



Hydrogeological Report

**1812 County Road 10,
Village of Ida, Township of Cavan-
Monaghan, Ontario**

Project: 0007-001

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1.0 Introduction

Pigeonview Consulting Inc. (PV) was retained by Ian Cameron (the Client) to evaluate the hydrogeological conditions for the proposed development located at 1812 County Road 10, Village of Ida Township of Cavan-Monaghan, Ontario (the Site). The regional location of the Site is illustrated in **Figure 1**.

The Site currently exists as an approximate 125,170 square metres (m²) (30.93 acre) agricultural property that includes a two-story single family residential dwelling. The proposed development is phase 2 (Ph2) of a residential subdivision consisting of Thirty (30) lots, drawings are provided in **Appendix A**.

PV has reviewed the available relevant hydrogeological, environmental, and geotechnical information and has prepared this Hydrogeological Report as part of the *Study Requirements for Official Plan Amendments & Subdivision/Condominium Developments* provided by Peterborough County Planning Department's, November 25, 2024 Record of Pre-consultation Memo for the proposed Draft Plan of Subdivision.

PVs' scope of work for the Hydrogeological assessment includes:

- Review of hydrogeological conditions and environmental information based on previous reports prepared for the Site
- Review of subsurface soils conditions
- Groundwater level monitoring
- Hydraulic conductivity testing
- 6-hour Pumping Tests
- Water quality analysis
- Assessment of the Site's Sewage Servicing Capabilities
- Assessment of potential adverse environmental effects
- Assess MECP well records within 500 m of the Site

2.0 Site Conditions

2.1 Location and Land Usage

The Site is in the Village of Ida, Ontario, on the west side of Peterborough County Road 10, approximately 500 m south of Sharpe Line, and 500 m North of Morton Line (Google Earth, 2025). The Site is generally rectangularly shaped with a small triangular portion in the southeast corner not included, as shown on **Figure 2**. The Site is currently zoned as an *Agricultural Exception Sixteen (A-16) Zone* (Peterborough County, Cavan-Monaghan Zoning, By-law 2022-32, 2025)

At the time of this investigation, the Site contains one (1) two-story single-family residential dwelling located at the "Lot 5" area and Site entrance/driveway to the dwelling extending from "Lot 1" to "Lot 4", as per the Draft Development Plan attached at **Appendix A**. Currently, the remaining Site area is agricultural land.

Lands within 500 metres (m) of the Site are predominately agricultural (A) but also include, Rural Residential (RR), Future Development (FD), Natural Linkage (NL), and Hamlet Residential (HR) (Peterborough County's online Geographic Information System (GIS) Let me Map 2.0, 2025).

North: Hamlet Residential, Future Development

East: Agricultural, Natural Linkage

South: Rural Residential, Institutional, Agricultural

West: Agricultural, Natural Linkage

2.2 Proposed Development

The proposed Plan of Subdivision development is to consist of thirty (30) rural residential Lots with single-family dwellings, each equipped with a driveway. There is to be an internal paved road network with entrance to the subdivision from the west side of Peterborough County Road 10 (Engage Engineering 2025).

The total area of the Site is approximately 125,170 m², of which approximately 106,300 m² (10.63 ha) is proposed to be residential development lots, approximately 5,328 m² to be paved roadway network and approximately 13,500 m² to be stormwater management areas and greenspace. The proposed development drawings are included in **Appendix A**.

Lots of the Ph2 Plan of Subdivisions are to be individually serviced with private wells and wastewater systems (septic systems).

The first phase (Ph1) of the development is currently under construction around the roadway identified as Cameron Court.

3.0 Methodology

The methodologies followed to complete the field investigation are outlined in this section.

3.1 Borehole Drilling Program

Redstone Engineering Inc. (Redstone) was retained by the client to conduct a Geotechnical Investigation at the Site, which included the supervision of exploratory borehole drilling activities and preparation of the borehole logs. The exact methodology of the borehole drilling is described in Redstone's Geotechnical Report Titled:

Geotechnical Investigation Report Subdivision Development (2nd Phase) - 1812 County Road 10, Village of Ida, Township of Cavan-Monaghan, Ontario. Redstone Project No. 25R103

On May 5, 2025, Redstone oversaw the advancement of the advancement of seven (7) boreholes, denoted as BH-1 through BH-7, with depths ranging from 5.6 meters below ground surface (mbgs) to 6.1 mbgs. PV personnel were onsite during the first day of drilling activities to verify the logged soil conditions and provide direction of monitoring well installment.

Three (3) boreholes (BH-1, BH-4, and BH-6) were equipped with monitoring wells to evaluate static groundwater elevations, conduct hydraulic testing, and obtain water quality samples. All monitoring wells

were equipped with a 40-millimetre (mm) diameter, schedule-40, Polyvinyl chloride (PVC) monitoring wells, with screened intervals of 1.52 m or 3.05 m length at their base.

On May 8th, 2025, PV personnel developed the monitoring wells to ensure sound connection with the water bearing soils, using a Waterra inertial lift pump by purging at least three well volumes or until the monitoring well was purged dry. Borehole logs are provided in **Appendix B**, and a detailed Site Plan showing the borehole locations is presented in **Figure 2**.

3.2 Water Supply Well Drilling

Three (3) private Water Wells or Test Wells, denoted as TW1 through TW3, were drilled and installed at the Site by MECP licensed well drillers for the purpose of conducting pumping tests and collecting water samples to support this Hydrogeological Investigation. The Test wells were also installed with the future intent of supplying water resources to the proposed dwellings.

Test Well 1 (TW1) was installed on November 23, 2023, using dual rotary DR-12W drilling methodology and was extended to a total overall depth of 48.16 m below ground surface (mbgs). The well was constructed with 15.875 cm (6.25") steel casing extending drill termination depth.

Test 2 (TW3) was initially drilled and installed on June 4, 2025, using dual rotary DR-12W drilling methodology to a total overall depth of 29.87 mbgs. The well was constructed with 15.875 cm (6.25") steel casing extending to 27.13 mbgs with approximately 2.74 m long stainless steel well screen.

Test Well 3 (TW3) was drilled and installed on June 2, 2025, using dual rotary DR-12W drilling methodology to an overall depth of 58.83 mbgs. The well was constructed with 15.875 cm (6.25") steel casing extending to 57.61 mbgs with 1.23 m long stainless steel well screen.

All three wells were installed in the overburden soils and subject to a standard 1-hr pumping test upon completion, conducted by the MECP licensed well drillers.

Upon initial hydraulic testing, it was later decided to extend TW2 to target a similar water bearing zone as TW1 and TW3. On July 14, 2025, the screen was removed, and the overall depth of the well was increased from 29.87 mbgs to 48.16 mbgs. The drill casing and remained the same, therefore the surveyed coordinates and surface & top of pipe elevations remained the same from initial installation.

A summary of the final Test Well measurements including ground elevations, casing heights, screened and lithologies are further detailed in **Section 5.0**, copies of the Well Records are attached in **Appendix C**.

3.3 Hydraulic Testing

On May 27, 2025, PV personnel visited the Site to complete Single Well Response Tests (SWRTs) on the three (3) monitoring wells.

The SWRTs consisted of rising head testing performed by 'instantaneously' removing a pre-determined volume of water (a slug). Water level recovery back to static conditions was monitored using an automated water level logging device and validated with manual measurements. A dedicated barologger was set above the water table to allow the data to compensate for changes in atmospheric pressure.

The Constant Head Permeameter Test involves measuring the steady-state rate of water recharge into unsaturated soil from a cylindrical hole where a constant depth (head) of water is maintained. The water

level in the combined reservoir is recorded manually. The analyses of the SWRTs are attached to this Report as **Appendix D**.

3.4 Pumping Tests and Door-to-door Survey

Between June 17 and June 20, 2025, PV conducted 6-hour pumping tests on each of the three (3) water supply Test Wells located on Site, denoted at TW1 through TW3, to assess the quantities of water resources available and ensure adequate quantities of potable water for domestic consumption over both the short and long term.

One week prior to the pump testing, PV personnel conducted a door-to-door survey of the dwellings within 500m of the Site. PV personnel engaged with residents to gather information about their supply wells and request permission to complete some measurements and include them well in the monitoring network to assess the potential for well interference during the pumping tests. At each residence with no response, letters were left describing the testing activities, intended dates of testing, and request for monitoring participation. Contact information was provided and a form was attached so residents could provide details or concerns about their wells.

A well monitoring network was established comprising on-site Test Wells, on-site Monitoring Wells, and off-site Observation Wells willing to participate. The wells in the monitoring network were equipped with automated water level logging devices and validated with manual measurements during pumping and recovery phases of the testing. A dedicated barologger was set above the water table to allow the data to compensate for changes in atmospheric pressure.

The pumping test for Test Well 1 (TW1) was completed June 17, 2025. Due to TW1 already being in use domestically, water was pumped via a submersible pump previously installed in the well, and discharged through the dwelling via exterior hose bibs. The treatment system including sediment filters and Ultraviolet Light was bypassed for the duration of the test. A step-test was utilized during this test, where after approximately 3 hours of continuous pumping the pumping rate was increased, by use of an additional exterior hose bib and discharge hose.

The pumping test for Test Well 3 (TW3) was completed on June 19, 2025, and the initial pumping test for Test Well 2 (TW2) was completed on June 20, 2025. Two submersible pumps were provided and installed by the MECP licensed well-licensing contractors that drilled and installed the wells. The submersible pumps were pumped at maximum capacity with no flow restrictors on the discharge piping; no step-tests were able to be performed on these wells.

A secondary pumping test for Test Well 2 (TW2) was completed on August 8th, 2025, after the well was extended. A submersible pump supplied and installed by the well drilling contractor which again was pumped at maximum capacity with no flow restrictors or valves on the discharge piping therefore no step-test were able to be performed during this test.

The discharge points for each pumping test were ensured to be greater than 50 m away from their respective Test Well and either downhill or downgradient of the Test Well.

Upon completion of 6-hours of continuous pumping from each Test Well, the pump was turned off and water levels of the test well and monitoring network wells were monitored during well recovery to static groundwater conditions.

The locations of the Test Wells, Monitoring Wells, and Observation wells are provided on **Figure 2**.

3.5 Water Quality Sampling

Raw groundwater samples were taken from the three (3) on-site Monitoring Wells and one (1) off-site Observation Well (water supply well from a neighboring property). The samples were be tested for Nitrate-Nitrogen and Phosphates to evaluate background conditions of the shallow water bearing zone to assess sewage system loading requirements. These samples were collected using a new dedicated sterile bailer to preserve sample integrity and ensure that the results represent in-situ groundwater conditions.

One (1) raw groundwater sample was collected from each Test Well within the last hour of its' respective pumping test. Samples were collected from the discharge piping using a laboratory supplied sterile bottle and decanted into the other laboratory supplied sample analysis bottles and vials. The Test Well Samples were analyzed for all parameters listed in the Appendix of Ministry of the Environment, Conservation and Parks (MECP)'s guideline for D-5-5 Private Wells: Water Supply Assessment.

All samples were collected and handled with use of sterile nitrile gloves and packed with ice in coolers to maintain sample temperatures. The coolers were sealed and transported for analysis to SGS Canada-Environmental Laboratories, a Canadian laboratory accredited and licensed by the Standards Council of Canada and/or the Canadian Association for Laboratory Accreditation (CALA). All analytical water quality results were compared to Ontario Drinking Water Quality Standards (ODWQS). The analytical results of the water quality samples and their respect Chains of Custody (CoCs) are attached in this report as **Appendix E**.

4.0 Geologic and Hydrogeological Conditions

The following section details the literature information and field observations of surficial and subsurface conditions that contribute to the hydrogeologic setting at the Site:

4.1 Topography

The Site is situated in the physiographic region known as the Peterborough Drumlin Field, which consists of a physiographic landform known as a Till Plains and a Drumlin. (Chapman & Putnam, 2007). Drumlinized till plains generally contain thin (1 m thick) aeolian sand deposits underlain by glacial till, a heterogeneous mixture of clay, silt, sand and/or pebbles.

The topography at the Site can be generally described as being both hilly and low lying, exhibiting a medium relief of approximately 30 vertical meters from the northern limit of Site to the south. The Site is situated on a southeasterly dipping slope of a northeast-southwest trending drumlin, where the northern extents of the Site are higher up the drumlin hill and the southern extents are in the lower lying valley.

4.2 Subsurface Investigation

Surficial soils in the area are mapped as glacial deposits of till in the northern and southern portions of the Site, with a band of fine-textured glaciolacustrine deposits, trending east-west through the middle (OGS, 1991a). The glacial till is characterized as being stone-poor, sandy silt to silty sand-textured. The fine-textured glaciolacustrine deposits are characterized as being massive to well laminated silt and clay

with minor constituents of sand and gravel (OGS, 1991a). The surficial geology of the Site is included on **Figure 3**.

The boreholes completed by Redstone Engineering were used to evaluate the subsurface soil conditions at the Site. Details of the borehole advancement are summarized below in **Table 4.2A**, their locations are presented in **Figure 2**, and their corresponding borehole logs are provided in **Appendix B**.

Table 4.2A Borehole Details

Well ID	Date Installed	Ground Elevation (masl)	Borehole Depth (mbgs)	Borehole Depth (masl)
BH-1 (MW-1)	2025-05-05	266.88	4.9	261.98
BH-2	2025-05-05	274.34	4.6	269.74
BH-3	2025-05-05	263.49	4.6	258.89
BH-4 (MW-4)	2025-05-05	262.03	4.6	257.43
BH-5	2025-05-05	259.97	4.6	255.37
BH-6 (MW-6)	2025-05-05	257.78	6.1	251.68
BH-7	2025-05-05	257.26	5.0	252.26

PV has characterized the Site stratigraphy based on overburden soils encountered during Redstone's drilling program, in descending order from the surface, as shown in **Table 4.2B**:

Table 4.2B Site Stratigraphy

Fill	Surficial layer of fill, dark brown sand with gravel and cobbles, encountered in borehole BH-2, to about 0.8 mbgs.
Topsoil/Organic Silt	Surficial topsoil encountered BH-1 BH-3 and BH-7 and just below fill in BH-2. 0.1 to 0.4 m thick. Dark brown to reddish brown silt or silt and sand with clay containing organic matter
Silt/Silt & Clay/ Clayey Sandy Silt	Brown silt or silt and clay with trace sand or clayey silt encountered in BH-6 and BH-7. BH-6 contained Silt and Clay between 1.1 to 1.5 mbgs, then silt with varying sand and clay with trace gravel from 1.5 to 2.3 mbgs. BH-7 contained silt and clay with trace sand between 0.8 to 2.3 mbgs, then clayey sandy silt with varying sand and clay with trace gravel from 2.3 to 2.4 mbgs.
Sand	Fine to medium grained brown sand seams or lenses encountered in BH-1, BH-2, BH-4, and BH-5. Encountered at 2.4 to 3.2 mbgs and extends to 2.6 to 3.5 mbgs. Occurring with silt and trace gravel in BH-5.
Till	Light brown to grey till encountered in all boreholes at depths from 0.2 mbgs (BH-3) to 2.4 mbgs (BH-7) and extending to depth of borehole termination.

	Primarily silt and sand with lesser amounts of gravel and clay, cobbles detected during auguring. BH-1, BH-2, BH-4, and BH-5, contained seams or lenses of sand within the till units.
Bedrock	Bedrock was not encountered.

There is a thin surficial layer of topsoil, organic silt, or fill across the Site, with underlying native soils generally consisting of glacial till comprising silt, Silt & clayey silt or clayey sandy silt materials. The till layer in 'middle' section of Site can be found slightly deeper at up to 1.5 to 2.3 mbgs (boreholes BH-5, BH-6, and BH-7) with overlying fine-grained materials described as silt, organic silt, and silt & clay. Some lenses and/or seams of sand, approximately 0.1 to 0.9 m in thickness were also encountered in variety of boreholes. These findings are generally consistent with the surficial soils mapped by the Ontario Geological Survey (OGS), as described earlier in this Section.

Excavations associated with foundation and service installment for proposed development are expected to occur within these soils.

Bedrock

Bedrock was not encountered during drilling activities and water supply wells proximal to the Site appear to be installed in overburden soils rather than bedrock, however based on well records obtained from the MECP database, bedrock is assumed to be greater than 85 mbgs. Bedrock in the area is mapped as Middle Ordovician deposits comprising limestone, dolostone, shale, arkose, and sandstone of the Ottawa and Simcoe Groups, belonging to the Shadow Lake Formation (OGS, 1991b).

