Factual Hydrogeological Letter – 46 Eatonville Road, Prince Edward County

December 10, 2025

Prepared for:
Willowlee Sod Farms

Cambium Reference: 20382-001

CAMBIUM INC.

866.217.7900

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1.0 Introduction

Cambium Inc. (Cambium) was retained by Willowlee Sod Farms (the Client) to complete a hydrogeological assessment for the property located at 46 Eatonville Road, in Prince Edward County, Ontario (the Site). The regional location of the property is illustrated in Figure 1 and a Site plan is provided in Figure 2.

Cambium understands that the Client is seeking to sever the dwelling from this property and consolidate the retained lands with neighbouring properties that are farmed by Willowlee. A new lot is not technically being created. As such, a scoped hydrogeological study was conducted to demonstrate that water services can be provided for the severed/consolidated lot.

The total site area is approximately 7.9 Ha, with 0.8 Ha of that being the severed parcel, and the remaining 7.1 Ha indented to be consolidated with the surrounding farmland, with no new lot being created.

To characterize the subsurface condition on the Site, a test pit investigation was completed to identify and characterize native soils and bedrock at the Site.

The water supply assessment included the installation and hydraulic testing of two dug wells and water quality testing of the aquifer to determine the sustainability of on-site groundwater resources.

This letter also references a supplemental workplan prepared by Galloway Greer following the completion of Cambium's investigation. Further details are provided in Section 5.0.

This report provides the results of the hydrogeological assessment and should be read in conjunction with the "Standard Limitations" in Section 9.0, which forms an integral part of this document. The reader's attention is specifically drawn to this information, as it is essential for the proper use and interpretation of this report. The data, interpretations, and recommendations contained in this report pertain to a specific project as described in the report and are not applicable to any other project or site location. If the project is modified in concept, location, or elevation, or if the project is not initiated within eighteen months of the

date of the report, Cambium should be given an opportunity to confirm that the recommendations in this report are still valid.

2.0 Physical Setting

2.1 Physiography

The Site is located in the physiographic region known as the Prince Edward Peninsula. The peninsula is comprised of a low plateau which projects into the eastern part of Lake Ontario. The surface of the peninsula grades towards the southwest. A number of deep valleys form long bays or inlets along the shoreline and the region is almost separated from adjacent land to the north and east by the Bay of Quinte. The peninsula is underlain by Lindsay formation bedrock (primarily limestone), with the exception of a small hill of Precambrian granite near Ameliasburg. More than half of the region has shallow soils with thickness less than 30 cm. In the remaining half, overburden is present whish is described as clay or limestone gravel (Hillier and Hallowell townships), loam and clay loam till (Ameliasburgh), drift with drumlins (Sophiasburgh and Hallowell townships), or sandy soils with sand dunes (between East Lake and West Lake southwest of Picton). (Chapman, L.J. and D.F. Putnam, 1984)

2.2 Overburden Geology

According to Miscellaneous Release – Data 128 from the Ontario Geological Survey (2010) the predominant overburden of the Site consists of till described as stone-poor, sandy silt to silty sand.

2.3 Bedrock Geology

According to Miscellaneous Release – Data 219 from the Ontario Geological Survey (2007), the bedrock in the area of the Site consists of the Middle Ordovician Simcoe Group. The Simcoe Group consists of four formations that dip gently towards the southwest: Gull River Formation, Bobcaygeon Formation, Verulam Formation and the Lindsay Formation from oldest to youngest.The bedrock of the Site consists of the Verulam Formation. The Verulam Formation is described as thin-bedded, interbedded limestone, shaly limestone, and shale (Ontario Geological Survey, 1989). It is highly fossiliferous and may disintegrate easily (Chapman, L.J. and D.F. Putnam, 1984).

2.4 Vulnerable and Regulated Areas

The Site is situated within the Quinte Source Protection Area, under jurisdiction of the Quinte Conservation Authority, as per the Ministry of the Environment, Conservation and Parks (Ministry) Source Water Protection Information Atlas (SPIA) (MECP, 2022). The Site is within the following areas:

- Highly Vulnerable Aquifer (HVA) with a vulnerability score of 6

HVAs are aquifers that are more sensitive to contamination as a result of the proximity to surface (shallow aquifers). By default, all HVA's have a vulnerability score of 6 because they are more sensitive to contamination.

Based on test pit results (Section 3.0), the soils at the Site are predominantly sandy silt, silty sand, or clayey sand, with top of presumed weathered bedrock zone at approximately 1.6 to 1.9 meters below ground surface (mbgs). The HVA designation is therefore applicable to the Site.

The proposed low density residential development is not anticipated to impact the potable groundwater supply, provided best management practices are employed such as safe handling and storage of domestic waste and chemicals, and inspection and maintenance of septic systems.

A review of the Ministry of Natural Resources and Forestry's (MNRF) Natural Heritage System database indicates the Site is not located within any Areas of Natural and Scientific Interest (ANSI), (MNRF, 2022).

The Site does not fall under a regulated area, as per the Quinte Conservation Authority (QCA) and per Ont. Reg. 41/24 (Prohibited Activities, Exemptions and Permits).

The SPIA, MNRF, and QCA mapping is attached in Appendix A.

3.0 Subsurface Investigation

Cambium staff completed a test pit investigation on May 31, 2024. The general lithology at the Site is characterized as 0.4 to 0.8 m sandy silt underlain by 1.1 to 1.5 m clayey silts and sand or clayey sand. Test pit practical refusal occurred at depths ranging from 1.58 to 1.85 mbgs. Based on the results of the MECP Well Records Assessment (discussed in more detail in Section 4.1.1), refusal is not expected to be associated with encountering the bedrock surface. Bedrock is expected to be located at depths in the range of 5 to 10 metres below ground surface. Test pit locations are shown in Figure 4 and test pit logs are included in Appendix B.

Physical laboratory testing which included grain size distribution analysis, was completed on two soil samples to obtain percolation rate estimates and confirm textural classifications identified during field logging. Analysis results are based on the Unified Soil Classification System scale. A summary of results is provided in Table 1. Complete laboratory analysis reports are provided in Appendix C.

Table 1 Grain Size Distribution Analysis Results

Test Pit	Depth (mbgs)	Description	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	T-time (min/cm)
TP102-24 (GS2)	0.4 – 1.6	Sandy Silt some Clay some Gravel	14	31	38	17	35
TP104-24 (GS2)	0.6 – 1.7	Gravelly Sandy Silt some Clay	24	24	32	18	35

4.0 Groundwater Investigation

The results obtained for the water supply assessment are discussed in the following subsections.

4.1 Well Inventory Survey

4.1.1 MECP Well Records Assessment

Cambium accessed the MECP Water Well Information System (WWIS) to review water well records within 500 m of the Site (MECP, 2023b). A total of six records were identified, three of which describe wells installed into bedrock and three of which describe wells installed into overburden. The records identified one abandoned water supply well and the remaining wells were all water supply wells. The overburden lithology for all records was described as clay and gravel. The bedrock lithology for all records were described as limestone overlain by clay or gravel. The locations of wells records identified within 500 m of the Site are illustrated Figure 3. A summary of water well information, including total depth, static water level, and recommended pumping rate, is presented in Table 2. Further details are provided Appendix D.

Table 2 MECP Water Well Information Summary

		Depth (mbgs)	Depth Water Found (mbgs)	Static Water Level (mbgs)	Recommended Pumping Rate (L/min)
Overburden Wells Count =3	Minimum	8.2	3.5	2.0	23 (1 well)
	Maximum	9.8	9.8	3.0	
	Average	8.9	5.8	2.0	
Bedrock Wells Count = 3	Minimum	23.8	8.2	2.0	9
	Maximum	33.2	25.9	2.0	9
	Average	27.0	16.4	2.0	9

4.1.2 Door-to-Door Well Survey

A door-to-door survey of all accessible properties within 500 m of the property was conducted by Cambium staff on May 31st, 2024, to confirm details in the public record and to identify any wells not included in the MECP records assessment. Four properties were visited, and in-person interviews were conducted with available homeowners regarding the condition and

details of their water supply well(s), including the method of construction, water level, pump intake, well, and water level depths, water use, and general water quality and well yield.

If the homeowner was unavailable, a letter was left in the mailbox with a pre-paid return envelope. The letter explained the nature of the proposed project and the survey and provided direct contact information for Cambium's project manager.

Details and responses from the well use survey are provided in Appendix D. Two homeowners expressed willingness to have their wells monitored during second pumping test, which is discussed in more detail in Section 4.3. The well located at 6 Eatonville Rd was included in the monitoring network for the second pumping test, and the well located at 644 County Rd 23 was deemed inaccessible and not included in the monitoring network. A water well record could not be identified for the well located at 6 Eatonville Rd, but the well located at 644 County Rd 23 is expected to be associated with water well record ID: 5303986. A pre-existing well located on the Site was included in the monitoring network during the pumping test. All wells included in the monitoring network are detailed in the following section.

4.2 Test and Monitoring Well Details

Two dug wells were installed, one on the lot to be severed (TW2) and on the adjacent parcel (TW1). Pre-existing wells utilized for the monitoring network were located on the lot to be severed (MW1) and at 6 Eatonville Rd (MW2). Locations of the wells are provided in Figure 4.

4.3 Hydraulic Pumping Tests

Initial 6-hr pumping tests were completed at TW1 and TW2 on June 5th and June 6th, 2024, respectively. For both tests, a pumping rate of 15 L/min was utilized over a period of six hours, which provided a total discharge volume of 5,400 L, which exceeds D-5-5 guidelines for water supply for a three-bedroom residential dwelling. However, water level recovery in both cases was insufficient, as the requirement of 95% recovery within 24-hrs was not met.

A third pumping test was subsequently completed at TW2 on September 12, 2024, to assess whether low level stress to the well would improve the recovery response. For this test, a pumping rate of approximately 7 L/min was utilized over a period of approximately five hours.

Yield and recovery results were similar to the initial pumping test at this well, and was insufficient to satisfy MECP D-5-5 guidelines.

A fourth pumping test was completed at TW1 on June 13, 2025. For this test, the well was pumped at a high rate prior to the test, to assess whether high level stress to the well would improve the recovery response. The results from this work were similar to the previous tests.

Graphs from all four pumping tests are provided in Appendix E.

4.4 Groundwater Quality Analysis

Raw, unfiltered groundwater samples were additionally collected from TW1 and TW2 during the last 30 minutes of their respective initial pumping tests. All samples were submitted for analysis of general organic and inorganic chemistry to Bureau Veritas in Ottawa, Ontario, which is accredited by the Canadian Association for Laboratory Accreditation Inc. Samples were stored at a temperature between 0 and 10 °C prior to and during transport.

Water quality results were compared against the Ontario Drinking Water Quality Standards (ODWQS) criteria for parameters outlined in Guideline D-5-5 Tables 1, 2, and 3 (Ministry of the Environment, 1996a). A complete summary of water quality results and certificates of lab analyses are provided in Appendix F. Parameters reported at concentrations exceeding ODWQS criteria are outlined in Table 3.

Table 3 Summary of ODWQS Exceedances – Aesthetic and Operational Objectives

Parameter	Units	ODWQS Criteria	TW1	TW2
			06/06/2024	06/06/2024
TDS	mg/L	500	370	**1,100**
Dissolved Organic Carbon	mg/L	5	1.4	**7.1**
Hardness (as $CaCO_3$)	mg/L	80-100	**210**	**540**
Alkalinity	mg/L	30-500	270	**610**
Manganese	mg/L	0.05	0.043	**0.086**

Concentrations of all measured parameters were within ODWQS guidelines for health-based parameters including bacteria and nitrate. Total dissolved solids (TDS), dissolved organic carbon, and manganese were reported in excess of ODWQS aesthetic objectives for samples

collected from TW2, and hardness, alkalinity, exceeded the ODWQS operational objectives. Only hardness exceeded the ODWQS aesthetic objectives in TW1. Exceedances and treatment options are discussed in more detail in the following sections.

