Ontario, Alberta, British Columbia and Nova Scotia in relation to federal, provincial and municipal environmental compliance regulations and by-laws. Further, reviewed and developed standard operating procedures for environmental investigations, updated report templates, developed training matrices for junior technical staff, quality assurance and control and developed administrative tools like budget spreadsheets.
- 2009 - 2014 Project Manager (succeeding Project Technician). S2S Environmental Ltd.
Pickering, Ontario, Canada
Responsibilities included project management and field component related to Phase I and II ESAs for transactional due diligence, Phase One and Two ESAs to support RSC filings and development applications, UST removals, indoor air quality assessments and soil and groundwater remediation. Additional responsibilities included maintaining data quality objectives.



2008 – 2009 Project Technician. SLR Consulting (Canada) Ltd.
Mississauga, Ontario, Canada
Responsibilities included field work related to Phase I and II ESAs, UST removals and soil and groundwater remediation.

PROFESSIONAL ASSOCIATIONS

- Professional Engineers Ontario

EDUCATION & TRAINING

1998 Honours Bachelor of Science in Engineering. University of Guelph
Guelph, Ontario, Canada

2019 Air Emissions Management. EPIC Educational Program Innovations Centre.
Mississauga, Ontario, Canada

2019 Hydrocarbon Forensics Part III. Bureau Veritas Laboratories
Online webinar. Mississauga, Ontario, Canada

2015 Human Health Risk Assessment. University of Victoria
Online. Victoria, British Columbia, Canada

2015 Environmental and Occupational Epidemiology. University of Victoria
Online. Victoria, British Columbia, Canada

LANGUAGES

- French (conversational)

PROFESSIONAL AREA OF FOCUS

ENVIRONMENTAL SITE ASSESSMENTS TO SUPPORT BUS RAPID TRANSIT PROJECTS – YORK REGION (MARKHAM, VAUGHAN AND RICHMOND HILL), ONTARIO

Project Manager overseeing field teams to complete Phase I and II ESAs at various properties to support the region's acquisition of properties to expand the roadway right-of-way and allow for the development of bus rapid transit infrastructure. The investigation activities were completed over three separate contracts with one company between 2012 and 2014 in which a portion of the contract included additional investigations on the roadway right-of-way to assess the potential for construction impacts on region owned land and one supplemental contract for



five additional properties with a second company in approximately 2018. These investigations included the use of traffic control and management according to the Ministry of Transportation Book 7 and involved road permits with the Ministry of Transportation and/or Region of York.

CONTAMINATED SITE INVESTIGATIONS AND REMEDIATION – LONDON, ONTARIO

Project Manager (including field component) overseeing initial investigation (groundwater sampling program), Phase II ESA and Supplemental Phase II ESAs along with the development of a remedial action plan at a former drycleaning facility. A portion of the investigation was completed after hours and required coordination with contractors and security as the facility was an operating shopping centre. The remediation planning involved obtaining multiple contractor estimates, bid meetings, bid specifications and recommendations for the Client. In addition, the Client had requested that remediation infrastructure be located on the roof and the contractor estimates included consultations with structural engineers.

ENVIRONMENTAL SITE ASSESSMENTS AND REMEDIATION TO SUPPORT A RECORD OF SITE CONDITION – BELLEVILLE, ONTARIO

Project Manager (including field component) overseeing initial soil sampling after the Client had an underground spill containment UST removed from the Site in approximately 2009/2010. Additional Phase One and Two ESAs and soil and groundwater remediation was completed between 2010 and 2014 which included advancing 66 boreholes of which approximately 21 were completed as monitoring wells to assess the soil and groundwater condition of the site in relation to the cessation of manufacturing activities at a carpet manufacturing plant. The contaminants of concern requiring remediation were petroleum hydrocarbons, bis-(2-ethylhexyl)-phthalate and diethyl phthalate.

UNDERGROUND STORAGE TANK REMOVAL AND ENVIRONMENTAL SITE ASSESSMENTS – TORONTO, ONTARIO

Project Manager overseeing initial Phase I and II ESAs. The initial work included investigating a potential UST at the Site and its removal along with multiple delineation phases including two separate off-site drilling phases on two residential properties adjacent to the Site. In addition, the investigations required communication with the Ontario Ministry of the Environment, Conservation and Parks since a fuel UST was decommissioned from the Site and off-Site impacts were confirmed.

PHASE I ESA, PHASE II ESA AND SOIL VAPOUR ASSESSMENT – TORONTO, ONTARIO

Project Manager overseeing environmental site assessment activities for a property transaction in Toronto, Ontario. A Phase II ESA was recommended based on potential environmental concerns associated with historical activities



at the Site and on surrounding properties. A soil vapour assessment was recommended due to physical and health and safety limitations to determine whether there is a concern for the current land use and configuration.

EXCESS SOIL MANAGEMENT – ONTARIO

Conducted multiple soil sampling programs according to the specifications in the Excess Soil Rules document and the Ontario Regulation 406/19 at various properties on behalf of property management companies and construction companies. Investigations were completed on greenfield sites where only historical agricultural activities were considered as potential contaminating activities.