4.1 Hydrogeological Setting

4.1.1 Surface Drainage and Shallow Overburden Aquifer

The soils encountered with Redstone's borehole drilling program host what is understood to be a shallow unconfined water-bearing zone (or aquifer), reflected by the water levels recorded from on-Site monitoring wells, as detailed further in **Section 5.1**. Shallow unconfined aquifers can be especially susceptible to influence of precipitation events, surface drainage, and seasonal water level variations.

On-Site surficial drainage and local groundwater gradients of the shallow aquifer are under strong influence of the drumlinized topography present at the Site. Their flow directions are expected to contour the primary topography in a general southeastern direction, towards the low-lying valley and western ditch line of Peterborough County Road 10. There are no surface water features present at the Site; the closest feature is an unnamed/unverified swamp approximately 350m southeast of the Site.

Site re-grading, cut/fill earthworks, and stormwater management associated with the proposed development are not anticipated to significantly alter the drumlinized topography or impact general surface drainage and shallow groundwater flow directions.

The shallow aquifer is not expected to supply drinking water resources for groundwater users at the Site or down gradient of it. However, the shallow aquifer is expected to receive discharge from the private on-site wastewater (septic) systems of the proposed development.

4.1.2 Deep Overburden Aquifer

Water supply wells at the Site and most newer supply wells proximal to the Site are installed in a deeper water-bearing zone or aquifer. The Test Wells at the Site were advanced to depths ranging from 48.16 mbgs to 58.83 mbgs, targeting a coarser grained gravelly/sandy soil unit, interpreted to be confined by upper layers of till materials and soils of higher abundance of clay sized particles. The deeper overburden aquifer is not interpreted to be connected hydraulically to the upper overburden aquifer.

Regional groundwater flows of the deeper drinking water aquifer are interpreted to be in the same general direction as the shallow system, in a southeastern direction towards the Otonabee River and Rice Lake.

5.0 Groundwater Results and Analysis

5.1 Water Level Monitoring

From May 8, 2025, to September 26, 2025, PV completed six (6) Site visits to obtain water level measurements from the following three (3) shallow monitoring wells: BH-1, BH-4, and BH-6.

The locations of the Monitoring and Test wells are shown in **Figure 2**, and the well installation details and groundwater monitoring results are summarized below in **Table 4.3.1** and **Table 4.3.2**.

Table 4.3.1 Monitoring Well Summary and Groundwater Elevations

Well ID	Screened Unit and Screen Depth (masl)	Ground Elevation (masl)	Static Water Level Measurements			
			Date (YYYY-MM-DD)	Water Level (mbgs)	Water Elevation (masl)	Average (masl)
BH-1 (MW-1)	Silt and Sand till w. Narrow Sand seam/Lense 265.38 – 262.33	266.88	2025-05-05	1.45	265.43	265.12*
			2025-05-12	1.63	265.25	
			2025-05-27	1.37	265.51	
			2025-06-19	2.58	264.30	
			2025-08-08	DRY	DRY (<262.33)	
			2025-09-26	DRY	DRY (<262.33)	
BH-4 (MW-4)	Silty Sand Till w. ~15 cm Sand seam 259.56 – 258.04	262.03	2025-05-05	0.56	261.47	260.60*
			2025-05-12	0.75	261.28	
			2025-05-27	0.50	261.53	
			2025-06-19	1.51	260.52	
			2025-08-08	3.85	258.18	
			2025-09-26	DRY	DRY (<258.04)	
BH-6 (MW-6)	Silt and Sand Till 253.20 – 251.68	257.78	2025-05-05	2.34	255.44	255.05*
			2025-05-12	2.66	255.12	
			2025-05-27	2.15	255.63	

			2025-06-19	3.75	254.03	
			2025-08-08	DRY	DRY (<251.68)	
			2025-09-26	DRY	DRY (<251.68)	

**Average groundwater elevation does not include DRY measurements.*

During the water level monitoring period, shallow groundwater elevations at the Site ranged from 265.51 masl to less than 251.68 masl. Based on the groundwater elevations, the screened units are interpreted to be all hydrologically connected as part of a shallow unconfined aquifer system and is interpreted to flow in a southeastern direction.

From June 6, 2025, to September 26, 2025, PV personnel completed three (3) Site visits to measure groundwater levels from the following three (3) deep overburden Test Wells: TW1, TW2, and TW3.

Table 4.3.2 Test Well Summary and Groundwater Elevations

Well ID & Tag #	Screened Unit and Screen Depth (masl)	Ground Elevation (masl)	Static Water Level Measurements			
			Date (YYYY-MM-DD)	Water Level (mbgs)	Water Elevation (masl)	Average (masl)
TW1 A377810	Fine Sand - Gravel & Fine Sand, No screen indicated on record, well extends to 233.14	281.39	2025-06-05	31.15	250.24	249.84
			2025-08-12	31.6	249.73	
			2025-09-26	31.79	249.56	
TW2 A411098	Coarse Gravel & Sand 218.12– 216.90	265.06	2025-06-05	14.61*	250.45*	249.59**
			2025-08-12	15.38	249.68	
			2025-09-26	15.57	249.49	
TW3 A411099	Coarse Gravel & Sand 217.96– 216.74	275.57	2025-06-05	27.59	247.41	247.91
			2025-08-12	27.86	247.14	
			2025-09-26	28.08	246.91	

*Water Level measured prior to well deepening.

**Average Groundwater Elevation does not include water level prior to well deepening.

During the monitoring period for the Test Wells, deep groundwater elevations ranged from 250.45 masl to 246.91 masl. The Test Wells are interpreted to all be installed in the same deep overburden aquifer and groundwater flow direction of this aquifer is in a more southern to south -western direction. However, it is noted that the bottom of well TW1 is located approximately 16 m above the bottoms of well TW2 and TW3, and it could possibly be intersecting a secondary deep water-bearing zone.

Water levels across the Site can be expected to fluctuate throughout the year in response to seasonal variations and precipitation events. Surface water drainage from the lands north of the Site may also contribute significantly to water level fluctuations, especially in Monitoring Wells BH-1 and BH-6, which are located closer to the Peterborough County Road 10 ditch line.

5.2 Single Well Response Tests (Shallow Aquifer)

On May 27, 2025, PV was on-Site to complete single well response tests (SWRTs) in three (3) on-site monitoring wells: BH-1, BH-4, and BH-6.

For each SWRT, a 'slug' of water was removed from the well and the water level recovery was monitored and analyzed for 30 minutes thereafter. Estimations of hydraulic conductivity were made in Waterloo Hydrogeologic-AquiferTest Analysis Software using the Hvorslev Method (Hvorslev, 1951). Hydraulic Conductivity analysis graphs for each SWRT are provided in **Appendix D**.

The Hvorslev Method was chosen for its versatility and is based on the following assumptions:

- Water-bearing unit has infinite areal extent;
- Water-bearing unit is homogeneous and of uniform thickness;
- Water bearing unit is confined or unconfined;
- Water table is initially horizontal before testing;
- The well is fully or partially penetrating into the water-bearing unit;
- The slug is instantaneously removed from the well; and
- Groundwater flow is steady.

The estimated hydraulic conductivity results for all SWRTs are presented in **Table 4.4**.

Table 4.4: Hydraulic Conductivity Results from Single Well Response Tests

Well ID	Screened Unit	Screen Interval (masl)	SWRT	Hydraulic Conductivity (m/s)	Geometric Mean (m/s)
BH-1	Silt and Sand Till w. Narrow Sand Lense	265.38 – 262.33	1	1.3×10^{-6}	1.1×10^{-6}
			2	1.0×10^{-6}	
			3	1.1×10^{-6}	
BH-4	Silty Sand Till w. ~15 cm Sand seam	259.56 – 258.04	1	2.2×10^{-6}	3.4×10^{-6}
			2	4.5×10^{-6}	
			2	4.1×10^{-6}	
BH-6	Silt and Sand Till	253.20 – 251.68	1	2.6×10^{-5}	2.8×10^{-5}
			2	3.0×10^{-5}	
Geometric Mean Hydraulic Conductivity (m/s) for all SWRTs					3.8×10^{-6}

The estimated hydraulic conductivities of the upper overburden aquifer ranged from 1.0×10^{-6} m/s to 3.0×10^{-5} m/s, with an overall geometric mean of 3.8×10^{-6} m/s.

The borehole logs (**Appendix B**) indicate that all monitoring wells are screened across silt and sand to silty sand water-bearing till materials. The geometric mean for hydraulic conductivity estimates of the till unit are of an order magnitude of 10^{-6} m/s, which is within the textbook range for silty sand and till materials denoted by Freeze & Cherry (1979).

5.1 Pumping Tests (Deep Aquifer)

PV personnel were on Site June 17, June 19th, June 20th, and August 8th to conduct pumping tests on Test Wells: TW1, TW2, and TW3. Each test consisted of a pumping phase, with 6 hours of continuous pumping from a test well followed by a recovery phase, when test wells would recharge back to static conditions.

Prior to any testing the test wells and the wells include in the monitoring program were equipped with automated water level logging devices. The locations of the wells are displayed on **Figure 2**.

Below is a brief summary of the details of the test wells and monitoring program wells:

- BH-1: on-site shallow monitoring well, 4.55 m deep
- BH-4: on-site shallow monitoring well, 3.98 m deep
- BH-6: on-site shallow monitoring well, 6.19 m deep
- OW1: Offsite drilled supply well, 14.13 m deep
- OW2: Offsite dug supply well, 11.72 m deep
- TW1: on-site drilled test well, 48.16 m deep
- TW2: on-site drilled test well, 48.16 m deep
- TW3: on-site drilled test well, 58.83m deep

The MECP's D-5-5 Guideline states that: *"The per-person requirement shall be 450 litres per day. Peak demand occurs for a period of 120 minutes each day... equivalent to a peak demand rate of 3.75 litres/minute for each person. The basic minimum pumping test rate is this rate multiplied by the "likely number of persons per well" which, for a single-family residence, shall be the number of bedrooms plus one. A minimum of four (4) bedrooms must be assumed and that the test rate shall not be less than 13.7 L/min.*

Using the above rate requirements and assuming a 4-bedroom dwelling, the pumping rate would be 18.75 L/min and assuming a 5-bedroom dwelling the pumping rate would be 22.5 L/min. The approximate average test rates used during the pumping tests were 30 L/min, 45 L/min, and 50 L/min, exceeding the MECP's minimum required pumping rate.

The results of the pumping tests are detailed below and each Test Well's pumping test hydrograph along with the corresponding monitoring network's hydrograph are included in **Appendix E**.

5.1.1 Pumping Test 1: TW1

On June 17th, 2025, PV Personnel conducted a pumping test on Test Well TW1. Static water level was at 31.3 m from the Top of Pipe (TOP), and the top of the submersible pump was measured at 53.5 mTOP, providing approximately 22.22 m of available drawdown.

TW1 was pumped at an average rate of 21 L/min (5.6 USGPM) for 2.5 hours after which the average rate was increased to 28.7 L/min (7.6 USGPM) for an additional 3.75 hours. Approximately 9,200 Liters of groundwater was discharged in total from Test Well TW1 during the pumping phase of the test, yielding a maximum drawdown of approximately 1.6 m.

As previously discussed in **Section 3.2**, TW1 is currently being used to supply water resources to a dwelling on the development property and that pumping test water was being directed through the house, bypassing the filtration/treatment system, and being discharged through two exterior hose bibs.

Initial drawdown of 1.45 m was achieved within the first 3 minutes of the pumping test. The cyclic nature of the water level observed after that is reflective of an interior pressure tank switch turning the well pump off and on. Once the pumping rate was increased, maximum drawdown was achieved in

approximately 6-minutes, and dynamic equilibrium was achieved approximately 10 minutes after that at a water level between 32.82 mTOP and 32.76 mTOP.

Once pumping ceased, the recovery phase of the test was initiated water level in TW1 recovered to static conditions within 6 minutes.

No water level response or interference was observed in the monitoring network wells. A couple water level fluctuations were observed in OW1 during the pumping test and are interpreted to be a result of the residence using the well during the day.

5.1.2 Pumping Test 2: TW3

On June 19th, 2025, PV Personnel conducted a pumping test on Test Well TW3. Static water level was at 28.16 mTOP and the top of the submersible pump was measured at 35.74 mTOP, providing approximately 7.6 m of available drawdown.

TW3 was pumped at an average rate of 44.3 L/min (11.7 USGPM) for the duration of the pumping phase of the test (6 hours, 7 Minutes). Approximately 16,500 liters of groundwater was discharged in total from Test Well TW3 during the pumping phase of the test, yielding a maximum drawdown of approximately 5.9 m.

The water level in TW3 rapidly declined to 5.4 m below static, 91% of the maximum drawdown. Within the first 10 minutes of pumping. The water level continued to slowly decline over the duration of the test to the lowest level of 34.10 mTOP or 5.9 m below static (maximum drawdown).

Once pumping was ceased, the water level in TW3 rapidly recovered to a water level of 28.21 mTOP within 13-minutes and recovered to static conditions within 19 minutes.

No water level response or interference was observed in the monitoring network wells. A few water level fluctuations were observed in OW1 and TW1 during the pumping test, these are interpreted to be minor pumping events in response to those residents using their wells during testing.

5.1.3 Pumping Test 3: TW2

On June 20th, 2025, PV personnel conducted a pumping test on test Well TW2. Static water level was at 15.30 mTOP and the top of the submersible pump was measured at 25.02 mTOP, providing approximately 9.7 m of available drawdown.

TW2 was pumped at an average rate of 50.1 L/min (13.2 USGPM) for the duration of the pumping phase of the test (6 hours, 8 Minutes). Approximately 18,600 liters of groundwater was discharged in total from Test Well TW2 during the pumping phase of the test, yielding a maximum drawdown of approximately 3.1 m.

Within the first 10-minutes of pumping, the water level in TW2 rapidly fell to 3.0 m below static equating to 96% of the maximum drawdown. The water level continued to decline slowly over the duration of the pumping phase to the lowest level of 18.44 mTOP or 3.1 m below static (maximum drawdown).

Once pumping ceased and the recovery phase initiated, the water level in TW2 rapidly rose to 15.39 mTOP, 97% of the maximum drawdown within the first 10-minute.

No water level response or interference was observed in the monitoring network wells, despite shallow monitoring well BH-1, being located only 25 m away from Test Well TW2. This further indicates that the shallow overburden aquifer and the deep overburden aquifer are not directly hydraulically connected.

A few water level fluctuations were observed in TW1 during the pumping test which are interpreted to be minor pumping events in response to the resident using the well during testing.

5.1.4 Pumping Test 4: TW2 Re-test

As mentioned in **Section 3.2** on July 15th, 2025, Test Well TW2 was deepened after the initial pumping test. The well was extended from 27.4 mbgs to 48.16 mbgs and a secondary pumping test was required.

On August 8, 2025, PV personnel returned to the Site to complete an updated pumping test. Static water level was 16.92 mTOP and the top of the submersible pump was measured at 50.30 mTOP, providing approximately 33.4 m of available drawdown. At the time of testing monitoring wells BH-1 and BH-6 were observed to be dry, the wells included in the monitoring network were reduced to: TW1, TW3, BH-4, and OW1.

TW2 was pumped at an average rate of 51.3 L/min (13.6 USGPM) for the duration of the pumping phase of the test (5 hours, 58 Minutes). Approximately 18,200 liters of groundwater was discharged in total from Test Well TW2 during the pumping phase of the test, yielding a maximum drawdown of approximately 1.6 m.

Within the first 10-minutes of pumping, the water level in TW2 rapidly fell to 1.5 m below static equating to 93% of the maximum achieved drawdown. The water level continued to decline slowly over the duration of the pumping phase to the lowest level of 18.45 mTOP or 1.6m below static (maximum drawdown).

Once pumping ceased and recovery phase was initiated, the water level of TW2 recovered to static conditions within 3 minutes.

No water level response or interference was observed in the monitoring network wells.

5.1.5 Potential for servicing proposed development

The pumping rate used for each test well's pumping test was significantly greater than the D-5-5 recommendation for an assumed 5-bedroom dwelling. Dynamic equilibrium or steady-state drawdown was essentially achieved under the pumping conditions for each test well. The maximum drawdown measured during pumping in each test well was relatively minimal in relation to available drawdown, with 5.9 m being the greatest drawdown achieved. Each test well rapidly recharged during its recovery phase of the pumping test, with the slowest well taking approximately 19 minutes to recharge to static conditions. Additionally, no well interference or water level drawdown was observed in any of the observation wells during each of the pumping tests.

The results of the pumping tests indicate that there are abundant water resources available in the deep aquifer that the test wells are installed in, and it is believed this aquifer is more than capable of producing sufficient water resources to service the proposed 30-lot subdivision.

5.2 Groundwater Quality Testing

Background Nitrate-Nitrogen and Phosphates samples were collected from three (3) on-Site monitoring wells and one (1) off-site Observation Well (water supply well from neighboring property) to assess the proposed sewage system loading conditions for the Site.