4.4.1 Hardness

The hardness levels in both TW1 and TW2 exceeded the ODWQS operational objective of 80-100 mg/L as $CaCO_3$. Water with hardness levels in excess of 100 mg/L as $CaCO_3$ can be softened for residential/domestic use. MECP Procedure D-5-5, Note 8, states that water of more than 300 mg/L is considered "very hard", and that water with hardness "in excess of 500 mg/L are unacceptable for most domestic purposes". It should be noted that there is no upper treatable limit for harness in accordance with MECP Procedure D-5-5.

4.4.2 Alkalinity

The alkalinity levels in TW2 exceeded the ODWQS operational objective of 30 to 500 mg/L. This operational objective is related to drinking water systems that are coagulant-treated, and is not expected to be relevant for this study. MECP Procedure D-5-5, Table 3 lists Alkalinity as a useful analytical parameter, but does not list a ODWQS objective, or a maximum concentration considered reasonably treatable (MACCT).

4.4.3 Total Dissolved Solids

The TDS values for TW2 was reported to be 1,100 mg/L, which exceeds the ODWQS aesthetic objective of 500 mg/L. As per Health Canada ((Health Canada, 1991) TDS concentrations between 600 and 900 mg/L are considered "fair". At concentrations greater than "1,200 mg/L", palatability of drinking water is "unacceptable".

As the water is below 1,200 mg/L, the palatability of the water is expected to be palatable.

4.4.4 Dissolved Organic Carbon

Dissolved Organic Carbon (DOC) concentrations in TW2 exceeded the ODWQS aesthetic objective of 5.0 mg/L, but is below the MECP D-5-5 Procedure MACCT of 10.0 mg/L. Carbon filter treatemne systems are effective at reducing DOC concentrations.

4.4.5 Manganese

Manganese concentrations in TW2 exceeded the ODWQS aesthetic objective of 0.05 mg/L, but is below the MECP D-5-5 Procedure MACCT of 1.0 mg/L. Water softeners or manganese greensand filters are effective treatment measures for reducing manganese concentrations.

4.4.6 Sodium

Although sodium concentrations measured in TW1 and TW2 (56 mg/L and 140 mg/L, respectively) are below the ODWQS aesthetic guideline (200 mg/L), they are greater than the recommended maximum concentration for individuals on sodium restricted diets (20 mg/L). As such, it is recommended that warning clauses be registered on title for each severance lots to notify future residents who may be subject to sodium restricted diets. The clauses should also include a recommendation that a separate tap, which by-passes any installed water softener, be installed to supply un-softened drinking water.

5.0 Document Review

A technical memorandum completed by Greer Galloway titled: "Memo regarding Well Yield Test Supporting Hydrogeology Study by Cambium Inc. for the Property Located at 46 Eatonville Road in Prince Edward County", dated November 20, 2025 (Greer Galloway - Charles Mitz, 2025), was reviewed. The result of the study is summarized below, and the memorandum is located in Appendix G.

The memo emphasizes that the planning context for this project has shifted: no new lot will be created. Instead, the application involves severing a surplus farm dwelling from the agricultural lands. Consequently, the objective of this investigation is not to confirm whether the water supply at the Site is fully adequate, but rather to assess whether reducing the size of the existing residential lot (i.e., the surplus farm lot) would impair its ability to obtain a reliable water supply.

A pumping test was completed by Greer Galloway at TW2 to conduct a water quantity assessment, TW2 was pumped at a rate of approximately 108 L/min for 167 minutes, corresponding to a total pumped volume of around 18,000 litres, and a drawdown of 3.23 meters. The water level recovery was monitored over 8 days, but the water level recovery 'plateaued' after 3 days. Over the first 3 days, the water level recovered approximately 0.83 meters, equivalent to approximately 4,000 ± 5% litres of water based on the pumping test drawdown data, or between 1,270 and 1400 L/day.

Based on the water level recovery data, it was interpretated that the well can supply between 1,270 to 1,400 L/day. The memo notes that the pumping test was conducted under drought conditions, indicating that the well is likely to yield a greater supply during periods of higher groundwater recharge.

Based on the results from the Greer Galloway Report, the well does not provide sufficient yields to create a new lot, in accordance with MECP Procedure D-5-5. However, it is stated in the memo that the well yield is likely sufficient, though marginal, for regular residential use. Augmented storage and registration on the title regarding limited well yield and need for water treatment is recommended.

6.0 Conclusions and Recommendations

The Site is located on the Prince Edward Peninsula, characterized by shallow soils over limestone bedrock, with overburden consisting mainly of sandy silt till and bedrock from the Verulam Formation. The site lies within a Highly Vulnerable Aquifer zone, requiring best management practices to protect groundwater quality

The subsurface investigation at the Site identified stratigraphy of 0.4–0.8 m sandy silt overlying 1.1–1.5 m clayey silts and sand, with refusal at 1.58–1.85 m below ground surface, interpreted as weathered bedrock.

Multiple pumping tests were completed by Cambium at TW1 and TW2 on Site, all of which displayed insufficient water quantity to support a new lot creation in accordance with MECP Procedure D-5-5.

Water quality analysis completed by Cambium at TW1 and TW2 indicated compliance with ODWQS health-based standards, but aesthetic exceedances for TDS, and manganese, and operational exceedances for hardness and alkalinity were reported.

Additionally, sodium levels were greater than the recommended maximum concentration for individuals on sodium restricted diets (20 mg/L). As such, it is recommended that warning clauses be registered on title for each severance lots to notify future residents who may be subject to sodium restricted diets. The clauses should also include a recommendation that a separate tap, which by-passes any installed water softener, be installed to supply un-softened drinking water.

The memo completed by Greer Galloway (Greer Galloway - Charles Mitz, 2025) clarifies that the planning context has shifted for this application: no new lot will be created, only a surplus farm dwelling will be severed and consolidated. The pumping test at TW2 showed a yield of approximately 1,270–1,400 L/day under drought conditions, which is insufficient for a new lot under MECP D-5-5 guidelines, but likely adequate for residential use with augmented storage. Greer Galloway recommendations include installing additional storage and registering title clauses about limited yield and water treatment needs, and notice of sodium levels being in excess of the maximum recommended concentration for individuals on sodium restricted diets.

7.0 Closing

We trust that the information in this submission meets your current requirements. If you have any questions regarding the contents of this report, please contact the undersigned.

Respectfully submitted,

Cambium Inc.

DS

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BRENT A. REDMOND
PRACTISING MEMBER
3819
ONTARIO

Signed by:
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2025-12-10

Brent Redmond, P.Geo., M.A.Sc.
Hydrogeologist, Project Manager

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8.0 References

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9.0 Standard Limitations

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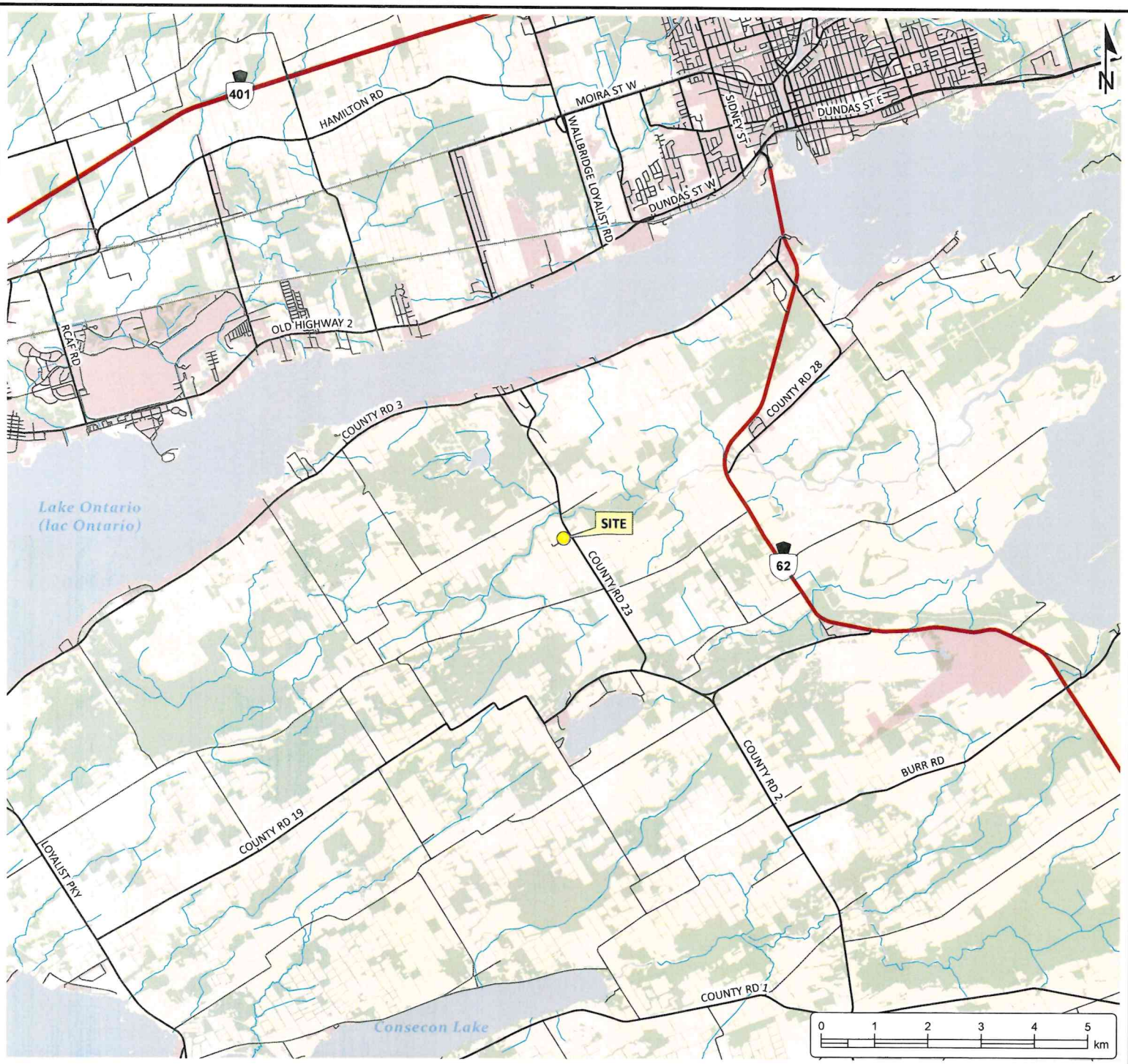
Appended Figures



HYDROGEOLOGICAL ASSESSMENT REPORT

WILLOWLEE SOD FARMS LTD.
46 Eatonville Road
Belleville, Ontario

LEGEND

- Highway
- Major Road
- Minor Road
- Railway
- Watercourse
- Built Up Area
- Wooded Area
- Water Area

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SITE LOCATION PLAN

Project No.: 20382-001		Date: August 2024	Rev.:
Scale: 1:100,000		Projection: NAD 1983 UTM Zone 18N	
Created by: NLB	Checked by: NA	Figure: 1	

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HYDROGEOLOGICAL ASSESSMENT REPORT

WILLOWLEE SOD FARMS LTD.
46 Eatonville Road
Belleville, Ontario

LEGEND

- Site (approximate)
- Parcel Boundaries

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SITE PLAN

Project No.: 20382-001		Date: August 2024	Rev.:
Scale: 1:3,000		Projection: NAD 1983 UTM Zone 18N	
Created by: NLB	Checked by: NA	Figure: 2	

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HYDROGEOLOGICAL ASSESSMENT REPORT

WILLOWLEE SOD FARMS LTD.
46 Eatonville Road
Belleville, Ontario

LEGEND

- Water Well Record
- Site (approximate)
- 500m Study Area

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MECP WELL RECORDS WITHIN 500M

Project No.: 20382-001		Date: August 2024	
		Rev.:	
Scale: 1:6,500		Projection: NAD 1983 UTM Zone 18N	
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HYDROGEOLOGICAL ASSESSMENT REPORT