On May 12, 2025, PV personnel visited the Site to collect groundwater samples from Monitoring Wells BH-1 and BH-6. PV returned to Site on July 9, 2025, to collect samples from Monitoring Well BH-4 and Observation Well OW1.

The results of the water quality samples were compared against the Ontario Drinking Water Quality Standards (ODWQS), summarized below in **Table 5.2.1**, and discussed further in **Section 0** The certificates of analysis and sample Chains of Custody are attached in **Appendix F**.

Table 5.2.1: Background Nitrate-Nitrogen and Phosphates						
Water Quality Parameters	Units	Criteria Limit	Sample ID and Date collected			
			BH-1 12/05/2025	BH-4 09/07/2025	BH-6 12/05/2025	OW1 09/07/2025
Total Reactive Phosphorous (o-Phosphate as P)	mg/L	-	<0.03	<0.03	<0.03	<0.03
Nitrite (as N)	mg/L	1	<0.03	<0.03	<0.03	<0.03
Nitrate (as N)	mg/L	10	0.85	0.13	3.88	1.33
Nitrate + Nitrite	mg/L	-	0.85	0.13	3.88	1.33

Raw groundwater samples were also collected from each of the three (3) Test Wells within the last hour of their respective pumping test. The Test Well samples were analyzed for all parameters listed in the Appendix of Ministry of the Environment, Conservation and Parks (MECP)'s guideline for D-5-5 Private Wells: Water Supply Assessment.

As mentioned in **Section 3.2** Test Well TW2 was deepened after its' initial pumping test and a secondary D-5-5 water sample was collected during the TW2 pumping re-test. The water quality results of the first TW2 sample were deemed obsolete and only the secondary D-5-5 sample results are included in this report.

The Test Well samples were compared against the ODWQS criteria, the exceedances are summarized below in **Table 5.2.2**. Certificates of analysis and sample Chains of Custody are attached in **Appendix F**.

Table 5.2.2: D-5-5 Water Quality Sample Exceeding OWDQS					
Water Quality Parameters	Units	Criteria Limit	Sample Results		
			TW1	TW2	TW3
Colour	TCU	5	-	-	6
Turbidity	NTU	1	7	18	1.7
Hardness	Mg/L as CaCO ₃	100	278	310	296

Iron	µg/L	300	600	1500	-
Sodium	µg/L	20000	-	22000	-
E.coli	MPN/100mL	0	1	-	-
Total Coliform	MPN/100mL	0	6	1	-

Excluding concentrations of E.coli and Total coliform detected in TW1 sample and Total coliform in TW2 sample, all other parameter exceedances can be typical of untreated overburden groundwater quality. Concentrations of these parameters exceedances can be mitigated or treated with standard residential filtration, UV treatment, and/or water softening systems.

However, the presence of total coliforms can be indicative of influence of surface water and or human/animal waste. resampling of test wells TW1 and TW2 for bacteria/microbiology is recommended.

Groundwater quality can be expected to change over time, PV recommends consulting a water treatment specialist on a well-to-well basis to determine the most optimal treatment solutions for each supply well of the proposed development.

6.0 Individual On-Site Sewage Systems Risk Assessment

The Phase 2 Plan of Subdivision proposed for the Site includes the segregation of thirty (30) residential lots, each containing a single detached residential dwelling to be serviced with an individual on-Site wastewater system.

The MECP's guideline for *Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment* is used to evaluate the feasibility of utilizing on-site sewage disposal for the proposed development.

A Site grading plan or Site Cut and Fill Plan for the proposed development were not issued at the time of this investigation, therefore the soils units immediately above the shallow overburden aquifer have been assumed to be the direct receiver for wastewater effluent and the shallow aquifer is considered to be the groundwater receiver for sewage effluent of the proposed development.

As mentioned in **Section 4.1.2** and throughout this report, the shallow aquifer at the Site is not interpreted to be directly hydraulically connected to the deeper overburden aquifer that is generally targeted for drinking water supply.

6.1 Percolation Rate (T-times)

As mentioned in **Section 3.1** Redstone Engineering was retained by the client to conduct a Geotechnical Investigation at the Site which included collection of soils samples for physical laboratory testing from the exploratory boreholes. Three (3) of the soil samples Redstone set to the laboratory for rain size distribution analysis were evaluated for estimated percolation rates (T-time). These samples were obtained from soil units immediately below the topsoil/organic layer and above the shallow aquifer.

A summary of the grain size analysis and estimated percolation times is provided below in **Table 6.1**. The analysis reports are attached as **Appendix G**.

Table 6.1: Gran Size Analysis Summary and Percolation Time

Sample Location	Sample Depth (mbgs)	Sample Description	Classification	Estimated T-Time (mins/cm)
BH-1	0.76 - 1.37	Silty Sand, some clay, trace of gravel	ML	30-35
BH-3	0.76 - 1.37	Sandy Clayey Silt trace, of gravel	ML	35-40
BH-5	0.76 - 1.37	Sandy Silt, some clay	ML	40-45

It should be noted that these t-times are estimates of percolations rates of the soils and in-situ percolation testing is recommended for a more accurate T-time for septic leaching bed design.

6.2 Background Nitrate-Nitrogen Water Quality

Nitrate in groundwater is considered a contaminant of concern due to health concerns relating to human consumption from drinking water. Nitrate is expected to be a constituent of contaminant plumes from wastewater effluent.

Ambient nitrate conditions were evaluated from three (3) on-Site monitoring wells (BH-1, BH-4, BH-6) and one (1) off-site supply well (OW1), to aid in assessing the potential for elevating nitrate concentrations in the effluent receiving aquifer above the ODWQS of 10 mg/L. The samples from the monitoring wells were used to evaluate background nitrate-nitrogen conditions of the shallow overburden aquifer. The sample from the OW1 was used to evaluate background nitrogen nitrate-nitrogen conditions of drinking water down gradient of the Site

The results of the water quality sampling are discussed in **Section 5.2** below is a summary of the nitrate results:

- BH-1 – 0.85 mg/L Nitrate (as N)
- BH-4 - 0.13 mg/L Nitrate (as N)
- BH-6 - 3.88 mg/L Nitrate (as N)
- OW1 – 1.33 mg/L Nitrate (as N)

Generally, the ambient nitrate concentrations around the Site are relatively low, with 3.88 mg/L being the highest, recorded from BH-6 on May 12, 2025.

The BH-6 monitoring well is located in the mid-site valley, discussed in **Section 4.1** close to the Peterborough County Road 10 ditch line and is the most downgradient observation well at the Site. The soil of this monitoring well is anticipated to receive significant contributions of surface water flows from the lands north of the Site. Drainage from agricultural lands and century old farms and farmhouses could pose a negative impact on concentrations of nitrate observed at this well location. Nitrate concentrations in the groundwater in this area of the Site may fluctuate seasonally, in response to increased surface drainage and ponding in the low-laying valley.

Though the deep overburden aquifer, targeted for drinking water resources is not considered to be directly connected to the shallow unconfined aquifer anticipated to receive wastewater effluent, it should be noted that elevated concentrations of nitrate (7.94 mg/L) were present in the D-5-5 water quality

sample from the Test Well TW3. However, a nitrate concentration of 1.33 mg/L was reported for a further down-gradient off-site supply well (OW1), proximal to the Site boundary.

6.3 Nitrate-Nitrogen Loading

The MECP's D-5-4 Guideline uses the ODWQS limit of 10 mg/L of nitrate-nitrogen as an indicator of groundwater impact potential and requires the effluent plume at the Site boundary to be within that limit to prevent contamination of groundwater for users of adjacent properties.

The proposed development includes thirty (30) individual on-Site wastewater systems that will indirectly discharge to the shallow unconfined overburden aquifer. A predictive assessment is used to assess the combined impact of individual on-site sewage systems at the boundary of the proposed residential development.

Although natural processes and soil interactions can aid in attenuation of nitrate in the receiving aquifer system, the MECP's D-5-4 Guideline states that only dilution will be accepted as a quantifiable attenuation mechanism for nitrate. As such, a mass balance calculation is used to evaluate the impact of nitrogen loading for the proposed development.

6.3.1 Dilution Available

The total available dilution for the Site is estimated by the following equation: $Q_i = A \times S \times I$

Where:

Q_i is Volume of Available dilution water

S is the precipitation water surplus

A is the total pervious site area

I is an infiltration factor.

As stated in the D-5-4 Guideline, dilution models involve dilution of effluent with infiltrating precipitation water surplus and must be based on site specific factors such as soils, topography, surface geology, and impermeable areas (including roof tops and paved areas).

The infiltration factor is determined based on the following components, derived from an MECP's *Stormwater Management Planning and Design Manual*:

Topography	-	0.25 (Combination of rolling land (0.2) and Flat Land (0.3))
Soils	-	0.3 (Sandy silt soils, medium combinations of loam and clay)
Cover	-	0.1 (Cultivated Land)

Infiltration factor (I) = 0.65

According to the Environment Canada Climatic Normals (1981-2010), the annual precipitation received at the Peterborough Climatic Station is 760 mm/yr, the potential evapotranspiration is calculated to be 535 mm/yr, the resulting precipitation surplus (S) is 305 mm/yr for the Site.

Applying an infiltration factor of 0.65 to the precipitation surplus, the infiltration rate is 198.25 mm/yr, which is in within the range typical of groundwater recharge rate for silty sands to sandy silts soils (150 to 200mm/yr).

According to the 2024 Tax Bill for the property, the total Site area is approximately 125,170 m² (30.93 acres). The total pervious area (**A**) of the Site is 111,741 m² which is a result of the total area less the total impervious area.

The total impervious area of the Site comprises the paved areas of the internal road network, and the driveways and building footprints of each lot. The area of the internal road network area is calculated to be 5,328 m², assuming 7m wide roadways of approximately 620 m of length and 13 m radii for the cul-de-sacs. The impervious area per lot is calculated to be 270 m², assuming 180 m² dwelling footprint and 90 m² driveway. With 30 Lots being proposed, the total impervious area of the Site is 13,428 m².

The total volume of available dilution (**Q_i**) for the Site is calculated as:

$$Q_i = A (111,741 \text{ m}^2) \times S (0.305 \text{ m/yr}) \times I (0.65)$$

$$Q_i = 22,156 \text{ m}^3/\text{year} (60.7 \text{ m}^3/\text{day})$$

6.3.2 Predictive Assessment

The MECP's D-5-4 Guidelines states that if dilution water is used in mass balance calculations, the volume of sewage effluent should not exceed 1000 L/day/lot and that a nitrate loading of 40 grams/lot/day per residential dwelling is used to determine the effluent loading from conventional septic systems on the receiving groundwater system.

The following mass balance equation is used to determine the sewage loading for nitrate at the property boundary:

$$Q_t C_t = Q_e C_e + Q_i C_i$$

Where:

Q_t is total volume (**Q_e** + **Q_i**)

C_t is total concentration of nitrate at the property boundary

Q_e is volume of septic effluent (1,000 L/day x 30 lots = 30,000 L/day)

C_e is concentration of nitrate in effluent (40 mg/L)

Q_i is Volume of available dilution water (60,690 L/day)

C_i is Concentration of nitrate in dilution water (0.1 mg/L)

The mass balance equation is rearranged as follows to calculate the concentration of nitrate at the property boundary (**C_t**):

$$C_t = \frac{Q_e C_e + Q_i C_i}{Q_t}$$

$$C_t = \frac{(30,000 \text{ L/day})(40 \text{ mg/L}) + (60,690 \text{ L/day})(0.1 \text{ mg/L})}{(30,000 \text{ L/day} + (60,690 \text{ L/day}))}$$

$$C_t = 13.3 \text{ mg/L}$$

A nitrate concentration of 13.3 mg/L at the Site property boundary was determined by mass balance calculation, considering a development of 30 residential lots, each serviced by conventional septic systems.

To proceed with the proposed 30-lot development and maintain a nitrate concentration equal to or less than 10 mg/L at the Site boundary, tertiary treatment units or systems such as: Waterloo Biofilter Systems, Ecoflow Biofilter Treatment Systems, Bionest Technologies, etc. would be required for each lot. Use of tertiary treatments systems as part of a residential Class 4 sewage system are becoming increasingly common and can be designed to maintain compliance with Part 8 of the Ontario Building Code. Independent testing has verified that tertiary treatment systems can reduce total nitrogen concentrations of septic tank effluent to between 59 to 84%. Also, additional NOx systems could potentially be added to the treatment train to reduce total nitrogen to less than 5 mg/L. If required, PV recommends consulting with a wastewater specialist to evaluate potential suitable nitrogen-nitrate treatment options. As a conservative approach, the mass balance equation has been recalculated with a 50% reduction of the nitrate concentration for the effluent (20 mg/L) to evaluate the addition of a tertiary treatment system.

As such,

$$C_t = \frac{(30,000 \text{ L/day})(20 \text{ mg/L}) + (60,690 \text{ L/day})(0.1 \text{ mg/L})}{(30,000 \text{ L/day} + (60,690 \text{ L/day}))}$$

$$C_t = 6.68 \text{ mg/L}$$

It is plausible for the Site to support 30 residential lots by means of utilizing tertiary treatment units with the individual on-site wastewater treatment systems, while maintaining nitrate concentrations below 10 mg/L at the down-gradient Site boundary.

As detailed above in **Sections 5.2 and 6.2**, background nitrate concentrations of the shallow aquifer were observed to range from 0.13 to 3.88 mg/L, with the most elevated concentrations being detected monitoring well BH-6. As discussed in **Section 6.2** shallow groundwater in the area proximal to BH-6 may be subject to more significant variations of quality, attributed to collection and ponding of surface water drainage from the lands north of the Site associated with the Peterborough County Road 10 stormwater management features (ditch line and culvert). The elevated concentrations reported for this monitoring well may be influenced by historical and ongoing agricultural activities on and around the Site.

Regardless of whether the wastewater systems for the proposed development utilize conventional septic tank treatment units or the addition of tertiary treatment units, the shallow unconfined aquifer identified as the receiving aquifer of sewage effluent is interpreted to not be directly hydraulically connected to the deeper overburden aquifer targeted for drinking water resources. This indicates a very minimal risk for downgradient groundwater users to experience elevated nitrate-nitrogen concentrations in their supply wells as a result of the proposed development.

7.0 Potential for Adverse Effects

The following section identifies the potential for adverse environmental effects resulting from the proposed development.

7.1 Regulated and Sensitive Areas

According to The Ministry of Environment, Conservation and Parks' (MECP) Source Protection Information Atlas (MECP, 2021), the Site is not located in an area of development control as defined by the Niagara Escarpment Planning & Development Act.

The Site is located in the Otonabee Region Conservation Authority (ORCA) jurisdiction. Though there are no regulated areas or features on Site, there are two (2) ORCA area buffers that extend onto the site slightly, one at the southeast corner and one at the southwest corner. Both off-Site buffers are associated with drainage features that contribute to the Cavan Creek and Cavan Creek Swamp.

7.2 GUDI Assessment

A preliminary screening assessment was completed to determine if any of the three (3) test wells would be defined as a GUDI (groundwater under the direct influence of surface water) well. According to O.Reg., 170/03, a well is defined as GUDI if one of the following criteria apply:

1. Well that is not drilled – GUDI
2. Drilled well without casing to at least 6 meters below grade – GUDI
3. If an infiltration gallery is used – GUDI
4. Any water supply < 0.58 L/sec within 15 meters of surface water – GUDI
5. Overburden water supply > 0.58 L/sec, within 100 meters of surface water – GUDI
6. Bedrock water supply > 0.58 L/sec, within 500 meters of surface water – GUDI
7. Any evidence of surface water contamination – GUDI

Based on the above criteria and an assessment of the water quality of the samples collected during the pumping tests, on-Site Test Well (TW1, TW2 and TW3) are determined to not be GUDI.

7.3 MECP Well Records and Groundwater Resources

A search of the Ministry of Environment, Conservation and Parks (MECP) water well records within 500 m of the Site was completed to help assess the risk for potential interference for other groundwater users relating to groundwater usage and effluent discharge associated with the proposed development.

There were thirty-one (31) well records identified within the 500 m area surrounding the Site. Two (2) of the well records detailed livestock usage, three (3) were detailed as Test Holes, and the remaining twenty-six (26) records were detailed as being for domestic supply.

Eight (8) of the domestic supply wells records were also detailed as being 30-36-inch diameter concrete cased wells, extending to a maximum depth of approximately 15 mbgs. Six (6) of these concrete cased wells are detailed as being installed in the 1970's and mapped as being approximately 450 m up hydraulic

gradient of the Site. The well record with well ID: "1903681" is suspected to be observation well OW2, located approximately 250 m 250 m hydraulically up-gradient of the Site. The other two (2) concrete casted wells are mapped as one on each east and west sides of the Site. Given the mapped terrain locations of these wells, it is suspected that the provided coordinates for these well records are inaccurate.

The majority of the eighteen (18) water well records that are detailed as drilled wells with 6.25-inch steel well casings are approximately 30 m deep or greater, with only three (3) being detailed as approximately 20 m deep. The potential for these wells to be negatively impacted by effluent discharge of the individual on-site sewage systems for the proposed 30-lot subdivision is interpreted to be very low.

Additionally, given there was no well interference observed in the observation wells during the pumping tests with a maximum pumping rate of 51.3 L/min, it is believed there is a very low potential for the existing wells around the Site to be negatively impacted private servicing of the proposed 30-lot development.

A copy of the Ministry of Environment, Conservation and Parks (MECP) well records within 500 m of the Site are provided in **Appendix H**. The wells within 500 m of the Site are displayed in **Figure 3**.

7.1 Recommended Additional Fieldwork and Monitoring

Pigeonview recommends collecting additional water quality samples from Test well TW1 and TW2 for analysis of bacteria/microbiology with comparison to Ontario Drinking Water Quality Standards (ODWQS).

Prior to commencing on-Site earthworks including topsoil stripping cut & fill activities and excavations for foundations, road Well decommissioning is required unless additional monitoring is required as part of conditional approval of the Plan of Subdivision. A licensed well contractor should decommission any inactive wells within the Site, in accordance with Ontario Regulation 903, which applies to any existing monitoring wells.

8.0 Conclusion

Based on the above analysis, the following conclusions and recommendations are offered for the proposed Plan of Subdivision of 1812 Peterborough County Road 10, Village of Ida, Ontario:

- The geology within the Site is characterized by Till Plains and a drumlin of the Peterborough Drumlin Field, generally composed of Silt, sandy silt to silt till soil materials.
- Two (2) water-bearing zones (aquifers) have been identified at the Site:
 - An upper unconfined overburden aquifer; with groundwater elevations ranging from <251.68 masl to 265.51 masl between May 8th and August 8th, 2025.
 - A deep overburden aquifer; with groundwater elevations ranging from 246.91 masl to 250.45 masl.
 - These aquifers are interpreted to be not directly hydraulically connected.
- Background Nitrate-nitrogen and phosphorus water quality samples were collected from all on-Site monitoring wells and one off-site supply well (OW1):
 - Concentrations of phosphorus and nitrite were below laboratory detection limits for all samples.
 - Background nitrate concentrations ranged from 0.13 to 3.88 mg/L.
- Water samples were collected from the Test wells and analysed for the D-5-5 suite of parameters. All samples exceeded the ODWQS criteria for combinations of the following parameters: Colour, Turbidity, Hardness, Iron, Sodium, E.coli, and Total Coliform;
 - These parameter exceedances can be mitigated or treated for with standard residential filtration, UV treatment, and/or water softening systems.
 - Resampling for bacterial/microbiology from TW1 and TW2 is recommended.
- Single Well Respond Tests (SWRT) tests were completed on the on-Site monitoring wells to evaluate the hydraulic properties of the shallow overburden aquifer:
 - Hydraulic conductivities for the sandy silt to silt till unit ranged from 1.0×10^{-6} m/s to 3.0×10^{-5} m/s, with a geometric mean of 3.8×10^{-6} m/s.
- Four (4) 6-hour continuous pumping test were completed on on-Site Test Wells: TW1, TW2, TW3, and deepened TW2, yielding the following results:
 - Average pumping rates ranged from 28.7 L/min (7.6 USGPM) to 51.3 L/min (13.6 USGPM);
 - Maximum water level drawdowns during pumping ranged from 1.6 m to 5.9 m;
 - The total volumes of groundwater discharge during the pumping tests ranged from 9,200 (TW1) to 18,600 L. (TW2 Re-test);
 - Recharge time for the test wells to recover to static conditions ranged from 3 to 19 minutes, with all test wells achieving at least 90% recovery within 10 minutes.
 - No water level responses or interference was detected in any of the well in the monitoring network during all four pumping tests.
- With test pumping rates being significantly greater than the D-5-5 recommendation while also achieving dynamic equilibrium with minimal drawdown, exhibited rapid recharge and no interference, the deeper aquifer is believed to be capable producing sufficient water resources to support private service the proposed 30-lot subdivision

- A predictive assessment was completed to assesses the combined impact of individual on-site sewage systems at the boundary of the proposed 30-lot residential developments in terms of Nitrate-Nitrogen loading:
 - Using 40 mg/L of nitrate effluent to model conventional septic tank treatment system loading, the nitrate concentration at Site boundary was 13.30 mg/L; and
 - Using 20 mg/L of nitrate effluent to model tertiary treatment system loading, nitrate concentration at the Site boundary was 6.68 mg/L.
- With use of tertiary treatment systems for 30-lot residential development, is it achievable to maintain a nitrate concentration of less than 10 mg/L at the Site boundary.
- Effluent discharge to the shallow overburden aquifer with or without tertiary treatment systems, is not expected to have an adverse impact on the deep overburden aquifer targeted for drinking water resources.
- With no well interference observed in the observation wells during the pumping tests the private servicing of the proposed 30-lot subdivision is not expected negatively impact existing well users within 500 m of the Site.
- Well decommissioning will be required before construction. A licensed well contractor should decommission any inactive wells within the Site, according to Ontario. Well decommissioning will be required before construction. A licensed well contractor should decommission any inactive wells within the Site, according to Ontario.

9.0 Limitations

Pigeonview Consulting Inc. (PV) has prepared this report for our client and its agents exclusively. PV accepts no responsibility for any damages that third parties may suffer resulting from decisions or actions based on this report.

The findings and conclusions are site-specific and were developed in a manner consistent with that level of care and skill normally exercised by environmental professionals currently practicing under similar conditions in the area. Changing assessment techniques, regulations, and site conditions mean that environmental investigations and their conclusions can quickly become dated, so this report is current up to two years from the published date. The report should not be used after that without PV's review/approval.

The project has been conducted according to our instructions/work program/proposal(s). Additional conditions and limitations on our liability are outlined in our work program/service contract(s). No warranty, expressed or implied, is made.

10.0 References

- Chapman, L. J., & Putnam, D. F. (2007). *The Physiography of Southern Ontario*: Ontario Geological Survey, 3rd edition. Ontario Geological Survey.
- Dingman, S. (2025, December, 11) *Ida Development: Preliminary Layout*. Township of Cavan-Monaghan, Peterborough County. Engage Engineering Ltd., Project Number: 25017, Sheet: PL.
- Freeze, R. A., & Cherry, J. A. (1979). *Groundwater*. Englewood Cliffs, New Jersey: Prentice Hall. ISBN 0-13-365312-9.
- Google Earth. (2025). [Street view of 1812 CR10, Ida, ON]
- Hvorslev, M.J., 1951. Time Lag and Soil Permeability in Ground-Water Observations, Bull. No. 36, Waterways Exper. Sta. Corps of Engrs, U.S. Army, Vicksburg, Mississippi, pp. 1-50.
- MECP (1996). D-5-4 Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment. Retrieved from: <https://www.ontario.ca/page/d-5-4-individual-site-sewage-systems-water-quality-impact-risk-assessment>
- MECP (1996). D-5-5 Private Wells: Water Supply Assessment. Retrieved from: <https://www.ontario.ca/page/d-5-5-private-wells-water-supply-assessment#section-3>
- MECP (2003). *Stormwater Management Planning and Design Manual*. Ministry of the Environment. Queens Printer for Ontario.
- MECP (2025, March) Source Protection Information Atlas. Retrieved from <https://www.lioapplications.lrc.gov.on.ca/SourceWaterProtection/index.html?viewer=SourceWaterProtection.SWPViewer&locale=en-CA>
- OGS. (1991a). Quaternary Geology of Southern Ontario Map 2556. Southern sheet. Queens Printer for Ontario.
- OGS. (1991b). Bedrock Geology of Ontario of Southern Ontario Map 2544. Southern sheet. Queens Printer for Ontario

11.0 Closing

We trust this information meets your current requirements. Please do not hesitate to contact the undersigned should you have any questions or require additional information.

Yours truly,

Pigeonview Consulting Inc.

Prepared By:



Mike Francis, B.Sc., P.Geo, BCIN

Hydrogeologist

Figure

Figure 1

Regional Location Plan

Figure 2
Detailed Site Plan

Figure 3

Surface Geology and MECP Wells

Appendix A

Draft Plan of Subdivision Drawings

Appendix B

Borehole Logs

Appendix C

Supply Well Installation Records

Appendix D

Hydraulic Conductivity Analysis

Appendix E

Pumping Test Hydrographs

Appendix F

Water Quality Analysis

Appendix G

Grain Size Distribution Charts

Appendix H

MECP Wells from 500m around Site

Figure

Figure 1

Regional Location Plan



Legend

Site: 1812 Peterborough County Rd.
10, Village of Ida



**Pigeonview
Consulting Inc.**

Client:

IanCameron

Date:

September 2025

Scale:

Title:

Regional
Site Plan

Figure No.

1

Project No.

0007-001

Drawn By:

MF

Source:

Google Earth 2025

Figure 2
Detailed Site Plan



Legend

Site: 1812 Peterborough County Rd.
10, Village of Ida



Client:

IanCameron

Date:

September 2025

Scale:

Title:

Detailed
Site Plan

Figure No.

2

Project No.

0007-001

Drawn By:

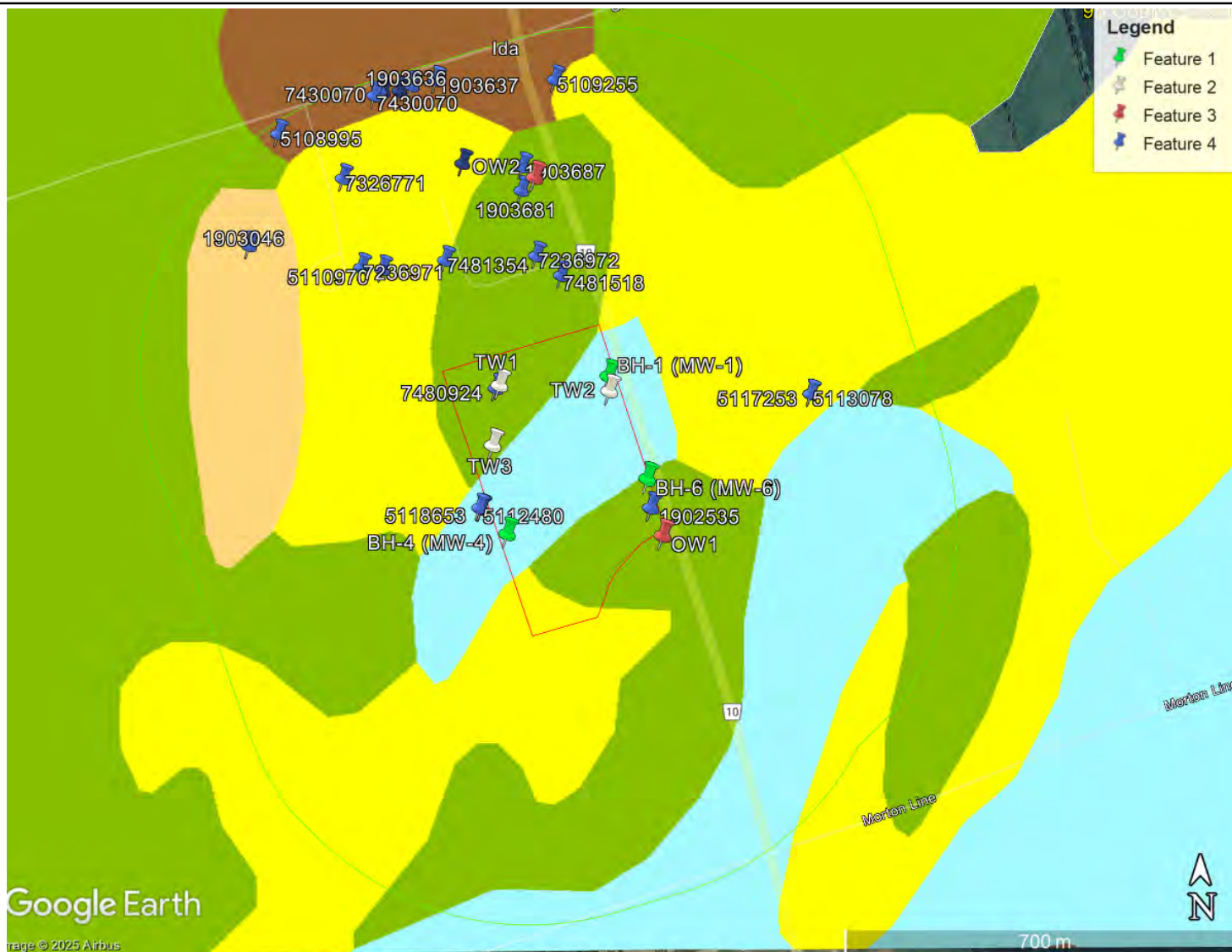
MF

Source:

Google Earth 2025

Figure 3

Surface Geology and MECP Wells



Legend

Site: 1812 Peterborough County Rd. 10, Village of Ida

500 m Buffer Around Site



Pigeonview
Consulting Inc.

Client:

Ian Cameron

Date:

September 2025

Scale:

Source:

Google Earth 2025

Title:

Surface Geology
and MECP Wells

Figure No.

3

Project No.

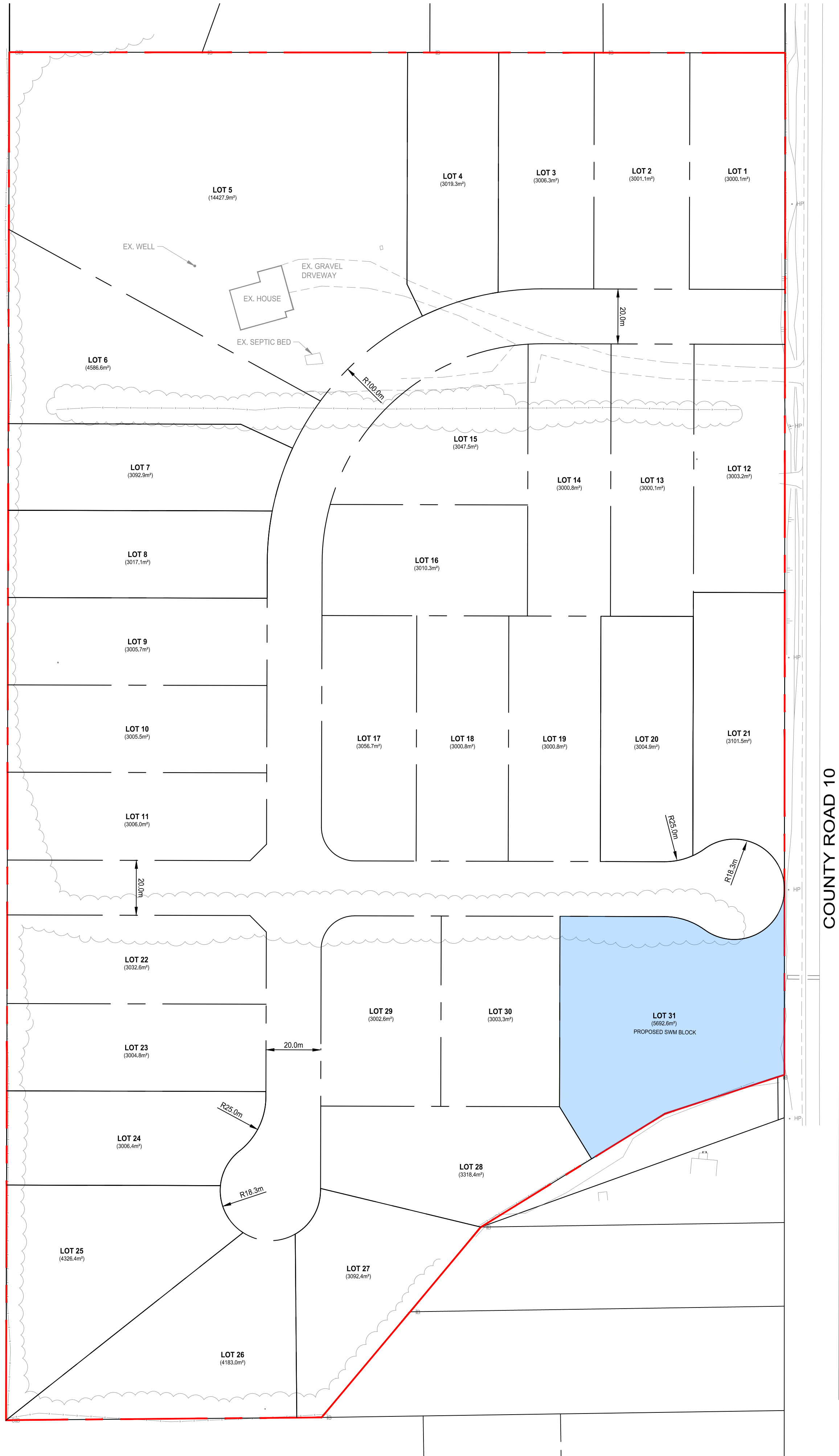
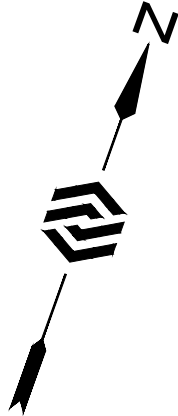
0007-001

Drawn By:

MF

Appendix A

Draft Plan of Subdivision Drawings



LAND USE SCHEDULE	
LOT	AREA (m ²)
1	3000.1
2	3001.1
3	3006.3
4	3019.3
5	14427.9
6	4586.6
7	3092.9
8	3017.1
9	3005.7
10	3005.5
11	3006.0
12	3003.2
13	3000.1
14	3000.8
15	3047.5
16	3010.3
17	3056.7
18	3000.8
19	3000.8
20	3004.9
21	3101.5
22	3032.6
23	3004.8
24	3006.4
25	4326.4
26	4183.0
27	3092.4
28	3318.4
29	3002.6
30	3003.3
31	5692.6

SURVEY
TOPOGRAPHIC SURVEY PROVIDED
BY ENGAGE ENGINEERING ETC.