WILLOWLEE SOD FARMS LTD.
46 Eatonville Road
Belleville, Ontario

LEGEND

- Monitoring Well
- Test Pit
- Site (approximate)

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194 Sophia Street
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www.cambium-inc.com

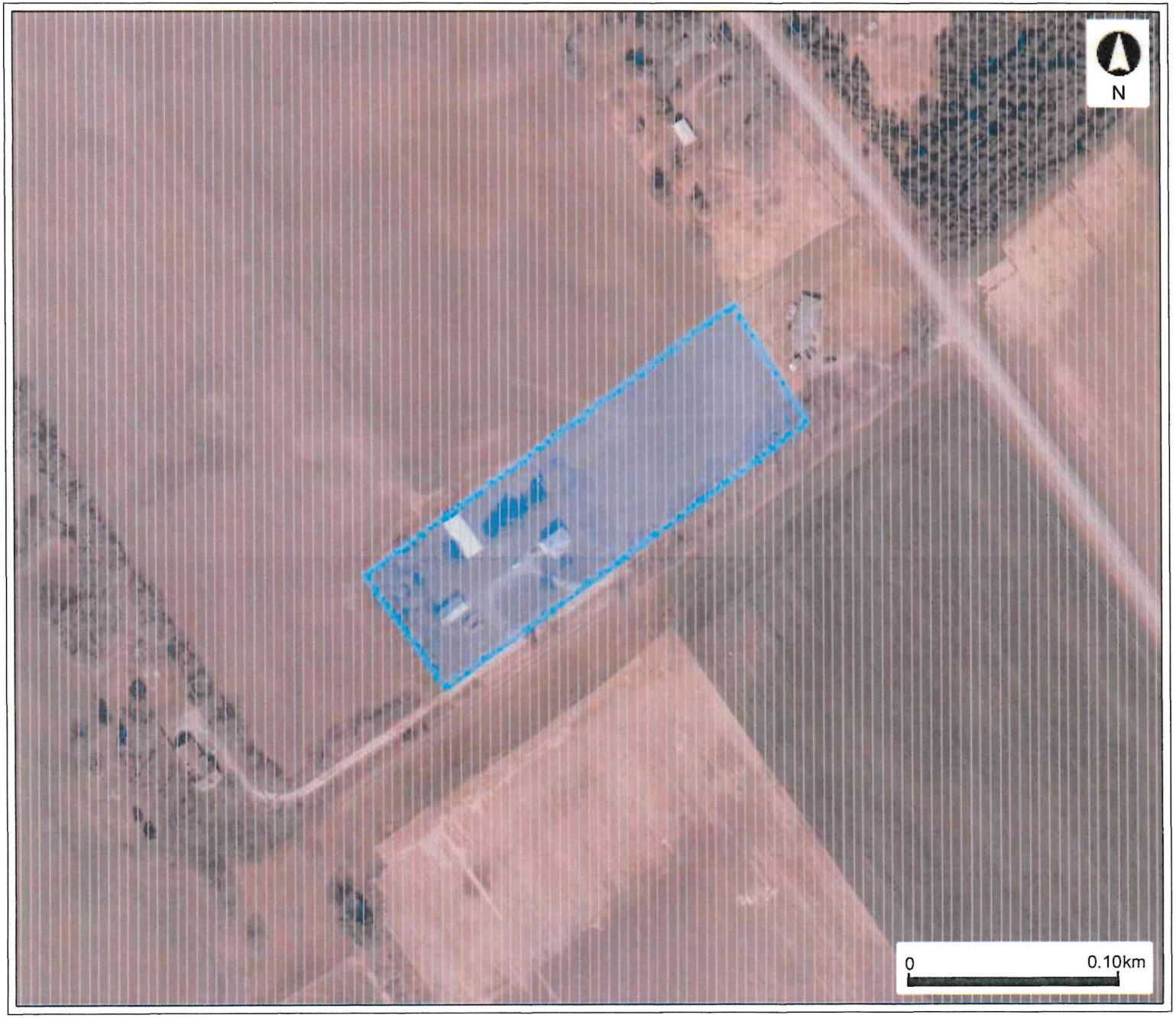
TEST PIT AND WELL LOCATION

Project No.: 20382-001		Date: August 2024	Rev.:
Scale: 1:1,500		Projection: NAD 1983 UTM Zone 18N	
Created by: NLB	Checked by: NA	Figure: 4	

O:\GIS\MXDs\20300-20399\20382-001 Willowlee Sod Frms - ENV - 46 Eatonville Rd\2024-07-05 Hydro G 20382.aprx

Appendix A
Land Information

Source Protection Information Atlas Map



Legend

- Highly Vulnerable Aquifers
- Assessment Parcel

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Environment, Conservation and Parks (MECP) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Ontario

Map Created: 7/15/2024
Map Center: 44.08961 N, -77.43489 W

Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

Natural Heritage Areas Map

Map created:7/15/2024

Notes:

Legend

- Assessment Parcel
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland

0.2 0 0.08 0.2 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

Appendix B
Test Pit Logs

20382-001
WillowLee Farms Severence
May 31, 2024
Sunny 21 C
H. Warren

Test Pit ID & UTM	Depth (mbgs[1])	Material Description	Sample
TP101-24 305036 mE 4884708 mN 18T	0.0 - 0.75	SANDY SILT, trace gravel, rootlets, loose, dry, light brown	GS1 GS2
	0.75 - 1.85	CLAYEY SILT AND SAND, some cobble, compact, dry, grey	
		Refusal at 1.85 mbgs due to suspected bedrock	
TP 102-24 305038 mE 4884715 mN 18T	0.0 - 0.35	SANDY SILT, trace gravel, rootlets, loose, dry, light brown	GS1 GS2
	0.35 - 1.58	CLAYEY SILT AND SAND, some cobble, compact, dry, grey	
		Refusal at 1.58 mbgs due to suspected bedrock	
TP103-24 305087 mE 4884742 mN 18T	0.0 - 0.40	SILTY SAND, trace clay, some cobble, some rootlets, moist, loose, dark brown	GS1 GS2
	0.40 - 1.90	CLAYEY SAND WITH COBBLE, trace boulders, moist, dense, grey and brown	
		Refusal at 1.90 mbgs due to suspected bedrock	
TP104-24 305100 mE 4884748 mN 18T	0.0 - 0.60	SILTY SAND, trace clay, some cobble, some rootlets, moist, loose, dark brown	GS1 GS2
	0.60 - 1.65	CLAYEY SAND WITH COBBLE, trace boulders, moist, dense, grey and brown	
		Refusal at 1.65 mbgs due to suspected bedrock	

1. mbgs = metres below ground surface

Appendix C

Grain Size Analysis Results

Grain Size Distribution Chart

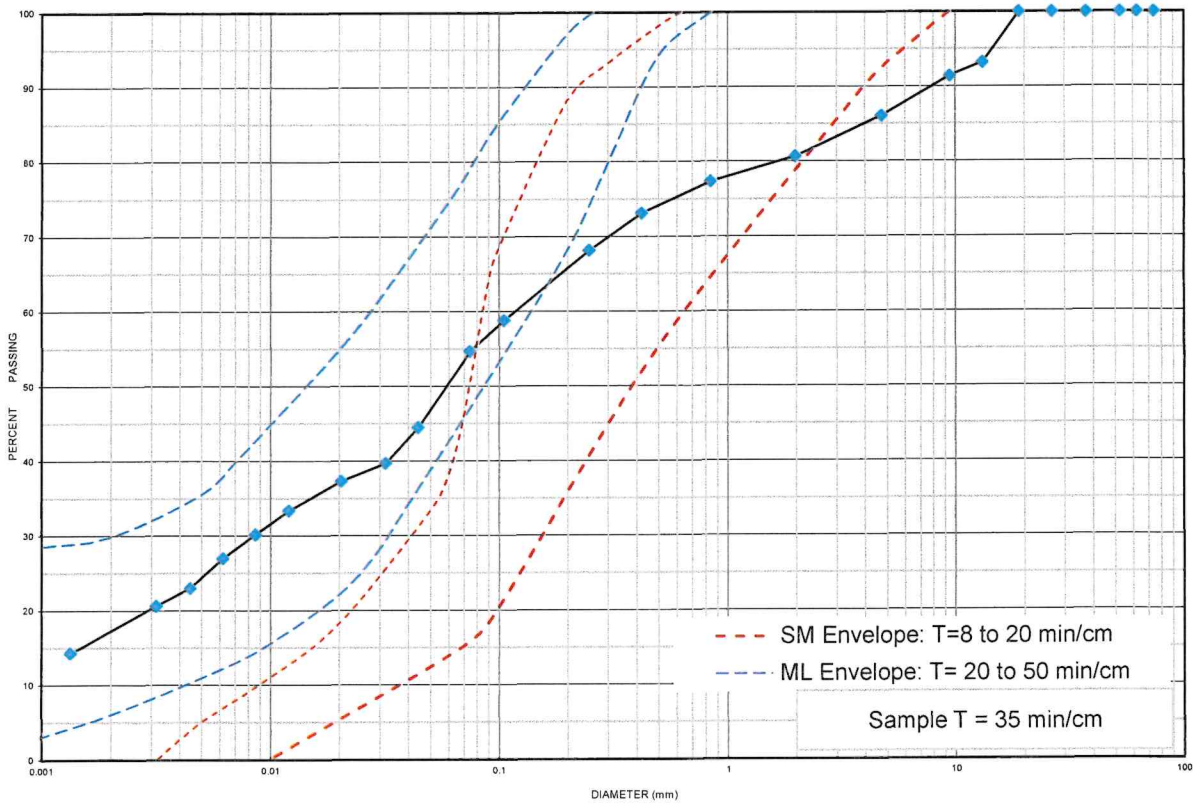
Project Number: *20382-001* **Client:** *Willowlee Sod Farms Ltd*

Project Name: *46 Eatonville Rd*

Sample Date: *May 31, 2024* **Sampled By:** *Holly Warren - Cambium Inc.*

Location: *TP 102-24 GS 2* **Depth:** *0.35 m to 1.58 m* **Lab Sample No:** *S-24-1170*

UNIFIED SOIL CLASSIFICATION SYSTEM					
CLAY & SILT (<0.075 mm)	SAND (<4.75 mm to 0.075 mm)			GRAVEL (>4.75 mm)	
	FINE	MEDIUM	COARSE	FINE	COARSE



MIT SOIL CLASSIFICATION SYSTEM								
CLAY	SILT	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	BOULDERS
		SAND			GRAVEL			

Borehole No.	Sample No.	Depth	Gravel	Sand	Silt	Clay	Moisture
TP 102-24	GS 2	0.35 m to 1.58 m	14	31	38	17	7.7

Description	Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
Sandy Silt some Clay some Gravel	ML	0.1350	0.0083	-	-	-

Additional information availabe upon request

Issued By: _____ *Date Issued:* *June 27, 2024*

(Senior Project Manager)

Cambium Inc. (Laboratory)
866.217.7900 | cambium-inc.com
194 Sophia St. | Peterborough | ON | K9H 1E5