BENCHMARK
BENCHMARK DESCRIPTION

ELEV:

NOTES:

2.	ISSUED FOR REVIEW	SD	2025-12-11
1.	ISSUED FOR REVIEW	SD	2025-10-31

No.	REVISION	BY	DATE
-----	----------	----	------



IDA DEVELOPMENT

TOWNSHIP OF CAVAN-MONAGHAN

PRELIMINARY LAYOUT

PETERBOROUGH COUNTY

DRAWN BY: S.DINGMAN	STAMP:
DESIGNED BY: S.DINGMAN	
APPROVED BY:	
DATE: 2025-10-31	
SCALE: 1:1000	
PROJECT NUMBER: 25017	SHEET NAME: PL
	SHEET: 1 of 1

Appendix B

Borehole Logs

PROJECT NUMBER 25R103	DRILLING COMPANY G.E.T. Drilling	COORDINATES 4899252.877, 701512.640
PROJECT NAME Subdivision Devpt (2nd Phase)	LICENCE # 7085	COORDINATE SYSTEM Northing / Easting
CLIENT Ian Cameron	DRILLER M. Turnbull	GROUND SURFACE ELEV (m) 266.875
SITE ADDRESS 1812 County Road 10	DRILL RIG Track-Mounted CME	TOP OF WELL CASING ELEV (m) 267.78
..... Village of Ida	DRILLING METHOD Solid Augers, Split Spoons	TOTAL DEPTH (m) 4.9
..... Twp of Cavan-Monaghan, ON	DATE DRILLED May 5, 2025	LOGGED BY Garnet Brenchley, P.Eng.
WELL COMPLETION Well Tag #A420778		
CASING 0.90m above gr to 1.50m below gr		
SCREEN 1.50m below gr to 4.55m below gr		
COMMENTS Drill method: AU=Solid augers & split spoons. Coordinates and ground surface elevation surveyed and provided by Engage Engineering		

Depth (m)	Drilling Method	Sample (Interval and Type)	SPT (N) value or TCR, SCR, RQD	Moisture Cont (%)	Groundwater	Well Monitor Details	Stratigraphy	Stratigraphic Description	Depth (m)	Additional Observations & Remarks	Elevation (m)
0.5	AU							TOPSOIL	0.4		266.5
1		SS-1	3 (2,2,1,3)	21.9				ORGANIC SILT - dark brown reddish brown mottled Silt and Sand with Clay, Organics throughout, moist, loose (possible Fill or Disturbed Soil)	1.2	SS-1: 6% Gravel, 42% Sand, 39% Silt, 13% Clay	266
1.5					▽ 4 ▽ 2			TILL - grey Silt and Sand with Gravel, wet to saturated, loose		Groundwater: 1) present in open borehole at about 1.8m below grade (bg) upon extraction of augers 2) May 8/25 = 1.45m bg 3) May 12/25 = 1.63m bg 4) May 27/25 = 1.36m bg	265.5
2		SS-2	2 (1,1,1)	18.3	▽ 3 ▽ 1				2.3		265
2.5		SS-3	15 (7,9,6,5)	11.1				Wet, compact	3.2		264.5
3											264
3.5		SS-4	41 (9,17,24)	8.0				SAND - brown Sand, medium-grained, moist, compact	3.5		263.5
4								TILL - grey Silty Sand with Gravel, damp, dense to very dense		Slower auger advancement below 3.5m	263
4.5											262.5
		SS-5	>100 (34,39,50=2")	10.5					4.9		262
5								Borehole terminated			
5.5											261.5
6											261

PROJECT NUMBER 25R103	DRILLING COMPANY G.E.T. Drilling	COORDINATES 4899208.763, 701378.245
PROJECT NAME Subdivision Devpt (2nd Phase)	LICENCE # 7085	COORDINATE SYSTEM Northing / Easting
CLIENT Ian Cameron	DRILLER M. Turnbull	GROUND SURFACE ELEV (m) 274.341
SITE ADDRESS 1812 County Road 10	DRILL RIG Track-Mounted CME	TOP OF WELL CASING ELEV (m) n/a
..... Village of Ida	DRILLING METHOD Solid Augers, Split Spoons	TOTAL DEPTH (m) 4.6
..... Twnp of Cavan-Monaghan, ON	DATE DRILLED May 5, 2025	LOGGED BY Garnet Brenchley, P.Eng.
WELL COMPLETION no well		
CASING no well		
SCREEN no well		
COMMENTS Drill method: AU=Solid augers & split spoons. Coordinates and ground surface elevation surveyed and provided by Engage Engineering		

Depth (m)	Drilling Method	Sample (Interval and Type)	SPT (N) value or TCR, SCR, RQD	Moisture Cont (%)	Groundwater	Well Monitor Details	Stratigraphy	Stratigraphic Description	Depth (m)	Additional Observations & Remarks	Elevation (m)
0.5	AU	AS-1		8.8				FILL - dark brown Sand with Gravel, Cobbles present, damp			274
									0.8		
1		SS-2	19 (2,9,10,17)	7.8				TOPSOIL / ORGANICS	0.9		273.5
1.5								TILL - light brown Sandy Silt with Gravel, occasional Cobbles, damp, compact			273
									1.5		
2		SS-3	58 (8,50=6")	8.0				Dense			272.5
									2.3		
2.5		SS-4	48 (24,22,26)	8.3				Silty Sand with Gravel with Clay, brown	2.4		272
								SAND - brown Sand, fine-grained, moist to wet, compact to dense	2.6	SS-4 (till portion): 12% Gravel, 49% Sand, 29% Silt, 10% Clay	
3								TILL - grey Silty Sand with Gravel with Clay, moist, dense			271.5
		SS-5	64 (14,50=5")	4.8				Grey Sandy Silt with Gravel, occasional Cobbles	3.1		271
3.5										Groundwater: present in open borehole at about 3.5m below grade (bg) on extraction of augers	270.5
4		AS-6		9.8					3.7		
4.5										Borehole walls caved below 3.9m depth on extraction of augers	270
									4.6		
5								Borehole terminated			269.5
5.5											269
6											268.5

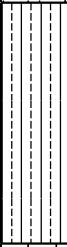
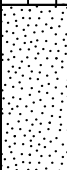
PROJECT NUMBER 25R103	DRILLING COMPANY G.E.T. Drilling	COORDINATES 4899110.492, 701406.420
PROJECT NAME Subdivision Devpt (2nd Phase)	LICENCE # 7085	COORDINATE SYSTEM Northing / Easting
CLIENT Ian Cameron	DRILLER M. Turnbull	GROUND SURFACE ELEV (m) 263.486
SITE ADDRESS 1812 County Road 10	DRILL RIG Track-Mounted CME	TOP OF WELL CASING ELEV (m) n/a
..... Village of Ida	DRILLING METHOD Solid Augers, Split Spoons	TOTAL DEPTH (m) 4.6
..... Twnp of Cavan-Monaghan, ON	DATE DRILLED May 5, 2025	LOGGED BY Garnet Brenchley, P.Eng.
WELL COMPLETION no well		
CASING no well		
SCREEN no well		
COMMENTS Drill method: AU=Solid augers & split spoons. Coordinates and ground surface elevation surveyed and provided by Engage Engineering		

Depth (m)	Drilling Method	Sample (Interval and Type)	SPT (N) value or TCR, SCR, RQD	Moisture Cont (%)	Groundwater	Well Monitor Details	Stratigraphy	Stratigraphic Description	Depth (m)	Additional Observations & Remarks	Elevation (m)
0.5	AU							TOPSOIL	0.2		263
1		SS-1	14 (3,4,10,10)	13.1				TILL - brown Sandy Clayey Silt trace Gravel, stiff to hard, damp		SS-1: 6% Gravel, 31% Sand, 38% Silt, 25% Clay	262.5
1.5									1.5		262
2		SS-2	22 (3,9,13)	10.3				With Gravel, compact / hard			261.5
2.5									2.1		261
3		SS-3	34 (11,20,14)	6.8				Silty Sand with Gravel, damp, dense		Groundwater: present in open borehole at about 2.4m below grade (bg) on extraction of augers	260.5
3.5									3.1		260
4		SS-4	39 (9,16,23)	10.5				Grey, moist, dense			259.5
4.5		AS-5		14.8					4.6	Borehole walls caved below 4.3m depth on extraction of augers	259
5								Borehole terminated			258.5
5.5											258
6											257.5

PROJECT NUMBER 25R103	DRILLING COMPANY G.E.T. Drilling	COORDINATES 4898982.964, 701348.097
PROJECT NAME Subdivision Devpt (2nd Phase)	LICENCE # 7085	COORDINATE SYSTEM Northing / Easting
CLIENT Ian Cameron	DRILLER M. Turnbull	GROUND SURFACE ELEV (m) 262.029
SITE ADDRESS 1812 County Road 10	DRILL RIG Track-Mounted CME	TOP OF WELL CASING ELEV (m) 262.87
..... Village of Ida	DRILLING METHOD Solid Augers, Split Spoons	TOTAL DEPTH (m) 4.6
..... Twnp of Cavan-Monaghan, ON	DATE DRILLED May 5, 2025	LOGGED BY Garnet Brenchley, P.Eng.
WELL COMPLETION Well Tag #A420780		
CASING 0.84m above gr to 2.47m below gr		
SCREEN 2.47m below gr to 3.99m below gr		
COMMENTS Drill method: AU=Solid augers & split spoons. Coordinates and ground surface elevation surveyed and provided by Engage Engineering		

Depth (m)	Drilling Method	Sample (Interval and Type)	SPT (N) value or TCR, SCR, RQD	Moisture Cont (%)	Groundwater	Well Monitor Details	Stratigraphy	Stratigraphic Description	Depth (m)	Additional Observations & Remarks	Elevation (m)
0.5	AU							TOPSOIL	0.4		262
1		SS-1	22 (15,7,15,17)	7.3				ORGANIC SILT - dark brown reddish brown Silt with Sand, Organics throughout, moist, loose	0.5		261.5
1.5		SS-2	77 (25,27,50)	5.0				TILL - light brown Silt and Sand with Gravel, trace to some Clay, damp, compact	1.5	Groundwater: 1) present in open borehole at about 3.0m below grade (bg) upon extraction of augers 2) May 8/25 = 0.56m bg 3) May 12/25 = 0.75m bg 4) May 27/25 = 0.50m bg	261
2								Brown Silty Sand with Gravel, damp, dense to very dense			260.5
2.5		SS-3	79 (29,50=6")	5.3							260
3		SS-4	100 (50=6")	15.5				SAND - brown Sand, medium to coarse-grained, wet, dense	3.1		259.5
3.5								TILL - grey Silty Sand with Gravel, damp, dense to very dense	3.2		259
4		AS-5		12.1						Slower auger advancement below 3.2m	258.5
4.5									4.6	Borehole walls caved below 3.9m depth on extraction of augers	258
5								Borehole terminated			257.5
5.5											257
6											256.5
											256

PROJECT NUMBER 25R103	DRILLING COMPANY G.E.T. Drilling	COORDINATES 4899041.019, 701452.612
PROJECT NAME Subdivision Devpt (2nd Phase)	LICENCE # 7085	COORDINATE SYSTEM Northing / Easting
CLIENT Ian Cameron	DRILLER M. Turnbull	GROUND SURFACE ELEV (m) 259.968
SITE ADDRESS 1812 County Road 10	DRILL RIG Track-Mounted CME	TOP OF WELL CASING ELEV (m) n/a
..... Village of Ida	DRILLING METHOD Solid Augers, Split Spoons	TOTAL DEPTH (m) 4.6
..... Twnp of Cavan-Monaghan, ON	DATE DRILLED May 5, 2025	LOGGED BY Garnet Brenchley, P.Eng.
WELL COMPLETION no well		
CASING no well		
SCREEN no well		
COMMENTS Drill method: AU=Solid augers & split spoons. Coordinates and ground surface elevation surveyed and provided by Engage Engineering		

Depth (m)	Drilling Method	Sample (Interval and Type)	SPT (N) value or TCR, SCR, RQD	Moisture Cont (%)	Groundwater	Well Monitor Details	Stratigraphy	Stratigraphic Description	Depth (m)	Additional Observations & Remarks	Elevation (m)
0.5	AU							TOPSOIL	0.4		259.5
1		SS-1	3 (1,1,2,2)	27.8				ORGANIC SILT - dark brown reddish brown Sandy Silt with Clay, Organics throughout, wet, loose		SS-1: 1% Gravel, 31% Sand, 57% Silt, 11% Clay	259
1.5		SS-2	16 (6,10,6)	12.4				TILL - brown Silty Sand with trace Gravel, moist to wet, compact	1.5	Groundwater: present in open borehole at about 1.5m below grade (bg) on extraction of augers	258.5
2		SS-3a	76	11.5					2.4		257.5
2.5		SS-3b	(26,50=6")	9.2				SAND - brown Sand (medium to coarse grained) with Silt, trace Gravel, wet, dense		SS-3b: 6% Gravel, 76% Sand, 18% Silt and Clay	257
3		SS-4	>100 (16,30, 50=2")	7.2				TILL - grey Silty Sand with Gravel, moist, very dense	3.3		256.5
3.5		AS-5		19.8						Borehole walls caved below 3.7m depth on extraction of augers	256
4									4.6		255.5
4.5								Borehole terminated			
5											255
5.5											254.5
6											254

PROJECT NUMBER 25R103	DRILLING COMPANY G.E.T. Drilling	COORDINATES 4899081.192, 701583.366
PROJECT NAME Subdivision Devpt (2nd Phase)	LICENCE # 7085	COORDINATE SYSTEM Northing / Easting
CLIENT Ian Cameron	DRILLER M. Turnbull	GROUND SURFACE ELEV (m) 257.777
SITE ADDRESS 1812 County Road 10	DRILL RIG Track-Mounted CME	TOP OF WELL CASING ELEV (m) 258.65
..... Village of Ida	DRILLING METHOD Solid Augers, Split Spoons	TOTAL DEPTH (m) 6.1
..... Twnp of Cavan-Monaghan, ON	DATE DRILLED May 5, 2025	LOGGED BY Garnet Brenchley, P.Eng.
WELL COMPLETION Well Tag #A420779	CASING 0.87m above gr to 4.58m below gr	SCREEN 4.58m below gr to 6.10m below gr
COMMENTS Drill method: AU=Solid augers & split spoons. Coordinates and ground surface elevation surveyed and provided by Engage Engineering		

Depth (m)	Drilling Method	Sample (Interval and Type)	SPT (N) value or TCR, SCR, RQD	Moisture Cont (%)	Groundwater	Well Monitor Details	Stratigraphy	Stratigraphic Description	Depth (m)	Additional Observations & Remarks	Elevation (m)
0.5	AU							TOPSOIL	0.4		257.5
1		SS-1	6 (1,2,4,6)	18.9				ORGANIC SILT - dark brown reddish brown mottled Silt with Sand, Organics throughout, moist, loose	1.1		257
1.5								SILT and CLAY - brown Silt and Clay, moist, firm to stiff	1.5		256.5
2		SS-2	10 (5,5,5)	10.9				SILT - grey Silt with sand and Clay, trace Gravel, moist, stiff	2.3		256
2.5					▽ 4			TILL - light grey Silt and Sand with Clay, trace to some Gravel, moist, compact	3.1	Groundwater: 1) present in open borehole at about 5.2m below grade (bg) upon extraction of augers 2) May 8/25 = 2.34m bg 3) May 12/25 = 2.66m bg 4) May 27/25 = 2.15m bg	255.5
3		SS-3	24 (6,8,16)	8.1	▽ 2			Increased Gravel, dense	3.7		255
3.5					▽ 3			Damp			254.5
4		SS-4	69 (11,19,50=6")	10.6							254
4.5		AS-5		10.8						Slower auger advancement below 3.7m	253.5
5											253
5.5											252.5
6		AS-6		18.3		▽ 1					252
								Borehole terminated	6.1		251.5

PROJECT NUMBER 25R103	DRILLING COMPANY G.E.T. Drilling	COORDINATES 4898928.208, 701470.842
PROJECT NAME Subdivision Devpt (2nd Phase)	LICENCE # 7085	COORDINATE SYSTEM Northing / Easting
CLIENT Ian Cameron	DRILLER M. Turnbull	GROUND SURFACE ELEV (m) 257.262
SITE ADDRESS 1812 County Road 10	DRILL RIG Track-Mounted CME	TOP OF WELL CASING ELEV (m) n/a
..... Village of Ida	DRILLING METHOD Solid Augers, Split Spoons	TOTAL DEPTH (m) 5.0
..... Twnp of Cavan-Monaghan, ON	DATE DRILLED May 5, 2025	LOGGED BY Garnet Brenchley, P.Eng.

WELL COMPLETION no well	CASING no well	SCREEN no well
--------------------------------	-----------------------	-----------------------

COMMENTS Drill method: AU=Solid augers & split spoons. Coordinates and ground surface elevation surveyed and provided by Engage Engineering

Depth (m)	Drilling Method	Sample (Interval and Type)	SPT (N) value or TCR, SCR, RQD	Moisture Cont (%)	Groundwater	Well Monitor Details	Stratigraphy	Stratigraphic Description	Depth (m)	Additional Observations & Remarks	Elevation (m)
0.5	AU							TOPSOIL	0.4		257
1		SS-1	10 (3,6,4,7)	28.6				ORGANIC SILT - dark brown reddish brown Silt and Sand, Organics throughout, wet, loose	0.8		256.5
1.5								SILT and CLAY - brown Silt and Clay, damp, firm to stiff			256
2		SS-2	14 (4,6,8)	25.8				Trace to some Sand	1.5		255.5
2.5								CLAYEY SANDY SILT - grey Clayey Sandy Silt, trace Gravel, moist, firm to stiff	2.3		255
3		SS-3	14 (4,5,9)	17.7				TILL - grey Silty Sand with trace Gravel trace Clay, moist, compact	2.4	SS-3 (Silt/Clay portion): 3% Gravel, 28% Sand, 35% Silt, 34% Clay	254.5
3.5											254
4		SS-4	17 (2,8,9)	10.9							253.5
4.5											253
5		SS-5	23 (5,8,15)	8.6						Borehole was open to full depth and free of any accumulated groundwater on extraction of augers	252.5
5.5								Borehole terminated	5.0		252
6											251.5
											251

Appendix C

Supply Well Installation Records

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *

A377810

Type *

☒ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☒ Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name

Cameron

First Name

Ian

Organization

Email Address

Current Address

Unit Number

Street Number *

3160

Street Name *

West Ridge Ave

City/Town/Village

Peterborough

Country

Canada

Province

Ontario

Postal Code

K9K 1Z2

Telephone Number

2. Well Location

Address of Well Location

Unit Number

Street Number *

1812

Street Name *

County Rd 10

Township

Cavan

Lot

12

Concession

10

County/District/Municipality

PETERBOROUGH

City/Town

Ida

Province

Ontario

Postal Code

UTM Coordinates

Zone *

17

Easting *

701332

Northing *

4899250

Test UTM in Map

Municipal Plan and Sublot Number

Other

3. Overburden and Bedrock Material *

Well Depth *

158

(ft)

General Colour

Most Common Material

Other Materials

General Description

Depth From

Depth To

				(ft)	(ft)
Brown	Clay	Sand	Packed	0	22
Brown	Clay	Gravel	Dense	22	60
Grey	Gravel	Clay	Dense	60	63
Brown	Medium Sand		Soft	63	67
Brown	Clay	Sand	Packed	67	78
Grey	Gravel	Sand	Cemented	78	126
Brown	Fine Sand		Packed	126	146
Brown	Fine Sand	Wood Fragments	Loose	146	157
Grey	Gravel	Fine Sand	Loose	157	158

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	20	Bentonite Chips	2.45
0	20	Bentonite Slurry	8.0

5. Method of Construction *

- ☐ Cable Tool
 ☐ Rotary (Conventional)
 ☐ Rotary (Reverse)
 ☐ Boring
 ☐ Air percussion
 ☐ Diamond
- ☐ Jetting
 ☐ Driving
 ☐ Digging
 ☐ Rotary (Air)
 ☐ Augering
 ☐ Direct Push
- ☒ Other (specify) DR-12W

6. Well Use *

- ☐ Public
 ☐ Industrial
 ☐ Cooling & Air Conditioning
- ☒ Domestic
 ☐ Commercial
 ☐ Not Used
- ☐ Livestock
 ☐ Municipal
 ☐ Monitoring
- ☐ Irrigation
 ☐ Test Hole
 ☐ Dewatering
- ☐ Other (specify) _____

7. Status of Well *

- ☒ Water Supply
 ☐ Replacement Well
 ☐ Test Hole
- ☐ Recharge Well
 ☐ Dewatering Well
 ☐ Observation and/or Monitoring Hole
- ☐ Alteration (Construction)
 ☐ Abandoned, Insufficient Supply
 ☐ Abandoned, Poor Water Quality
- ☐ Abandoned, other (specify) _____
- ☐ Other (specify) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
6.25	Steel	0.188	-2	158

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)

10. Water Details

Water found at Depth 158 (ft)
 ☐ Gas
 Kind of water
 ☐ Fresh
 ☒ Untested
 ☐ Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	20	11.5
20	158	7.5

12. Results of Well Yield Testing

☐ Pumping Discontinued
 Explain _____

If flowing give rate
 ☐ Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)	104.6	107.7	108.8	109.1	109.2	109.3	109.4	109.5	109.5	109.5	109.5	109.5	109.5	109.5

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)	108.6	107.5	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6

After test of well yield, water was
 ☒ Clear and sand free
 ☐ Other (specify) _____

Pump intake set at	Pumping rate	Duration of pumping	Final water level end of pumping	Disinfected? *
156 (ft)	8 (GPM)	1 hrs + 30 min	109.5 (ft)	☒ Yes ☐ No

Recommended pump depth	Recommended pump rate	Well production
148 (ft)	10 (GPM)	10 (GPM)

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map.

☐ Make map area bigger



14. Information

Well owner's information package delivered

☒ Yes ☐ No

Date Package Delivered (yyyy/mm/dd)

2023/09/18

Date Work Completed (yyyy/mm/dd) *

2023/11/23

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *

Herb Lang Well Drilling Ltd.

Well Contractor's License Number *

7560

Business Address

Unit Number

Street Number

4852

Street Name *

Highway 7

City/Town/Village *

Omamee

Province

ON

Postal Code *

K0L 2W0

Business Telephone Number

705-799-7088

Business Email Address

hlwelldrilling@gmail.com

Last Name of Well Technician *

Guthrie

First Name of Well Technician *

Ken

Well Technician's License Number *

4198

16. Declaration *

☒ I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name

Guthrie

First Name

Ken

Email Address

hlwelldrilling@gmail.com

Signature

Ken Guthrie

Digitally signed by Ken Guthrie

Date: 2023.12.01 13:59:03 -05'00'

Date Submitted (yyyy/mm/dd)

2023/12/01

17. Ministry Use Only

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *

A411098

Type *

☒ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☒ Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name

Cameron

First Name

Ian

Organization

Email Address

Current Address

Unit Number

Street Number *

3160

Street Name *

West Ridge Ave

City/Town/Village

Peterborough

Country

Canada

Province

Ontario

Postal Code

Telephone Number

2. Well Location

Address of Well Location

Unit Number

Street Number *

1812

Street Name *

County Rd. 10

Township

Cavan

Lot

12

Concession

10

County/District/Municipality

PETERBOROUGH

City/Town

Ida

Province

Ontario

Postal Code

UTM Coordinates

Zone *

Easting *

Northing *

NAD 83

17

701512

4899229

Test UTM in Map

Municipal Plan and Sublot Number

Other

3. Overburden and Bedrock Material *

Well Depth *

158

(ft)

General Colour

Most Common Material

Other Materials

General Description

Depth From

Depth To

				(ft)	(ft)
Grey	Sand		Packed		98
Grey	Sand		Packed	98	110
Grey	Gravel	Sand	Cemented	110	114
Grey	Sand	Stones	Soft	114	150
Grey	Gravel	Sand	Cemented	150	155
Grey	Gravel	Sand	Loose	155	158

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	20	Bentonite Chips 50 lbs	0.7
		Bentonite Slurry 60 gal	8.0

5. Method of Construction *

- ☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☐ Augering ☐ Direct Push
☒ Other (specify) DR-12W

6. Well Use *

- ☐ Public ☐ Industrial ☐ Cooling & Air Conditioning
☒ Domestic ☐ Commercial ☐ Not Used
☐ Livestock ☐ Municipal ☐ Monitoring
☐ Irrigation ☐ Test Hole ☐ Dewatering
☐ Other (specify) _____

7. Status of Well *

- ☒ Water Supply ☐ Replacement Well ☐ Test Hole
☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole
☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality
☐ Abandoned, other (specify) _____
☐ Other (specify) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
6.25	Steel	0.188	-2	155
5.25	Steel	0.188	151	154

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
5.25	Stainless Steel	30	154	158

10. Water Details

Water found at Depth 155 (ft)	☐ Gas	Kind of water	☐ Fresh	☒ Untested	☐ Other
-------------------------------	------------------------------	---------------	--------------------------------	--	--------------------------------

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	20	11.5
20	158	7.5

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)	50	55.1	56.8	57.5	57.7	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9	57.9

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)	54	51	50	50	50	50	50	50	50	50	50	50	50

After test of well yield, water was

☒ Clear and sand free ☐ Other (specify)

Pump intake set at 157 (ft)	Pumping rate 9 (GPM)	Duration of pumping 1 hrs + 00 min	Final water level end of pumping 57.9 (ft)	Disinfected? * ☒ Yes ☐ No
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Recommended pump depth 148 (ft)	Recommended pump rate 10 (GPM)	Well production 20 (GPM)
---------------------------------	--------------------------------	--------------------------

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. ☐ Make map area bigger



14. Information

Well owner's information package delivered ☒ Yes ☐ No	Date Package Delivered (yyyy/mm/dd) 2025/05/05	Date Work Completed (yyyy/mm/dd) * 2025/08/25
Comments Gravel was loose with pressure K-packer and leader pipe above screen		

15. Well Contractor and Well Technician Information

Business Name of Well Contractor * Herb Lang Well Drilling Ltd.		Well Contractor's License Number * 7560	
Business Address			
Unit Number	Street Number 4852	Street Name * Highway 7	
City/Town/Village * Omeme		Province ON	Postal Code * K0L 2W0
Business Telephone Number 705-799-7088		Business Email Address hlwelldrilling@gmail.com	
Last Name of Well Technician * Guthrie		First Name of Well Technician * Ken	Well Technician's License Number * 4198

16. Declaration *

☒ I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.		
Last Name Guthrie	First Name Ken	Email Address hlwelldrilling@gmail.com
Signature Ken Guthrie Digitally signed by Ken Guthrie Date: 2025.09.02 13:47:45 -04'00'		Date Submitted (yyyy/mm/dd) 2025/09/02

17. Ministry Use Only

Audit Number
XZ4N 3YXR

Notice of Collection of Personal Information

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Fields marked with an asterisk (*) are mandatory.

Well Tag Number *

A411099

Type *

☒ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☒ Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name

Cameron

First Name

Ian

Organization

Email Address

Current Address

Unit Number

Street Number *

3160

Street Name *

West Ridge Ave

City/Town/Village

Petrerborough

Country

Canada

Province

Ontario

Postal Code

K9K 1Z2

Telephone Number

2. Well Location

Address of Well Location

Unit Number

Street Number *

1812

Street Name *

County Rd 10

Township

Cavan

Lot

12

Concession

10

County/District/Municipality

PETERBOROUGH

City/Town

Ida

Province

Ontario

Postal Code

UTM Coordinates

Zone *

Easting *

Northing *

NAD 83

17

701384

4898907

Test UTM in Map

Municipal Plan and Sublot Number

Other

3. Overburden and Bedrock Material *

Well Depth *

194

(ft)

General Colour

Most Common Material

Other Materials

General Description

Depth From

Depth To

				(ft)	(ft)
Brown	Topsoil	Sand	Soft		2
Brown	Clay	Gravel	Packed	2	23
Grey	Clay	Sand	Dense	23	35
Grey	Clay		Packed	35	41
Brown	Gravel	Sand	Loose	41	46
Brown	Clay	Sand	Dense	46	121
Grey	Clay	Gravel	Dense	121	140
Brown	Clay	Sand	Packed	140	189
Grey	Coarse Gravel	Sand	Loose	189	194

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	20	Bentonite Chips	0.7
0	20	Bentonite Slurry	8.0

5. Method of Construction *

- ☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☐ Augering ☐ Direct Push
☒ Other (specify) DR-12W

6. Well Use *

- ☐ Public ☐ Industrial ☐ Cooling & Air Conditioning
☒ Domestic ☐ Commercial ☐ Not Used
☐ Livestock ☐ Municipal ☐ Monitoring
☐ Irrigation ☐ Test Hole ☐ Dewatering
☐ Other (specify) _____

7. Status of Well *

- ☒ Water Supply ☐ Replacement Well ☐ Test Hole
☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole
☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality
☐ Abandoned, other (specify) _____
☐ Other (specify) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
6.25	Steel	0.188	-2	189
5.25	Steel	0.188	186	189

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
5.25	Stainless Steel	40	189	193

10. Water Details

Water found at Depth 194 (ft)	☐ Gas	Kind of water	☐ Fresh	☒ Untested	☐ Other
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11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	20	11.5
20	194	7.5

12. Results of Well Yield Testing

☐ Pumping Discontinued
 Explain _____

If flowing give rate
☐ Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)	90.2	95.6	99.8	102.2	104.3	104.8	108.0	109.2	109.4	109.5	109.6	109.8	110.0	110.2

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)	103.3	99.2	97.6	94.4	93.6	91.0	90.2	90.2	90.2	90.2	90.2	90.2	90.2

After test of well yield, water was
☒ Clear and sand free ☐ Other (specify) _____

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? *
192	9	1 hrs + 00 min	110.2	☒ Yes ☐ No

Recommended pump depth	Recommended pump rate	Well production
183 (ft)	9 (GPM)	15 (GPM)

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map.