Grain Size Distribution Chart

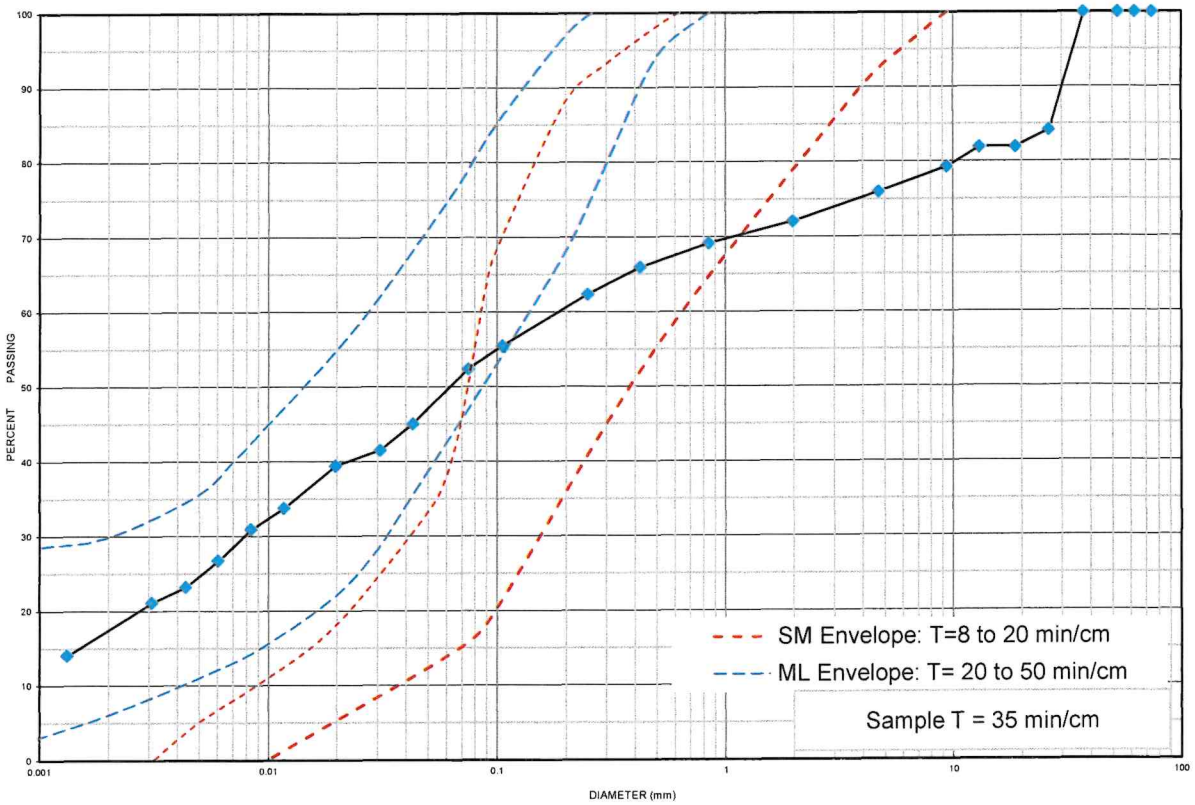
Project Number: *20382-001* **Client:** *Willowlee Sod Farms Ltd*

Project Name: *46 Eatonville Rd*

Sample Date: *May 31, 2024* **Sampled By:** *Holly Warren - Cambium Inc.*

Location: *TP 104-24 GS 2* **Depth:** *0.60 m to 1.65 m* **Lab Sample No:** *S-24-1171*

UNIFIED SOIL CLASSIFICATION SYSTEM					
CLAY & SILT (<0.075 mm)	SAND (<4.75 mm to 0.075 mm)			GRAVEL (>4.75 mm)	
	FINE	MEDIUM	COARSE	FINE	COARSE



MIT SOIL CLASSIFICATION SYSTEM								
CLAY	SILT	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	BOULDERS
		SAND			GRAVEL			

Borehole No.	Sample No.	Depth	Gravel	Sand	Silt	Clay	Moisture
TP 104-24	GS 2	0.60 m to 1.65 m	24	24	32	18	6.5

Description	Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
Gravelly Sandy Silt some Clay	ML	0.1900	0.0079	-	-	-

Additional information availabe upon request

Issued By: _____ *Date Issued:* *June 27, 2024*

(Senior Project Manager)

Cambium Inc. (Laboratory)
866.217.7900 | cambium-inc.com
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Appendix D

Well Inventory Survey Results

Water Well Records Summary Report

Produced by Cambium Inc. using MOECP Water Well Information System (WWIS)

All units in meters unless otherwise specified

Well ID: 5303961
Construction Date: 1980-05-29
Easting: 305070
Northing: 5E+06
UTM Zone 18
Positional Accuracy: margin of error : 30 m - 100 m

Well Depth: 23.8
Well Diameter (cm): 15.2
Water First Found: 13.7
Static Level: 2
Water Kind FRESH
Final Status Water Supply
Primary Water Use: Domestic
Pump Rate (LPM): 9
Recommended Pump Rate: 9
Pumping Duration (h:m): 1 : 0

Layer:	Driller's Description:	Top:	Bottom:
1	CLAY	0	13.4
2	GRAVEL	13.4	13.7
3	LIMESTONE	13.7	23.8

Well ID: 5303986
Construction Date: 1980-07-07
Easting: 305170
Northing: 5E+06
UTM Zone 18
Positional Accuracy: margin of error : 30 m - 100 m

Well Depth: 9.75
Well Diameter (cm): 15.2
Water First Found: 9.75
Static Level: 3
Water Kind FRESH
Final Status Water Supply
Primary Water Use: Domestic
Pump Rate (LPM): 27
Recommended Pump Rate: 23
Pumping Duration (h:m): 2 : 0

Layer:	Driller's Description:	Top:	Bottom:
1	TOPSOIL	0	0.91
2	CLAY	0.91	6.1
3	CLAY	6.1	9.14
4	GRAVEL	9.14	9.75

Well ID: 5306439
Construction Date: 1998-04-17
Easting: 305117
Northing: 5E+06
UTM Zone 18
Positional Accuracy: margin of error : 10 - 30 m

Well Depth: 33.2
Well Diameter (cm): 15.2
Water First Found: 25.9
Static Level: 2
Water Kind FRESH
Final Status Water Supply
Primary Water Use: Domestic
Pump Rate (LPM): 9
Recommended Pump Rate: 9
Pumping Duration (h:m): 1 : 20

Layer:	Driller's Description:	Top:	Bottom:
1	TOPSOIL	0	0.61
1	TOPSOIL	0	0.61
2	CLAY	0.61	1.52
2	CLAY	0.61	1.52
3	CLAY	1.52	15.2
3	CLAY	1.52	15.2
4	LIMESTONE	15.2	33.2
4	LIMESTONE	15.2	33.2

Well ID: 5306773
Construction Date: 2001-03-28
Easting: 305496
Northing: 5E+06
UTM Zone 18
Positional Accuracy: margin of error : 10 - 30 m

Well Depth: 25.9
Well Diameter (cm): 15.2
Water First Found: 8.23
Static Level: 2
Water Kind Not stated
Final Status Water Supply
Primary Water Use: Domestic
Pump Rate (LPM): 5
Recommended Pump Rate:
Pumping Duration (h:m): 1 :

Layer:	Driller's Description:	Top:	Bottom:
1	TOPSOIL	0	0.30
1	TOPSOIL	0	0.30
2	CLAY	0.30	4.57
2	CLAY	0.30	4.57
3	CLAY	4.57	7.01
3	CLAY	4.57	7.01
4	LIMESTONE	7.01	25.9
4	LIMESTONE	7.01	25.9

Well ID: 7237096
Construction Date: 2015-02-09
Easting: 304927
Northing: 5E+06
UTM Zone 18
Positional Accuracy: margin of error : 30 m - 100 m

Well Depth: 8.2
Well Diameter (cm): 90
Water First Found: 3.5
Static Level: 2
Water Kind FRESH
Final Status Water Supply
Primary Water Use: Domestic
Pump Rate (LPM): 585
Recommended Pump Rate:
Pumping Duration (h:m): : 30

Layer:	Driller's Description:	Top:	Bottom:
1	CLAY	0	8.2

Well ID: 7243299
Construction Date: 2015-06-23
Easting: 305101
Northing: 5E+06
UTM Zone 18
Positional Accuracy: margin of error : 30 m - 100 m

Well Depth:
Well Diameter (cm): 91.4
Water First Found:
Static Level:
Water Kind
Final Status Abandoned-Su
Primary Water Use: Domestic
Pump Rate (LPM):
Recommended Pump Rate:
Pumping Duration (h:m):

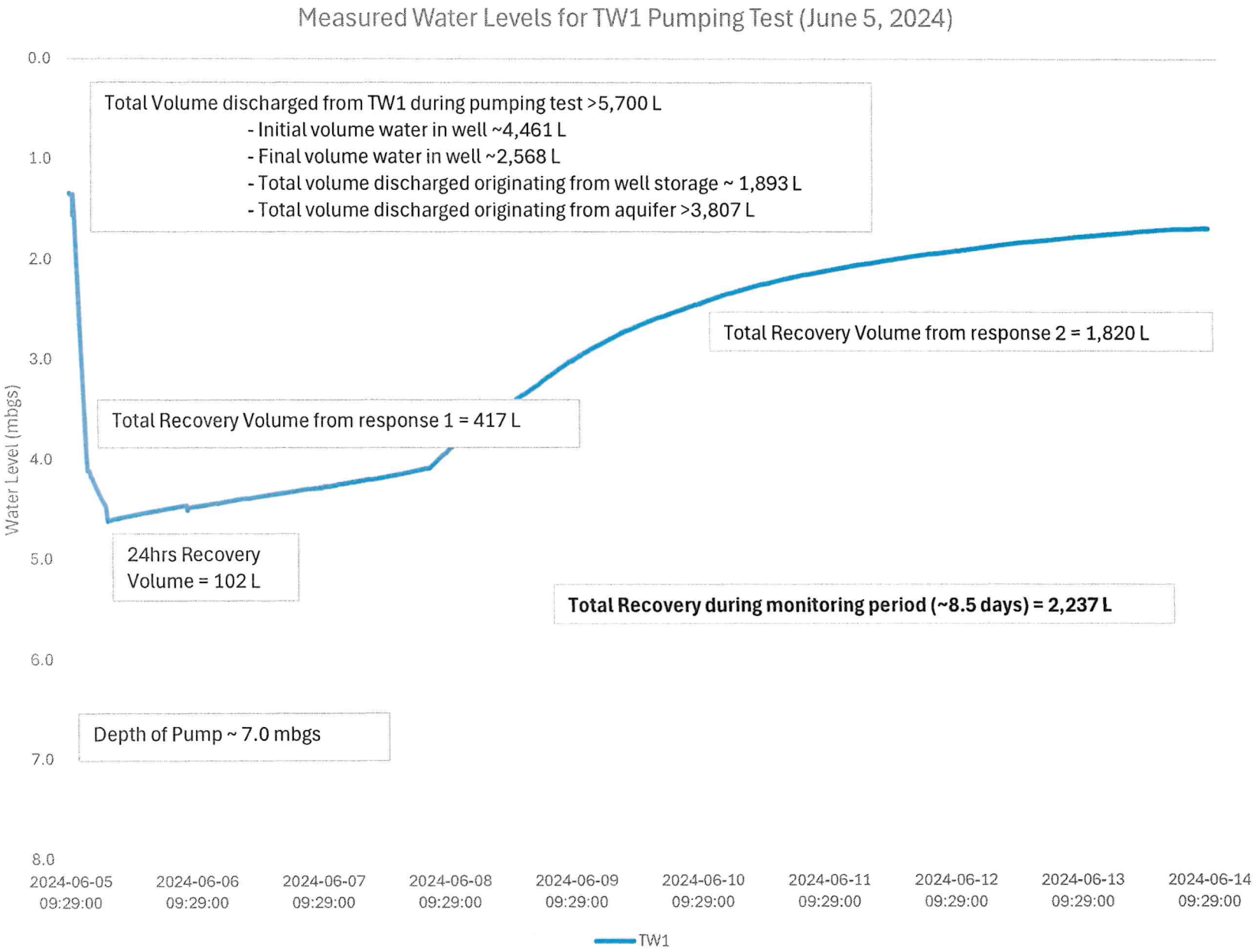
Layer:	Driller's Description:	Top:	Bottom:

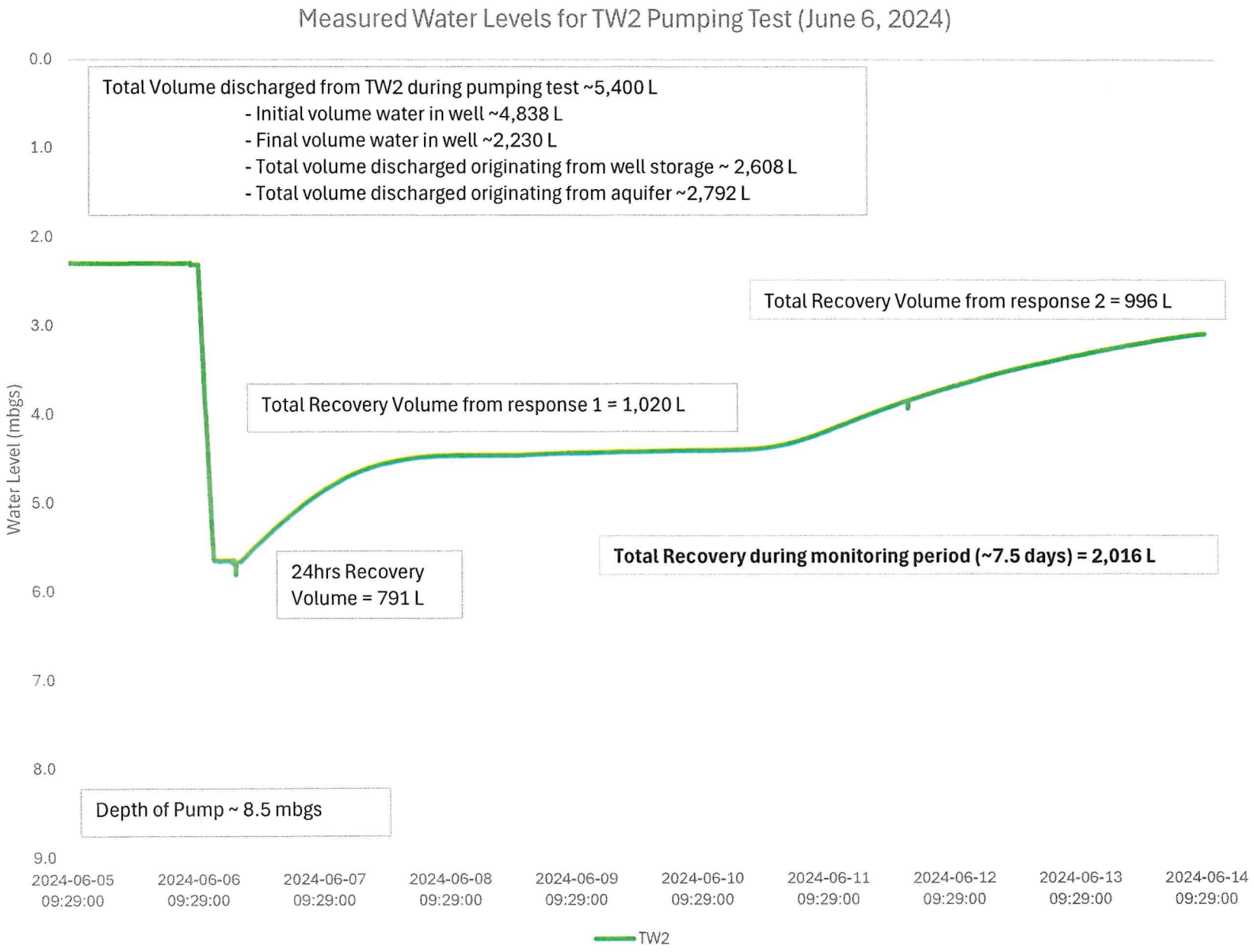
Well Use Survey Summary Report

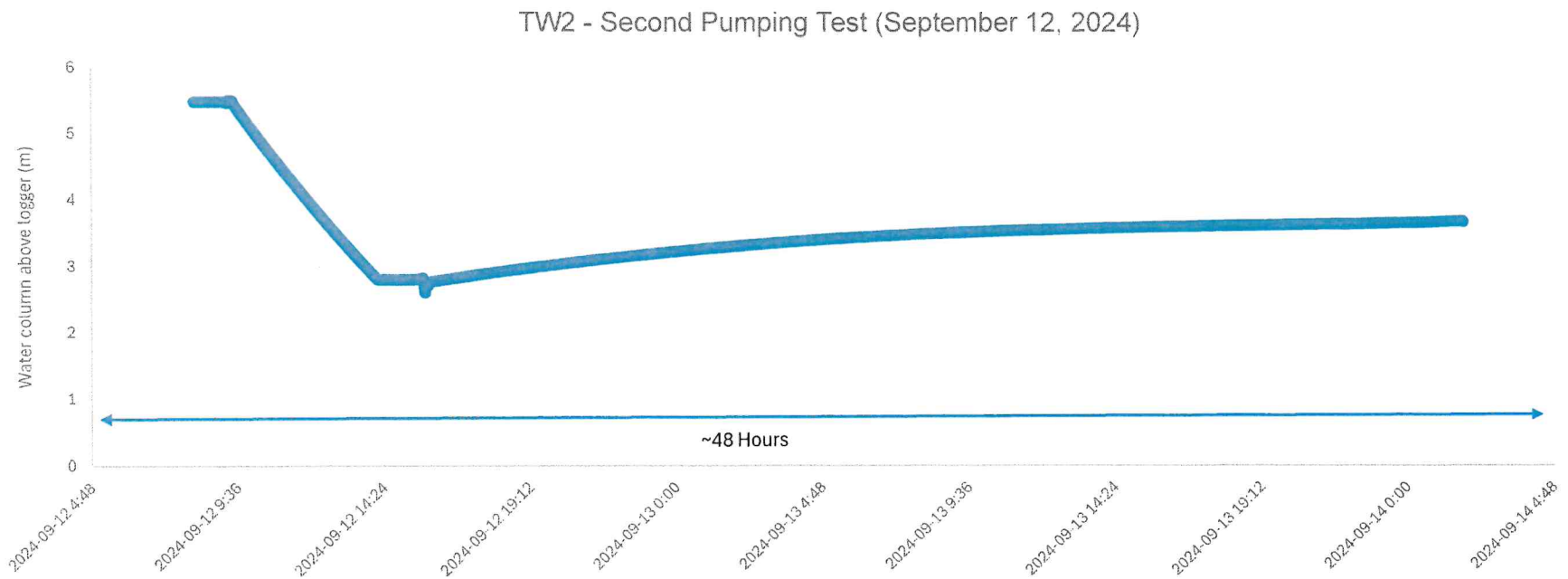
Number	Street	Spoke to owner	Participated in program	Comments	Water Level (mtop)	Depth (mtop)	Well Record #	UTM	
								mE	mN
6	Eatonville Road	Yes	Yes	Gave letter to owner					
82	Eatonville Road	No	No	Left letter in mailbox					
644	County Road 23	No	No	Left letter in mailbox					
637	County Road 23	Yes	No	Left letter in mailbox					

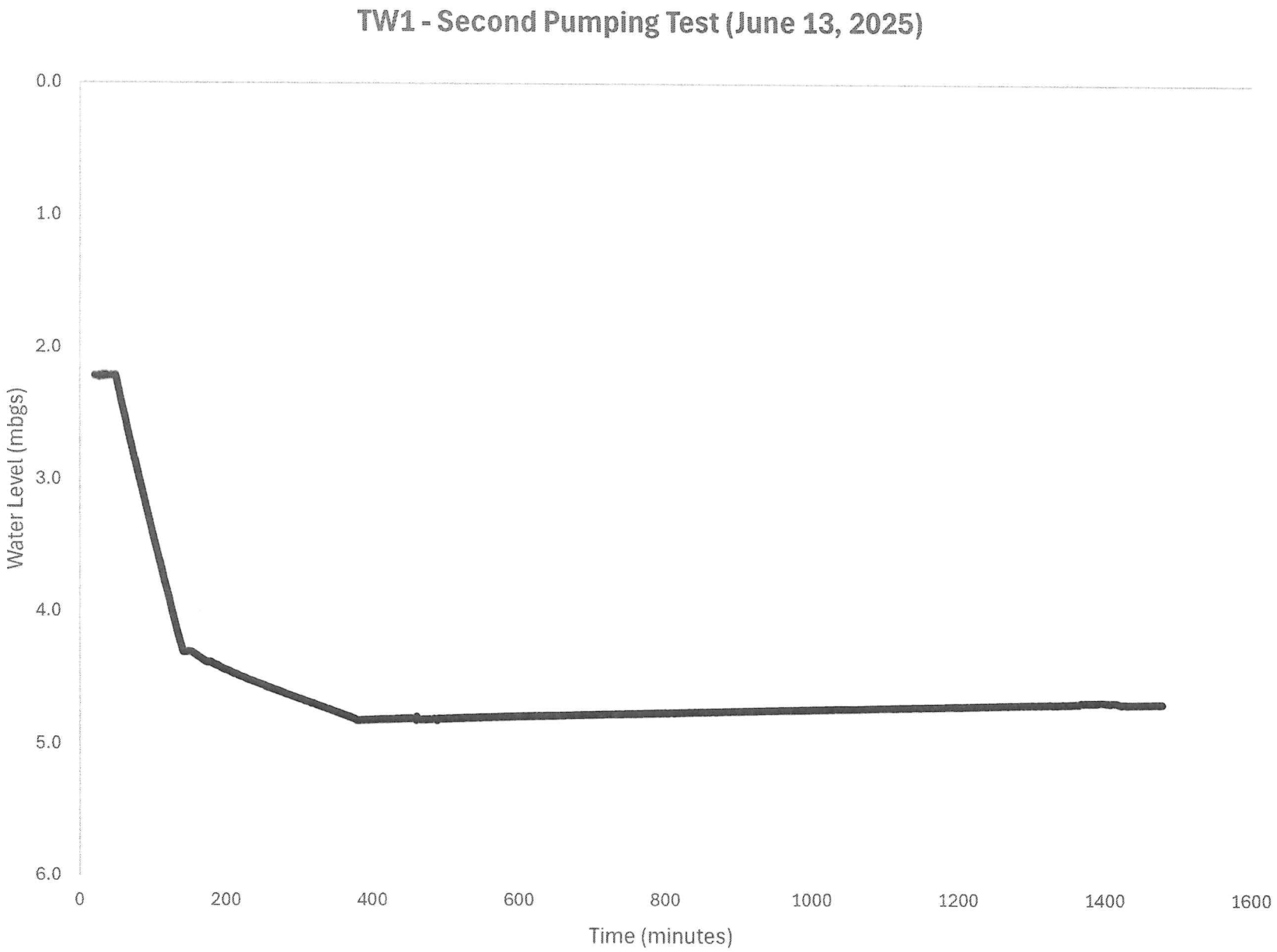
Appendix E

Hydraulic Pumping Test Results









Appendix F

Groundwater Quality Lab Results

Your Project #: 20382-001
Site#: .
Site Location: .
Your C.O.C. #: 994549-03-01

Attention: Natasha Augustine

Cambium Environmental Inc
194 Sophia Street
PO Box 325
Peterborough, ON
CANADA K9H 1E5

Report Date: 2024/06/19
Report #: R8198484
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4H1747
Received: 2024/06/07, 09:15