☐ Make map area bigger



14. Information

Well owner's information package delivered ☒ Yes ☐ No	Date Package Delivered (yyyy/mm/dd) 2025/05/05	Date Work Completed (yyyy/mm/dd) * 2025/06/02
---	---	--

Comments
gravel was loose with pressure
K-packer and leader pipe above screen

15. Well Contractor and Well Technician Information

Business Name of Well Contractor * Herb Lang Well Drilling Ltd.		Well Contractor's License Number * 7560	
--	--	--	--

Business Address

Unit Number	Street Number 4852	Street Name * Highway 7	
-------------	-----------------------	----------------------------	--

City/Town/Village * Omeme		Province ON	Postal Code * K0L 2W0
------------------------------	--	----------------	--------------------------

Business Telephone Number 705-799-7088	Business Email Address hlwelldrilling@gmail.com		
---	--	--	--

Last Name of Well Technician * Guthrie	First Name of Well Technician * Ken	Well Technician's License Number * 4198	
---	--	--	--

16. Declaration *

☒ I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name Guthrie	First Name Ken	Email Address hlwelldrilling@gmail.com
----------------------	-------------------	---

Signature Ken Guthrie	Digitally signed by Ken Guthrie Date: 2025.06.11 15:49:42 -04'00'	Date Submitted (yyyy/mm/dd) 2025/06/11
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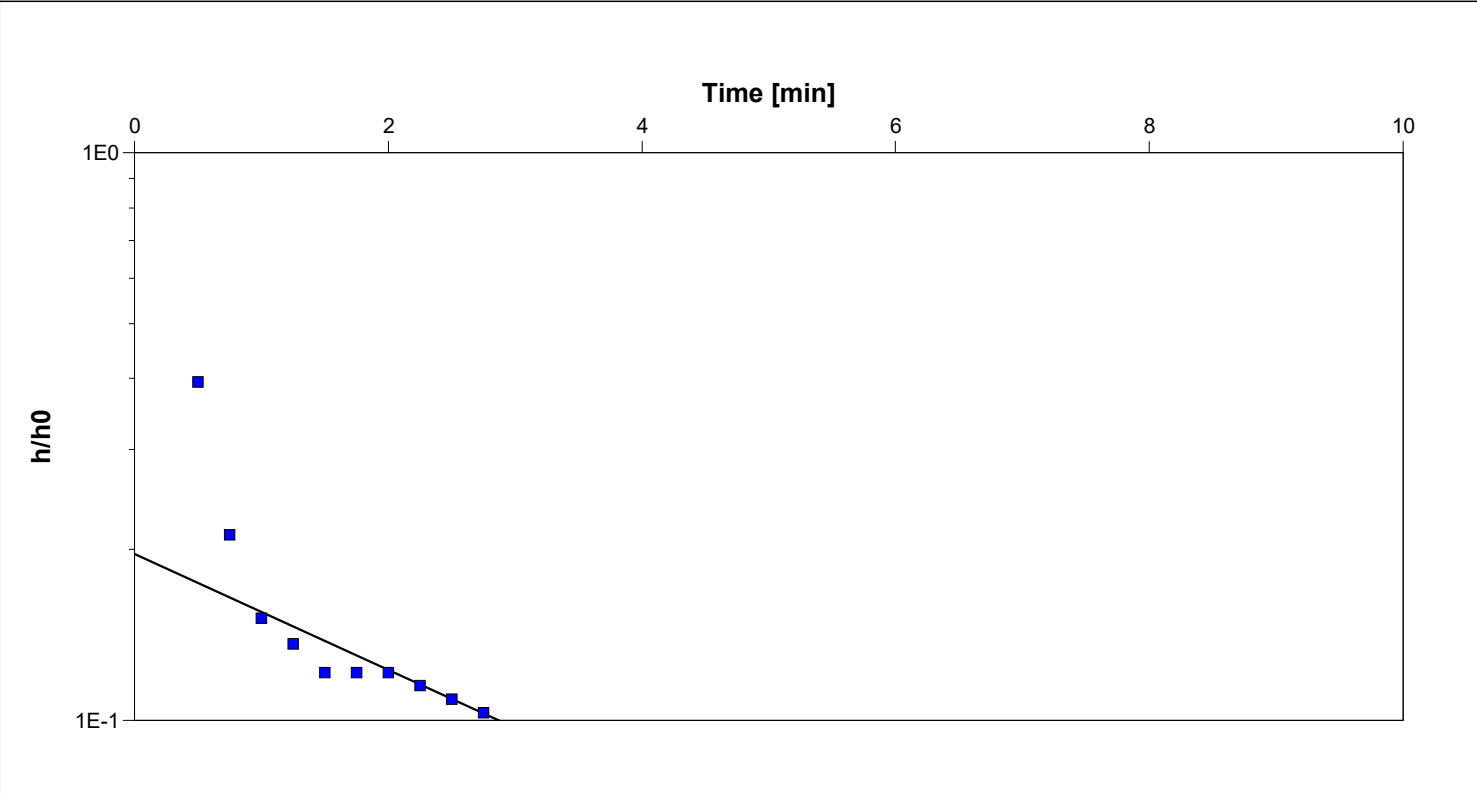
Appendix D

Hydraulic Conductivity Analysis



Slug Test Analysis Report		
Project: 1812 CR 10, Village of Ida		
Number: 0007-001		
Client: Ian Cameron		

Location: 1812 County Road 10, Ida, Ontario	Slug Test: BH-1 SWRT 1	Test Well: BH-1
Test Conducted by: M. Francis		Test Date: 2025-05-27
Analysis Performed by: M. Francis	Rising Head Test	Analysis Date: 2025-09-12
Aquifer Thickness:		

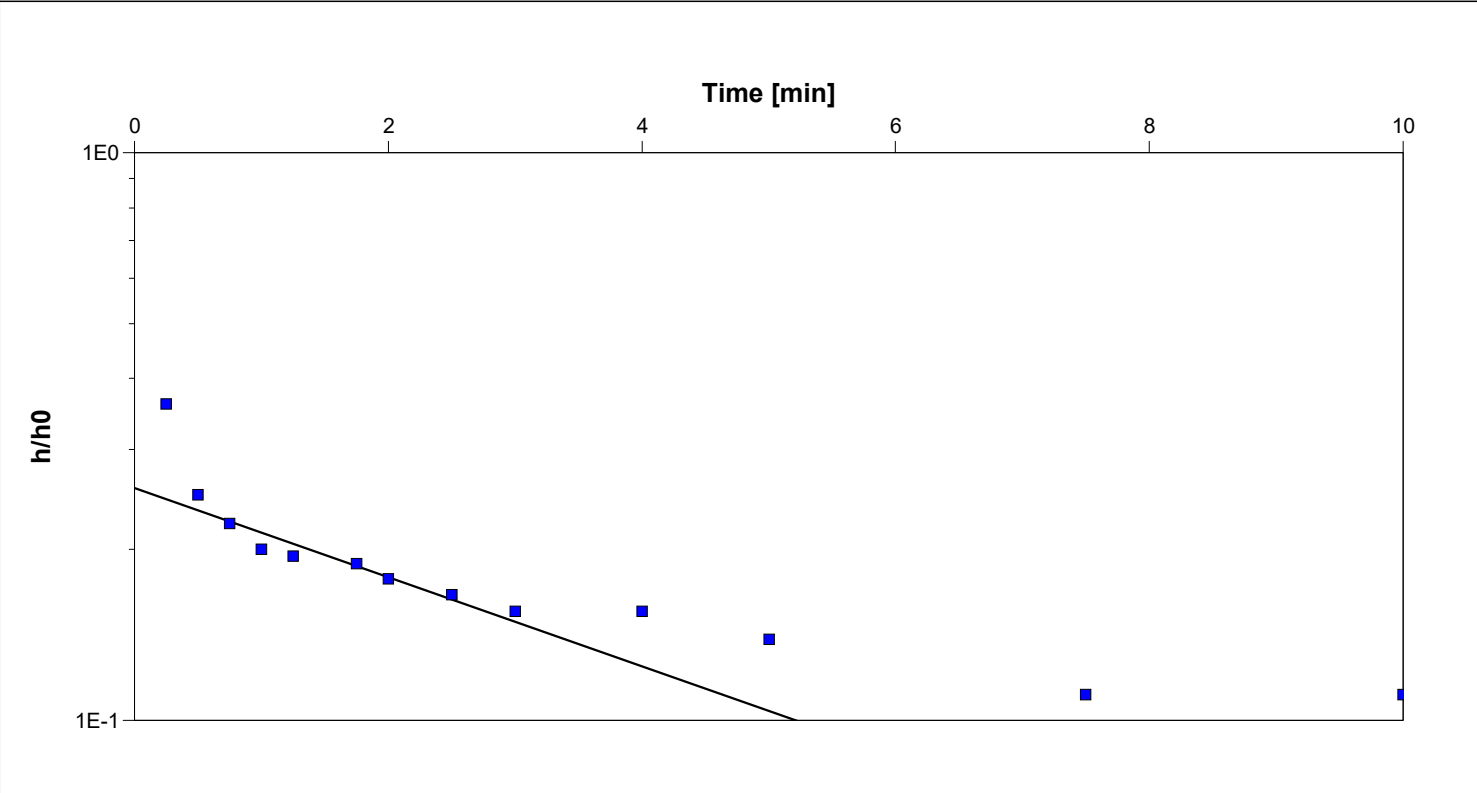


Calculation using Hvorslev		
Observation Well	Hydraulic Conductivity [m/s]	
BH-1	1.3×10^{-6}	



Slug Test Analysis Report		
Project: 1812 CR 10, Village of Ida		
Number: 0007-001		
Client: Ian Cameron		

Location: 1812 County Road 10, Ida, Ontario	Slug Test: BH-1 SWRT 2	Test Well: BH-1
Test Conducted by: M. Francis		Test Date: 2025-05-27
Analysis Performed by: M. Francis	Rising Head Test	Analysis Date: 2025-09-12
Aquifer Thickness:		



Calculation using Hvorslev		
Observation Well	Hydraulic Conductivity [m/s]	
BH-1	1.0×10^{-6}	



Slug Test Analysis Report

Project: 1812 CR 10, Village of Ida

Number: 0007-001

Client: Ian Cameron

Location: 1812 County Road 10, Ida, Ontario

Slug Test: BH-1 SWRT 3

Test Well: BH-1

Test Conducted by: M. Francis

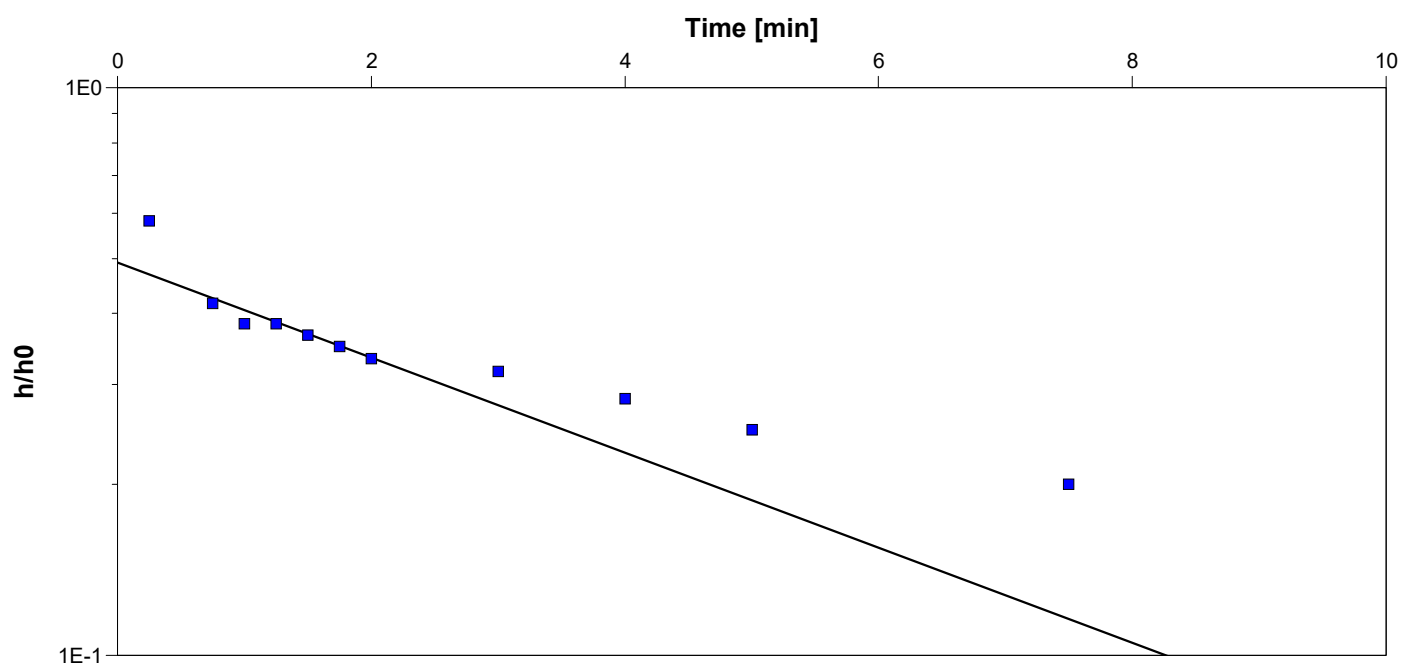
Test Date: 2025-05-27

Analysis Performed by: M. Francis

Rising Head Test

Analysis Date: 2025-09-12

Aquifer Thickness:



Calculation using Hvorslev

Observation Well

Hydraulic Conductivity
[m/s]

BH-1

1.1×10^{-6}



Slug Test Analysis Report

Project: 1812 CR 10, Village of Ida

Number: 0007-001

Client: Ian Cameron

Location: 1812 County Road 10, Ida, Ontario

Slug Test: BH-4 SWRT 1

Test Well: BH-4

Test Conducted by: M. Francis

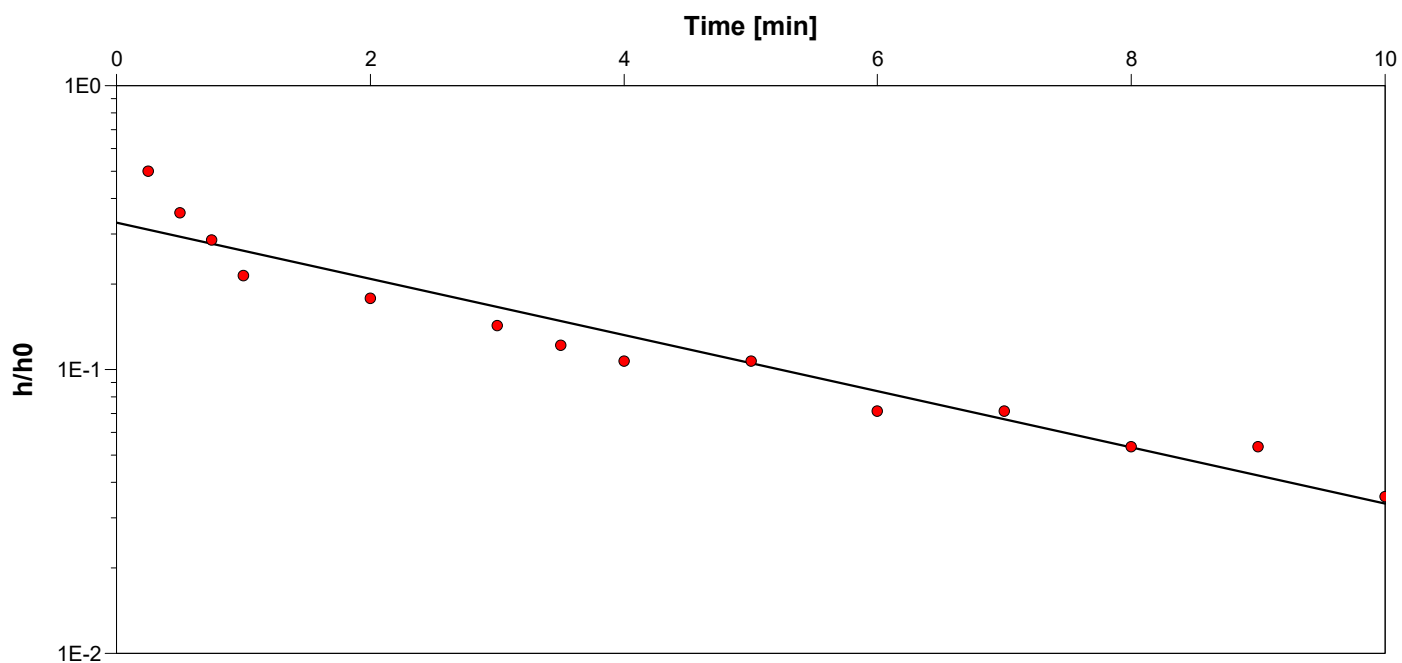
Test Date: 2025-05-27

Analysis Performed by: M. Francis

Rising Head Test

Analysis Date: 2025-09-12

Aquifer Thickness:



Calculation using Hvorslev

Observation Well

Hydraulic Conductivity
[m/s]