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity (1)	2	N/A	2024/06/11	CAM SOP-00448	SM 24 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	2	N/A	2024/06/11	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	2	N/A	2024/06/12	CAM SOP-00463	SM 24 4500-Cl E m
Conductivity (1)	2	N/A	2024/06/11	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1, 2)	2	N/A	2024/06/11	CAM SOP-00446	SM 24 5310 B m
Hardness (calculated as CaCO3) (1)	2	N/A	2024/06/19	CAM SOP 00102/00408/00447	SM 2340 B
Metals Analysis by ICPMS (as received) (1, 3)	2	N/A	2024/06/18	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference) (1)	2	N/A	2024/06/19		
Anion and Cation Sum (1)	2	N/A	2024/06/19		
Total Coliforms/ E. coli, CFU/100mL (1)	2	N/A	2024/06/07	CAM SOP-00551	MECP-E3407
Fecal coliform, (CFU/100mL) (1)	2	N/A	2024/06/07	CAM SOP-00552	SM9222D, MECP E3371
Coliform/E.coli,(P-A/100 ml) (1, 4)	2	N/A	2024/06/07	CAM SOP-00514	SM9221D,F
Total Ammonia-N (1)	2	N/A	2024/06/13	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1, 5)	2	N/A	2024/06/10	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (1)	2	2024/06/11	2024/06/11	CAM SOP-00413	SM 24th - 4500H+ B
Orthophosphate (1)	2	N/A	2024/06/10	CAM SOP-00461	SM 24 4500-P E
Sat. pH and Langelier Index (@ 20C) (1)	2	N/A	2024/06/19		Auto Calc
Sat. pH and Langelier Index (@ 4C) (1)	2	N/A	2024/06/19		Auto Calc
Sulphate by Automated Turbidimetry (1)	2	N/A	2024/06/12	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids (TDS calc) (1)	2	N/A	2024/06/19		Auto Calc
Turbidity (1)	2	N/A	2024/06/08	CAM SOP-00417	SM 24 2130 B

Remarks:

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

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

Your Project #: 20382-001
Site#: .
Site Location: .
Your C.O.C. #: 994549-03-01

Attention: Natasha Augustine

Cambium Environmental Inc
194 Sophia Street
PO Box 325
Peterborough, ON
CANADA K9H 1E5

Report Date: 2024/06/19
Report #: R8198484
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4H1747
Received: 2024/06/07, 09:15

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8
(2) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(3) Metals analysis was performed on the sample 'as received'.
(4) Presence/absence test: P = Present, A = Absent
(5) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Christine Gripton, Senior Project Manager
Email: Christine.Gripton@bureauveritas.com
Phone# (519)652-9444

==========

This report has been generated and distributed using a secure automated process.
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Bureau Veritas Job #: C4H1747
Report Date: 2024/06/19

Cambium Environmental Inc
Client Project #: 20382-001
Site Location: .
Sampler Initials: MC

RCAP - COMPREHENSIVE (DRINKING WATER)

Bureau Veritas ID		ZJP834			ZJP834			ZJP835		
Sampling Date		2024/06/06 07:50			2024/06/06 07:50			2024/06/06 15:30		
COC Number		994549-03-01			994549-03-01			994549-03-01		
	UNITS	TW1	RDL	QC Batch	TW1 Lab-Dup	RDL	QC Batch	TW2	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	6.69	N/A	9441043				18.7	N/A	9441043
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	260	1.0	9440863				610	1.0	9440863
Calculated TDS	mg/L	370	1.0	9440871				1100	1.0	9440871
Carb. Alkalinity (calc. as CaCO3)	mg/L	4.0	1.0	9440863				3.0	1.0	9440863
Cation Sum	me/L	6.85	N/A	9441043				19.7	N/A	9441043
Hardness (CaCO3)	mg/L	210	1.0	9440598				540	1.0	9441037
Ion Balance (% Difference)	%	1.23	N/A	9441042				2.59	N/A	9441042
Langelier Index (@ 20C)	N/A	0.840		9440868				0.955		9440868
Langelier Index (@ 4C)	N/A	0.591		9440869				0.709		9440869
Saturation pH (@ 20C)	N/A	7.38		9440868				6.77		9440868
Saturation pH (@ 4C)	N/A	7.63		9440869				7.02		9440869
Inorganics										
Total Ammonia-N	mg/L	0.83	0.050	9450810				4.7	0.050	9450810
Conductivity	umho/cm	610	1.0	9446618				1700	1.0	9446618
Dissolved Organic Carbon	mg/L	1.4	0.40	9443420	1.3	0.40	9443420	7.1	0.40	9443420
Orthophosphate (P)	mg/L	<0.010	0.010	9443466				0.015	0.010	9443466
pH	pH	8.22		9446615				7.72		9446615
Dissolved Sulphate (SO4)	mg/L	48	1.0	9443467				140	1.0	9443467
Alkalinity (Total as CaCO3)	mg/L	270	1.0	9446607				610	1.0	9446607
Dissolved Chloride (Cl-)	mg/L	13	1.0	9443465				120	1.0	9443465
Nitrite (N)	mg/L	0.014	0.010	9443146				<0.010	0.010	9443146
Nitrate (N)	mg/L	<0.10	0.10	9443146				<0.10	0.10	9443146
Metals										
Aluminum (Al)	ug/L	11	4.9	9450072				<4.9	4.9	9450072
Antimony (Sb)	ug/L	<0.50	0.50	9450072				<0.50	0.50	9450072
Arsenic (As)	ug/L	2.1	1.0	9450072				2.9	1.0	9450072
Barium (Ba)	ug/L	61	2.0	9450072				150	2.0	9450072
Beryllium (Be)	ug/L	<0.40	0.40	9450072				<0.40	0.40	9450072
Boron (B)	ug/L	180	10	9450072				260	10	9450072

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas Job #: C4H1747
Report Date: 2024/06/19

Cambium Environmental Inc
Client Project #: 20382-001
Site Location: .
Sampler Initials: MC

RCAP - COMPREHENSIVE (DRINKING WATER)

Bureau Veritas ID		ZJP834			ZJP834			ZJP835		
Sampling Date		2024/06/06 07:50			2024/06/06 07:50			2024/06/06 15:30		
COC Number		994549-03-01			994549-03-01			994549-03-01		
	UNITS	TW1	RDL	QC Batch	TW1 Lab-Dup	RDL	QC Batch	TW2	RDL	QC Batch
Cadmium (Cd)	ug/L	<0.090	0.090	9450072				<0.090	0.090	9450072
Calcium (Ca)	ug/L	43000	200	9450072				100000	200	9450072
Chromium (Cr)	ug/L	<5.0	5.0	9450072				<5.0	5.0	9450072
Cobalt (Co)	ug/L	<0.50	0.50	9450072				1.1	0.50	9450072
Copper (Cu)	ug/L	<0.90	0.90	9450072				<0.90	0.90	9450072
Iron (Fe)	ug/L	<100	100	9450072				240	100	9450072
Lead (Pb)	ug/L	<0.50	0.50	9450072				<0.50	0.50	9450072
Lithium (Li)	ug/L	42	5.0	9450072				130	5.0	9450072
Magnesium (Mg)	ug/L	24000	50	9450072				70000	50	9450072
Manganese (Mn)	ug/L	43	2.0	9450072				86	2.0	9450072
Molybdenum (Mo)	ug/L	5.2	0.50	9450072				5.3	0.50	9450072
Nickel (Ni)	ug/L	<1.0	1.0	9450072				5.2	1.0	9450072
Phosphorus (P)	ug/L	<100	100	9450072				<100	100	9450072
Potassium (K)	ug/L	11000	200	9450072				91000	200	9450072
Selenium (Se)	ug/L	<2.0	2.0	9450072				<2.0	2.0	9450072
Silicon (Si)	ug/L	6100	50	9450072				8000	50	9450072
Silver (Ag)	ug/L	<0.090	0.090	9450072				<0.090	0.090	9450072
Sodium (Na)	ug/L	56000	100	9450072				140000	100	9450072
Strontium (Sr)	ug/L	2300	1.0	9450072				4500	1.0	9450072
Thallium (Tl)	ug/L	<0.050	0.050	9450072				<0.050	0.050	9450072
Titanium (Ti)	ug/L	<5.0	5.0	9450072				<5.0	5.0	9450072
Uranium (U)	ug/L	0.94	0.10	9450072				2.8	0.10	9450072
Vanadium (V)	ug/L	<0.50	0.50	9450072				<0.50	0.50	9450072
Zinc (Zn)	ug/L	8.3	5.0	9450072				15	5.0	9450072

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Job #: C4H1747
Report Date: 2024/06/19

Cambium Environmental Inc
Client Project #: 20382-001
Site Location: .
Sampler Initials: MC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZJP834	ZJP835		
Sampling Date		2024/06/06 07:50	2024/06/06 15:30		
COC Number		994549-03-01	994549-03-01		
	UNITS	TW1	TW2	RDL	QC Batch
Inorganics					
Turbidity	NTU	1.0	1.2	0.1	9443143

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Job #: C4H1747
Report Date: 2024/06/19

Cambium Environmental Inc
Client Project #: 20382-001
Site Location: .
Sampler Initials: MC

MICROBIOLOGY (WATER)

Bureau Veritas ID		ZJP834	ZJP835	
Sampling Date		2024/06/06 07:50	2024/06/06 15:30	
COC Number		994549-03-01	994549-03-01	
	UNITS	TW1	TW2	QC Batch
Microbiological				
Escherichia coli	P-A/100mL	A	A	9441502
Fecal coliform	CFU/100mL	0	0	9441501
Total Coliforms	P-A/100mL	P	A	9441502
Background	CFU/100mL	14	11	9441445
Total Coliforms	CFU/100mL	0	0	9441445
Escherichia coli	CFU/100mL	0	0	9441445
QC Batch = Quality Control Batch				

Bureau Veritas Job #: C4H1747
Report Date: 2024/06/19

Cambium Environmental Inc
Client Project #: 20382-001
Site Location: .
Sampler Initials: MC

TEST SUMMARY

Bureau Veritas ID: ZJP834
Sample ID: TW1
Matrix: Water

Collected: 2024/06/06
Shipped:
Received: 2024/06/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9446607	N/A	2024/06/11	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	9440863	N/A	2024/06/11	Automated Statchk
Chloride by Automated Colourimetry	SKAL	9443465	N/A	2024/06/12	Alina Dobreanu
Conductivity	AT	9446618	N/A	2024/06/11	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9443420	N/A	2024/06/11	Gyulshen Idriz
Hardness (calculated as CaCO3)		9440598	N/A	2024/06/19	Automated Statchk
Metals Analysis by ICPMS (as received)	ICP/MS	9450072	N/A	2024/06/18	Nan Raykha
Ion Balance (% Difference)	CALC	9441042	N/A	2024/06/19	Automated Statchk
Anion and Cation Sum	CALC	9441043	N/A	2024/06/19	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	9441445	N/A	2024/06/07	Jessica (Ya Ping) Qiang
Fecal coliform, (CFU/100mL)	PL	9441501	N/A	2024/06/07	Jessica (Ya Ping) Qiang
Coliform/E.coli,(P-A/100 ml)	INC	9441502	N/A	2024/06/07	Paramjit Paramjit
Total Ammonia-N	LACH/NH4	9450810	N/A	2024/06/13	Yogesh Patel
Nitrate & Nitrite as Nitrogen in Water	LACH	9443146	N/A	2024/06/10	Chandra Nandlal
pH	AT	9446615	2024/06/11	2024/06/11	Surinder Rai
Orthophosphate	KONE	9443466	N/A	2024/06/10	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	9440868	N/A	2024/06/19	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9440869	N/A	2024/06/19	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9443467	N/A	2024/06/12	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	9440871	N/A	2024/06/19	Automated Statchk
Turbidity	AT	9443143	N/A	2024/06/08	Kien Tran

Bureau Veritas ID: ZJP834 Dup
Sample ID: TW1
Matrix: Water

Collected: 2024/06/06
Shipped:
Received: 2024/06/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9443420	N/A	2024/06/11	Gyulshen Idriz

Bureau Veritas ID: ZJP835
Sample ID: TW2
Matrix: Water

Collected: 2024/06/06
Shipped:
Received: 2024/06/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9446607	N/A	2024/06/11	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	9440863	N/A	2024/06/11	Automated Statchk
Chloride by Automated Colourimetry	SKAL	9443465	N/A	2024/06/12	Alina Dobreanu
Conductivity	AT	9446618	N/A	2024/06/11	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9443420	N/A	2024/06/11	Gyulshen Idriz
Hardness (calculated as CaCO3)		9441037	N/A	2024/06/19	Automated Statchk
Metals Analysis by ICPMS (as received)	ICP/MS	9450072	N/A	2024/06/18	Nan Raykha
Ion Balance (% Difference)	CALC	9441042	N/A	2024/06/19	Automated Statchk
Anion and Cation Sum	CALC	9441043	N/A	2024/06/19	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	9441445	N/A	2024/06/07	Jessica (Ya Ping) Qiang
Fecal coliform, (CFU/100mL)	PL	9441501	N/A	2024/06/07	Jessica (Ya Ping) Qiang

Bureau Veritas Job #: C4H1747
Report Date: 2024/06/19

Cambium Environmental Inc
Client Project #: 20382-001
Site Location: .
Sampler Initials: MC

TEST SUMMARY

Bureau Veritas ID: ZJP835
Sample ID: TW2
Matrix: Water

Collected: 2024/06/06
Shipped:
Received: 2024/06/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Coliform/E.coli,(P-A/100 ml)	INC	9441502	N/A	2024/06/07	Paramjit Paramjit
Total Ammonia-N	LACH/NH4	9450810	N/A	2024/06/13	Yogesh Patel
Nitrate & Nitrite as Nitrogen in Water	LACH	9443146	N/A	2024/06/10	Chandra Nandlal
pH	AT	9446615	2024/06/11	2024/06/11	Surinder Rai
Orthophosphate	KONE	9443466	N/A	2024/06/10	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	9440868	N/A	2024/06/19	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9440869	N/A	2024/06/19	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9443467	N/A	2024/06/12	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	9440871	N/A	2024/06/19	Automated Statchk
Turbidity	AT	9443143	N/A	2024/06/08	Kien Tran

Bureau Veritas Job #: C4H1747
Report Date: 2024/06/19

Cambium Environmental Inc
Client Project #: 20382-001
Site Location: .
Sampler Initials: MC

GENERAL COMMENTS

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

Package 1	4.0°C

Sample ZJP835 [TW2] : Total Phosphorus < ortho-Phosphate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

Bureau Veritas Job #: C4H1747
Report Date: 2024/06/19

QUALITY ASSURANCE REPORT

Cambium Environmental Inc
Client Project #: 20382-001
Site Location: .
Sampler Initials: MC

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9443143	Turbidity	2024/06/08			99	80 - 120	<0.1	NTU	NC	20
9443146	Nitrate (N)	2024/06/10	98	80 - 120	102	80 - 120	<0.10	mg/L	0.45	20
9443146	Nitrite (N)	2024/06/10	104	80 - 120	104	80 - 120	<0.010	mg/L	NC	20
9443420	Dissolved Organic Carbon	2024/06/11	95	80 - 120	99	80 - 120	<0.40	mg/L	2.4	20
9443465	Dissolved Chloride (Cl-)	2024/06/12	100	80 - 120	97	80 - 120	<1.0	mg/L	0.20	20
9443466	Orthophosphate (P)	2024/06/10	93	75 - 125	94	80 - 120	<0.010	mg/L	NC	20
9443467	Dissolved Sulphate (SO4)	2024/06/12	99	75 - 125	97	80 - 120	<1.0	mg/L	1.2	20
9446607	Alkalinity (Total as CaCO3)	2024/06/11			97	85 - 115	<1.0	mg/L	0.96	20
9446615	pH	2024/06/11			102	98 - 103			0.89	N/A
9446618	Conductivity	2024/06/11			103	85 - 115	<1.0	umho/cm	0.41	10
9450072	Aluminum (Al)	2024/06/18	105	80 - 120	100	80 - 120	<4.9	ug/L		
9450072	Antimony (Sb)	2024/06/18	104	80 - 120	101	80 - 120	<0.50	ug/L		
9450072	Arsenic (As)	2024/06/18	107	80 - 120	101	80 - 120	<1.0	ug/L		
9450072	Barium (Ba)	2024/06/18	106	80 - 120	101	80 - 120	<2.0	ug/L		
9450072	Beryllium (Be)	2024/06/18	107	80 - 120	102	80 - 120	<0.40	ug/L		
9450072	Boron (B)	2024/06/18	NC	80 - 120	92	80 - 120	<10	ug/L		
9450072	Cadmium (Cd)	2024/06/18	101	80 - 120	97	80 - 120	<0.090	ug/L		
9450072	Calcium (Ca)	2024/06/18	105	80 - 120	101	80 - 120	<200	ug/L		
9450072	Chromium (Cr)	2024/06/18	103	80 - 120	99	80 - 120	<5.0	ug/L		
9450072	Cobalt (Co)	2024/06/18	104	80 - 120	101	80 - 120	<0.50	ug/L		
9450072	Copper (Cu)	2024/06/18	110	80 - 120	104	80 - 120	<0.90	ug/L		
9450072	Iron (Fe)	2024/06/18	108	80 - 120	104	80 - 120	<100	ug/L		
9450072	Lead (Pb)	2024/06/18	100	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
9450072	Lithium (Li)	2024/06/18	111	80 - 120	103	80 - 120	<5.0	ug/L		
9450072	Magnesium (Mg)	2024/06/18	112	80 - 120	104	80 - 120	<50	ug/L		
9450072	Manganese (Mn)	2024/06/18	104	80 - 120	99	80 - 120	<2.0	ug/L		
9450072	Molybdenum (Mo)	2024/06/18	107	80 - 120	101	80 - 120	<0.50	ug/L		
9450072	Nickel (Ni)	2024/06/18	102	80 - 120	97	80 - 120	<1.0	ug/L		
9450072	Phosphorus (P)	2024/06/18	111	80 - 120	107	80 - 120	<100	ug/L		
9450072	Potassium (K)	2024/06/18	113	80 - 120	107	80 - 120	<200	ug/L		
9450072	Selenium (Se)	2024/06/18	100	80 - 120	97	80 - 120	<2.0	ug/L		
9450072	Silicon (Si)	2024/06/18	107	80 - 120	104	80 - 120	<50	ug/L		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9450072	Silver (Ag)	2024/06/18	101	80 - 120	99	80 - 120	<0.090	ug/L		
9450072	Sodium (Na)	2024/06/18	NC	80 - 120	105	80 - 120	<100	ug/L		
9450072	Strontium (Sr)	2024/06/18	NC	80 - 120	96	80 - 120	<1.0	ug/L		
9450072	Thallium (Tl)	2024/06/18	103	80 - 120	99	80 - 120	<0.050	ug/L		
9450072	Titanium (Ti)	2024/06/18	102	80 - 120	99	80 - 120	<5.0	ug/L		
9450072	Uranium (U)	2024/06/18	101	80 - 120	96	80 - 120	<0.10	ug/L		
9450072	Vanadium (V)	2024/06/18	104	80 - 120	98	80 - 120	<0.50	ug/L		
9450072	Zinc (Zn)	2024/06/18	103	80 - 120	98	80 - 120	<5.0	ug/L		
9450810	Total Ammonia-N	2024/06/13	93	75 - 125	99	80 - 120	<0.050	mg/L	NC	20

N/A = Not Applicable

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

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

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

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

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

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

Bureau Veritas Job #: C4H1747
Report Date: 2024/06/19

Cambium Environmental Inc
Client Project #: 20382-001
Site Location: .
Sampler Initials: MC

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Senior Scientific Specialist

Jessica (Ya Ping) Qiang, Analyst II

Paramjit Paramjit, Analyst I

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

07-Jun-24 09:15
Christine Gripton
C4H1747
ASR ENV-1315

NG WATER CHAIN OF CUSTODY RECORD

d, Mississauga, Ontario Canada L5N 2L8 www.bvna.com
:800-563-6266 Fax:905-817-5779

Bottle Order #: 994549 COC #: C#994549-03-01

Please indicate which regulation applies to the samples being submitted:
☐ 170 ☐ 318/319 ☐ 243 ☐ 170Pb
☒ Not regulated (however water is for human consumption)

CAM FCD-01101/2 Page of

INVOICE TO:
Company Name: #17950 Cambium Environmental Inc
Attention: ACCOUNTS PAYABLE
Address: 194 Sophia Street PO Box 325 Peterborough ON K9H 1E5
Tel: (705) 742-7900 Project: ~~2016-001~~ 20382-001
Fax: (705) 742-7907 P.O. #:
Email: accounting@cambium-inc.com

REPORT TO:
☐ Same as Invoice To
Company Name: Cambium
Attention: Natasha Augustine
Address:
Tel: Fax:
Email: natasha.augustine@cambium-inc.com Maren.Catt@cambium-inc.com

***DRINKING WATER TYPE LEGEND: [R=Raw Water] [T=Treated/POE] [D=Distribution] [P=Plumbing] [S=Standing] [F=Flushed]**

Sample Identification/Location	Date Sampled	Time Sampled	*WATER TYPE (R,T,D,P,S,F)	MOE/MOH Adverse Notifration Required? Yes	No	Field Chlorine Free	Total	Field Turbidity	Field pH	Watertrax SPL#	Resample Y/N?	# of Bottles	Total Coliforms/ E. coli, CFU/100mL	Fecal coliform, (CFU/100mL)	Turbidity	RCAp - Comprehensive (Drinking	Coliform/E.coli,(P-A/100 ml)
TW1	June	7:30	R			0.00		6.48	7.60			6	✓	✓	✓	✓	✓
TW2	"	15:30	R			0.00		5.08	7.18			6	✓	✓	✓	✓	✓

Analysis Requested

IT IS MANDATORY THAT ALL NOTIFICATION INFORMATION BELOW BE COMPLETED PRIOR TO ANALYSIS FOR REGULATED DRINKING WATER SUBMISSIONS.

AT (TURNAROUND TIME):
RUSH TAT MUST HAVE PRIOR APPROVAL
☑ Regular (5-15 Working Days)
☐ RUSH (Specify Below)
Date Due:
RUSH #

ADVERSE NOTIFICATION INFORMATION
Waterworks Name:
Waterworks Number:
Address:
Contact:
Tel: Fax:
Cell:
Email:

Medical Officer of Health/Public Health Unit
Name/Region:
Contact:
Address:
Tel:
Fax:
After Hours:

LABORATORY USE ONLY
Received By (Print): J. V.
Received By (Sign):
Date: June 6/24 Time: 09:15
Comments
Receiving Temp: 3 / 4 / 4 °C

Sampled By (Print): Maren Catt
Sampled By (Sign): Maren Catt
Date: June 6, 2024 Time:
Relinquished By (Print): Maren Catt
*Relinquished By (Sign): Maren Catt
Date: June 6, 2024 Time:
Cooling Media Present Y/N? Y
Metals Preservation Check Y/N? N

UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS

Exceedance Summary Table – DW for Human Consumption

Result Exceedances

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

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

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

Appendix G

Greer Galloway – Technical Memorandum

November 20, 2025

Project 25-6138A

Mr. Kevin Warner, M.Sc., P.Geo.
Group Manager
Cambium Inc.

via Email: kevin.warner@cambium-inc.com

Memo Regarding Well Yield Test Supporting Hydrogeology Study by Cambium Inc. for the Property Located at 46 Eatonville Road in Prince Edward County.

Dear Kevin,

As requested, we have provided the results of our pump-down and recovery monitoring for Mr. vanclief's well. Greer Galloway was consulted on Cambium's preliminary testing results for the surplus farm dwelling and for a proposed lot severance. In our opinion, the yield and quality was insufficient to support the new lot severance but was potentially sufficient to support the proposed severance of the surplus farm dwelling from the agricultural retained lands.

Normally, we need to ensure that any new lot of record has an adequate water supply and that the lot is large enough and suitable for private sewage disposal. The situation is different if we're severing a residence from a larger agricultural property. From a Planning perspective this is desirable as it removes an encumbrance that prevents farmers from acquiring a sufficiently large land base to be economical. The test isn't the adequacy of the water supply but rather whether making an existing lot smaller would impair the ability to obtain an adequate water supply, assuming that the water supply is inadequate based on D-5-5.

For the proposed severance of an existing residence from an agricultural retained, our role is to provide the scientific/engineering context to allow the municipality to make an informed planning decision. Depending on that context, a municipality might approve a severance even with inadequate water supply for planning reasons provided that the reduction in lot area would not affect the ability to obtain adequate water. Protecting future buyers is less a concern for the latter since the residence could be bought or sold regardless of whether the agricultural portion remains part of it (we still make recommendations to protect future buyers however – things like registration on title).

We had recommended an additional full pumpdown of TW2 to better characterize the recovery and yield, however, Cambium's project manager left the firm and Greer Galloway carried out the recommended test in order to obtain data during the generational drought we've experienced in 2025.

On October 6, 2025, Hitchon Pumps was retained to pump down well TW2. This is a dug well with a diameter of 0.9 m but with two additional storage tiles emplaced at depth to create an enhanced reservoir. Drawdown and recovery were monitored using a Solinst Model 3001 data-logging pressure transducer. At the time immediately before the pump was turned on, the water level was 5.15 m below ground surface (bgs).

The well was pumped for a total of 167 minutes, discharging a total of approximately 18,000 L from the well. The flow rate was kept constant throughout the test, corresponding to a flow rate of 108 ± 5% L/min. At the time that the pump was stopped, the water level was 8.38 m bgs, for a total of 3.23 m of drawdown. The relationship between drawdown and pumping rate was used to determine the effective volume of the well vs. depth.

The recovery of the well was monitored for 8 days. A plateau in the recovery curve was observed after 3 days, so the observed recovery up to this point was used for yield calculations. Over the three days, the well recovered from 8.38 m bgs to 7.55 m bgs, for a total of 0.83 m recovered.

To draw down the water level over this depth interval (from 7.55 m bgs to 8.38 m bgs) took 37 minutes, according to the drawdown hydrograph. Based on our flow rate of 108 ± 5% L/min, a volume of 4,000 ± 5% L was pumped to draw the well down by the same amount it recovered in 3 days.

The well can therefore produce between 3,800 and 4,200 L over 3 days. This is equivalent to a yield of between 1,270 and 1,400 L/day. This quantity is insufficient to support the creation of a new lot of record, but it is likely sufficient (though marginal) for normal residential requirements. The most recent available data gives an average per capita residential water use of 187 L/day/person for Ontario (https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3810027101) so a family of four would be expected to use about 750 L on a normal day. We note that the low-yielding glacial till aquifer has considerable storage so the inferred yield would be sustainable for an extended period without dewatering the aquifer. Combined with the good water quality we consider the yield sufficient to support the severance of the surplus farm dwelling since the yield, while marginal, is sufficient if combined with augmented storage (say a 15,000 L cistern fed by the well during times of high recharge). More importantly, making the existing lot smaller would not materially impair the ability to supply potable water for the existing residence. We would recommend augmented storage and registration on title regarding the limited yield and the need for water treatment.

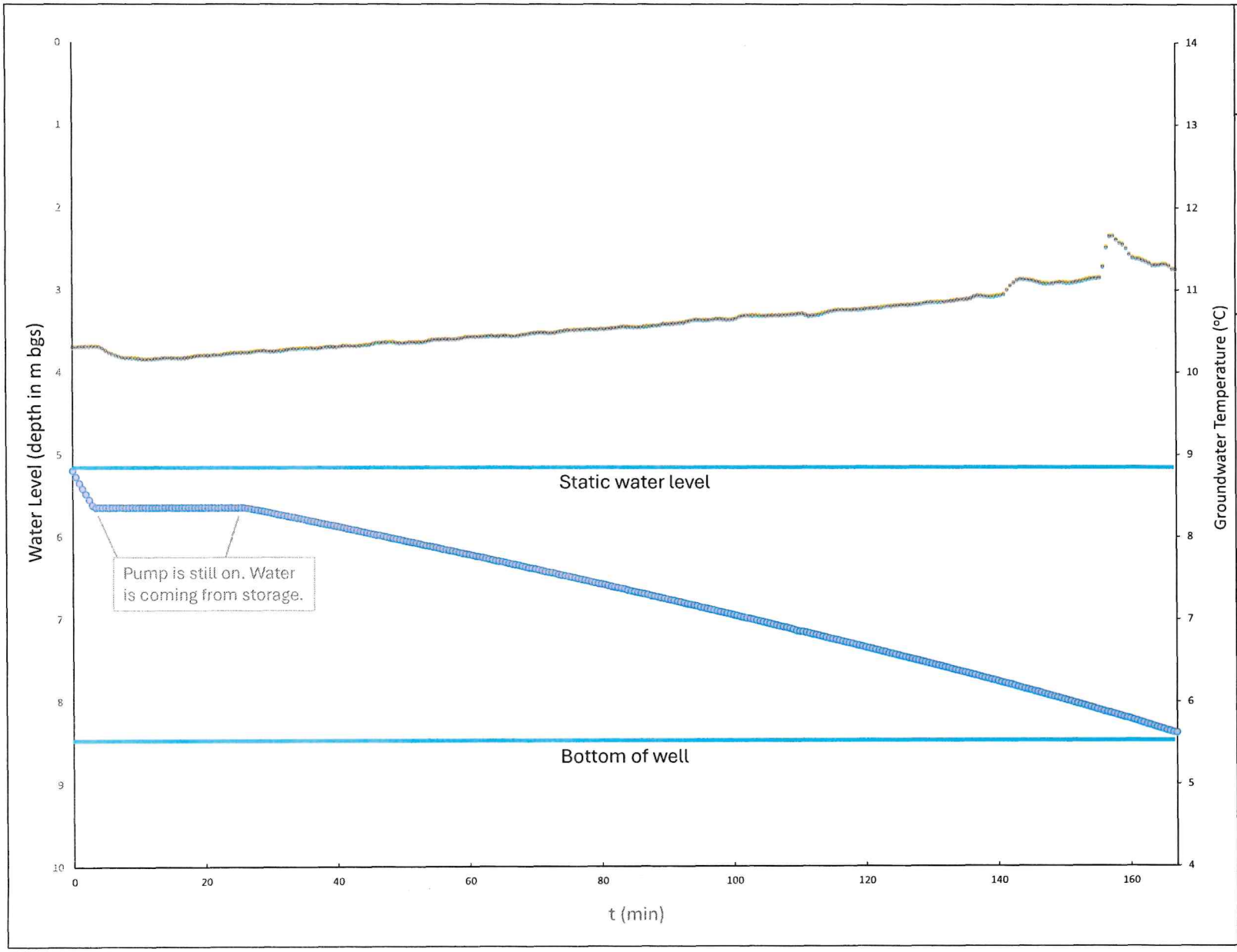
I trust that this brief letter is sufficient for your present requirements

Yours truly,

Greer Galloway, a division of Jp2g Consultants Inc.

Charles Mitz, M.Eng., Ph.D., P.Geo.
Senior Project Manager

Attachment: Hydrograph



GREER GALLOWAY
a division of Jp2g Consultants Inc.
PETERBOROUGH
BELLEVILLE
KINGSTON
1620 WALLBRIDGE LOYALIST ROAD
BELLEVILLE, ONTARIO, K8N 4Z5
PHONE: 613-966-3068
FAX: 613-966-3057

NOTES:

1) Testing Carried out October 6, 2025.
2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
3) Water level is not corrected for fluctuations in barometric pressure.

LEGEND:

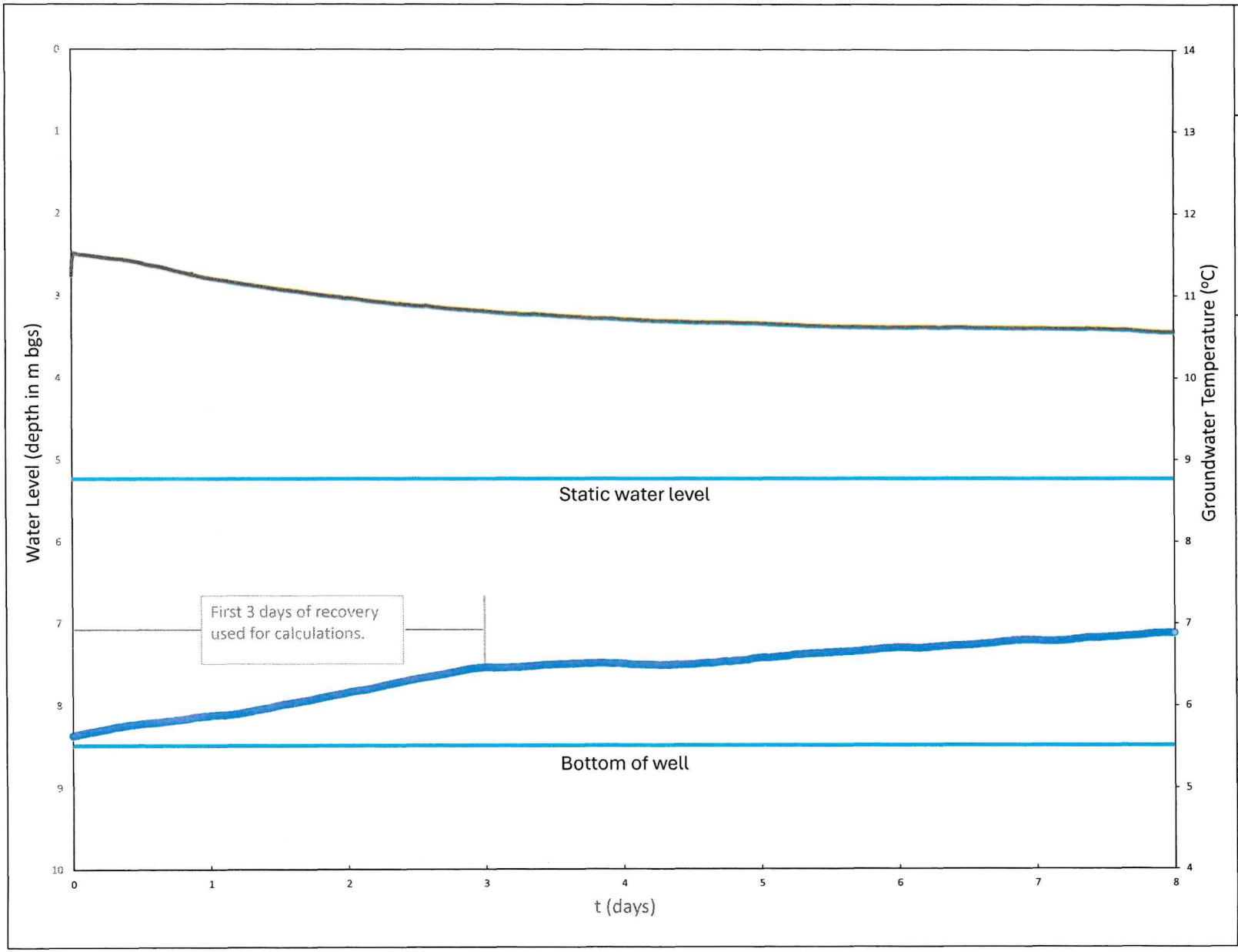
- WATER LEVEL READINGS
- TEMPERATURE READINGS

PROJECT 25-6137A:

WELL YIELD EVALUATION
46 EATONVILLE ROAD
PRINCE EDWARD COUNTY, ONTARIO

FIGURE 1:

DRAWDOWN HYDROGRAPH (TW2)
OCTOBER 6, 2025



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NOTES:

1) Testing Carried out October 6, 2025.
2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
3) Water level is not corrected for fluctuations in barometric pressure.

LEGEND:

- WATER LEVEL READINGS
- TEMPERATURE READINGS

PROJECT 25-5137A:

WELL YIELD EVALUATION
46 EATONVILLE ROAD
PRINCE EDWARD COUNTY, ONTARIO

FIGURE 2:

RECOVERY HYDROGRAPH (TW2)
OCTOBER 6-14, 2025