BH-4

2.2×10^{-6}



Slug Test Analysis Report

Project: 1812 CR 10, Village of Ida

Number: 0007-001

Client: Ian Cameron

Location: 1812 County Road 10, Ida, Ontario

Slug Test: BH-4 SWRT 2

Test Well: BH-4

Test Conducted by: M. Francis

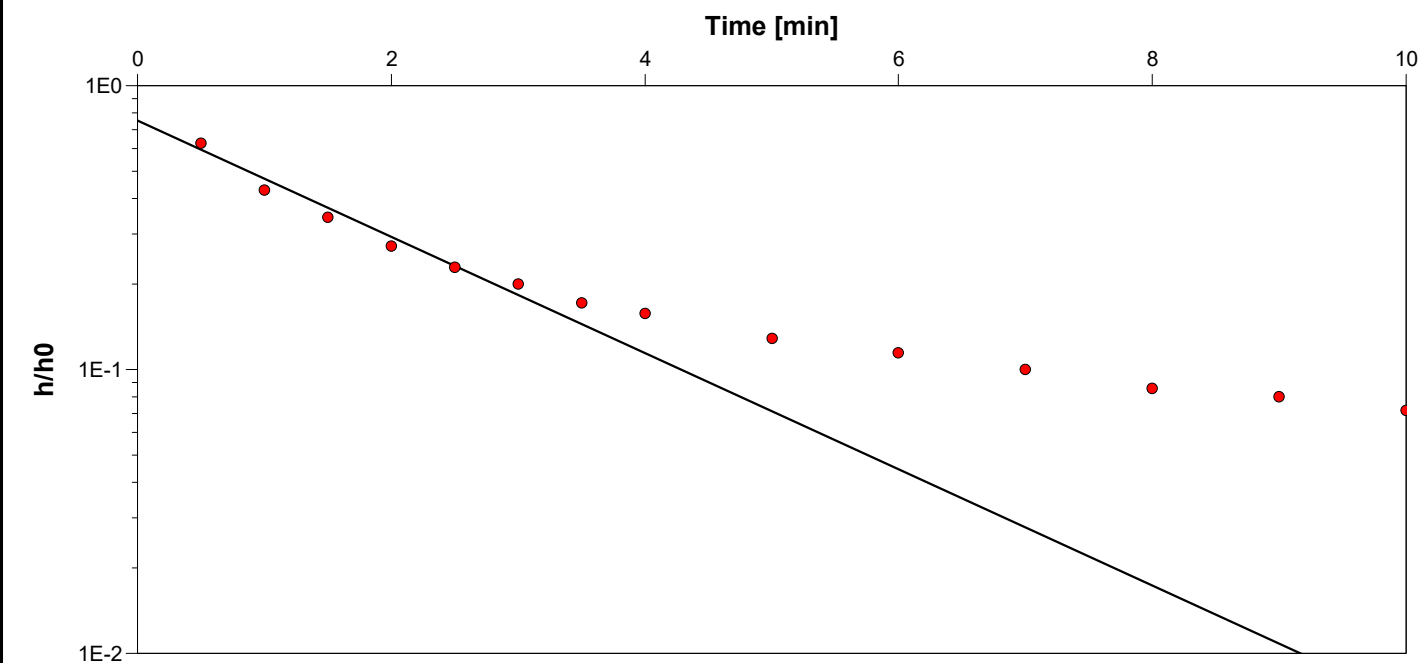
Test Date: 2025-05-27

Analysis Performed by: M.Francis

Rising Head Test

Analysis Date: 2025-09-12

Aquifer Thickness:



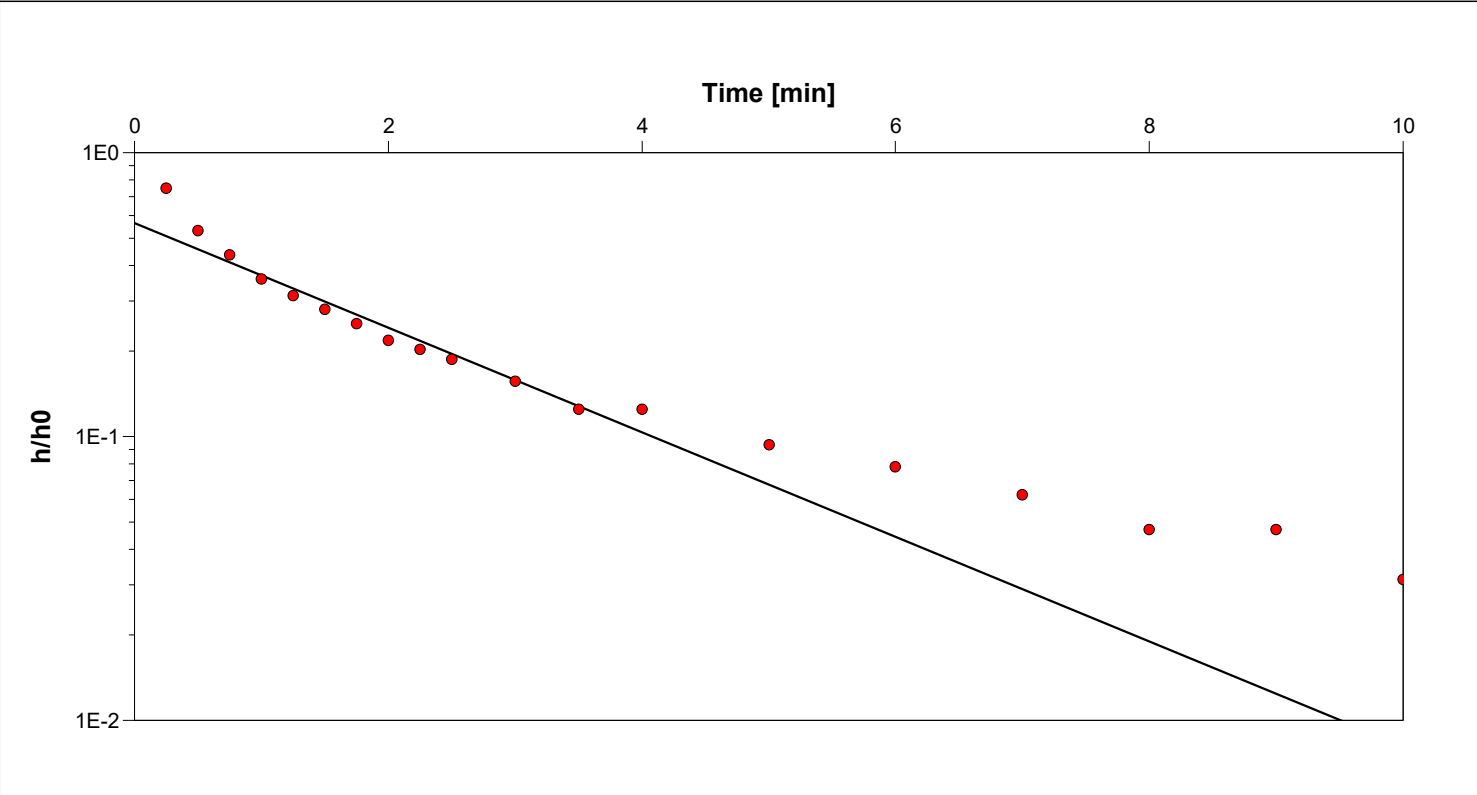
Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/s]
BH-4	4.5×10^{-6}



Slug Test Analysis Report		
Project: 1812 CR 10, Village of Ida		
Number: 0007-001		
Client: Ian Cameron		

Location: 1812 County Road 10, Ida, Ontario	Slug Test: BH-4 SWRT 3	Test Well: BH-4
Test Conducted by: M. Francis		Test Date: 2025-05-27
Analysis Performed by: M. Francis	Rising Head Test	Analysis Date: 2025-09-12
Aquifer Thickness:		



Calculation using Hvorslev		
Observation Well	Hydraulic Conductivity [m/s]	
BH-4	4.1×10^{-6}	



Slug Test Analysis Report

Project: 1812 CR 10, Village of Ida

Number: 0007-001

Client: Ian Cameron

Location: 1812 County Road 10, Ida, Ontario

Slug Test: BH-6 SWRT 1

Test Well: BH-6

Test Conducted by: M. Francis

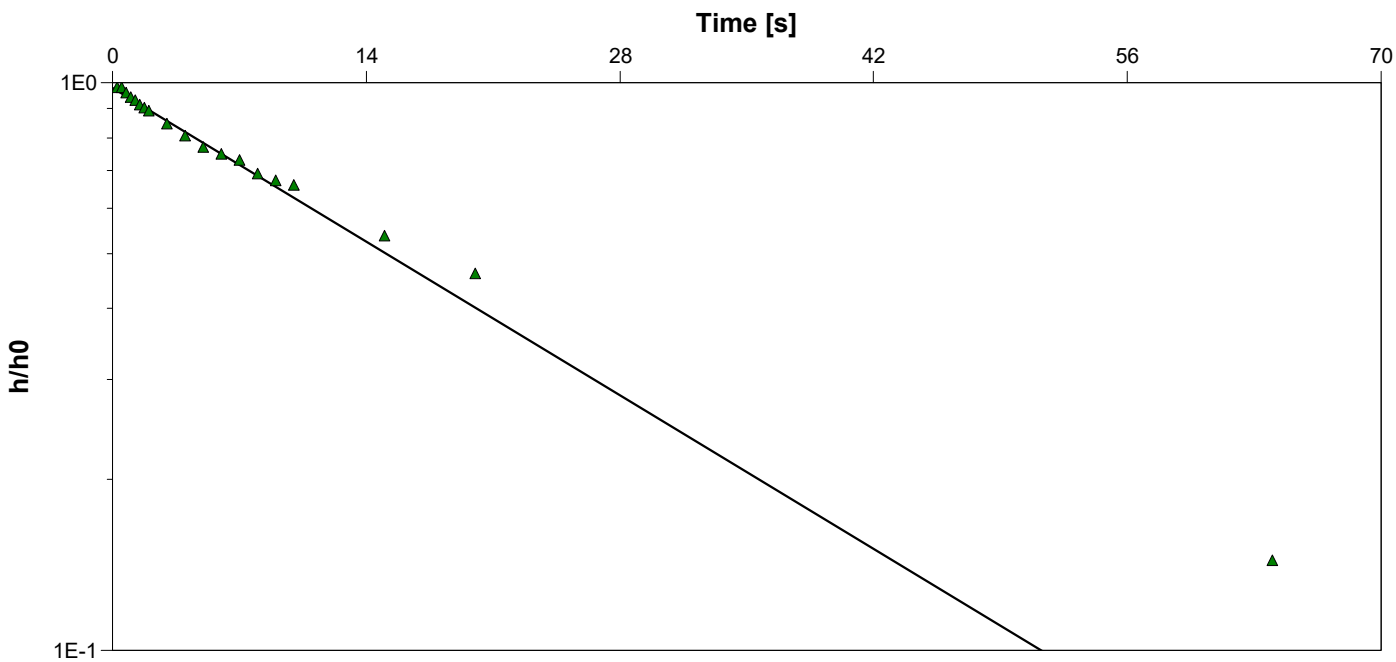
Test Date: 2025-05-27

Analysis Performed by: M. Francis

Rising Head Test

Analysis Date: 2025-09-12

Aquifer Thickness:



Calculation using Hvorslev

Observation Well

Hydraulic Conductivity
[m/s]

BH-6

2.6×10^{-5}



Slug Test Analysis Report

Project: 1812 CR 10, Village of Ida

Number: 0007-001

Client: Ian Cameron

Location: 1812 County Road 10, Ida, Ontario

Slug Test: BH-6 SWRT 2

Test Well: BH-6

Test Conducted by:

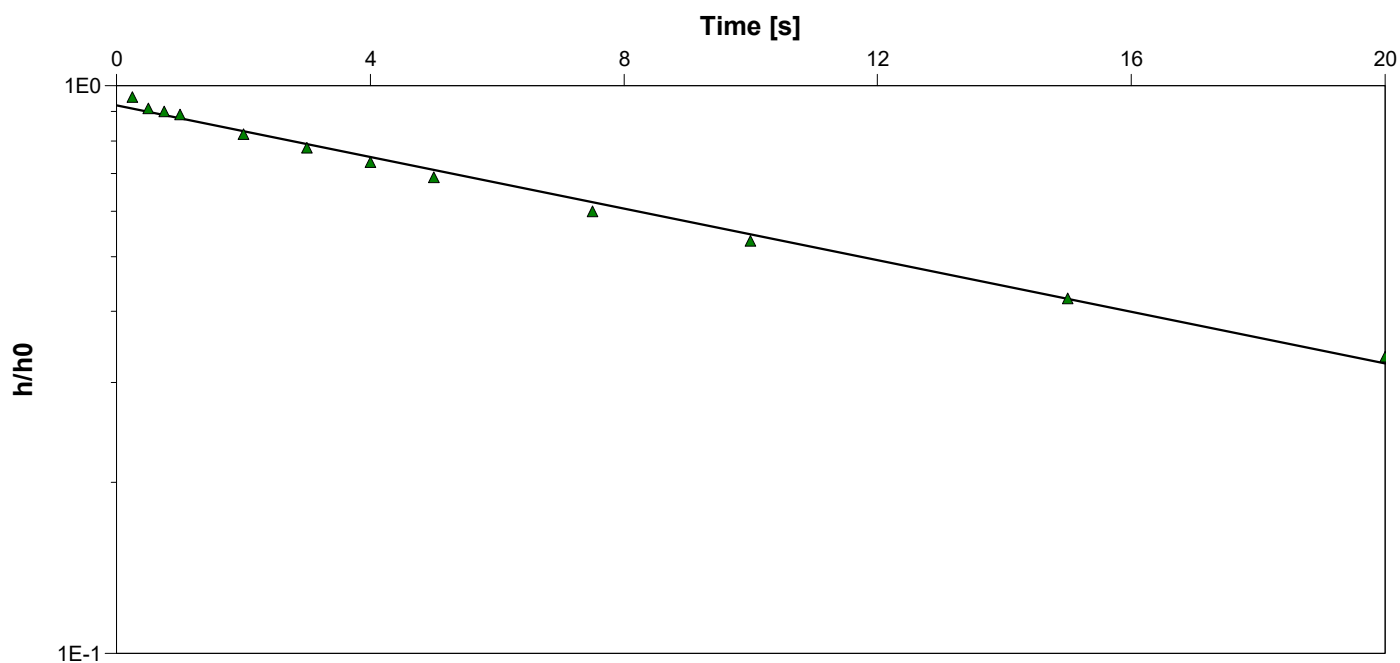
Test Date: 2025-05-27

Analysis Performed by: M. Francis

Rising Head Test

Analysis Date: 2025-09-12

Aquifer Thickness:



Calculation using Hvorslev

Observation Well

Hydraulic Conductivity
[m/s]

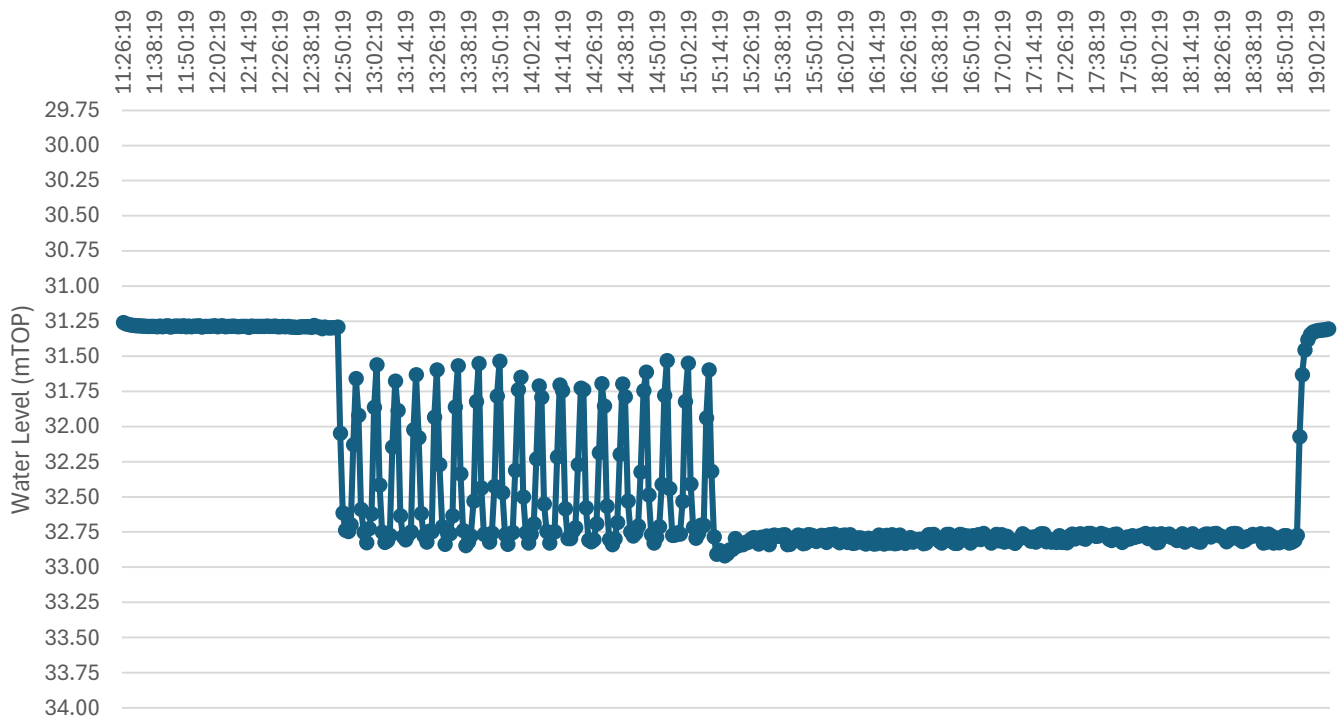
BH-6

3.0×10^{-5}

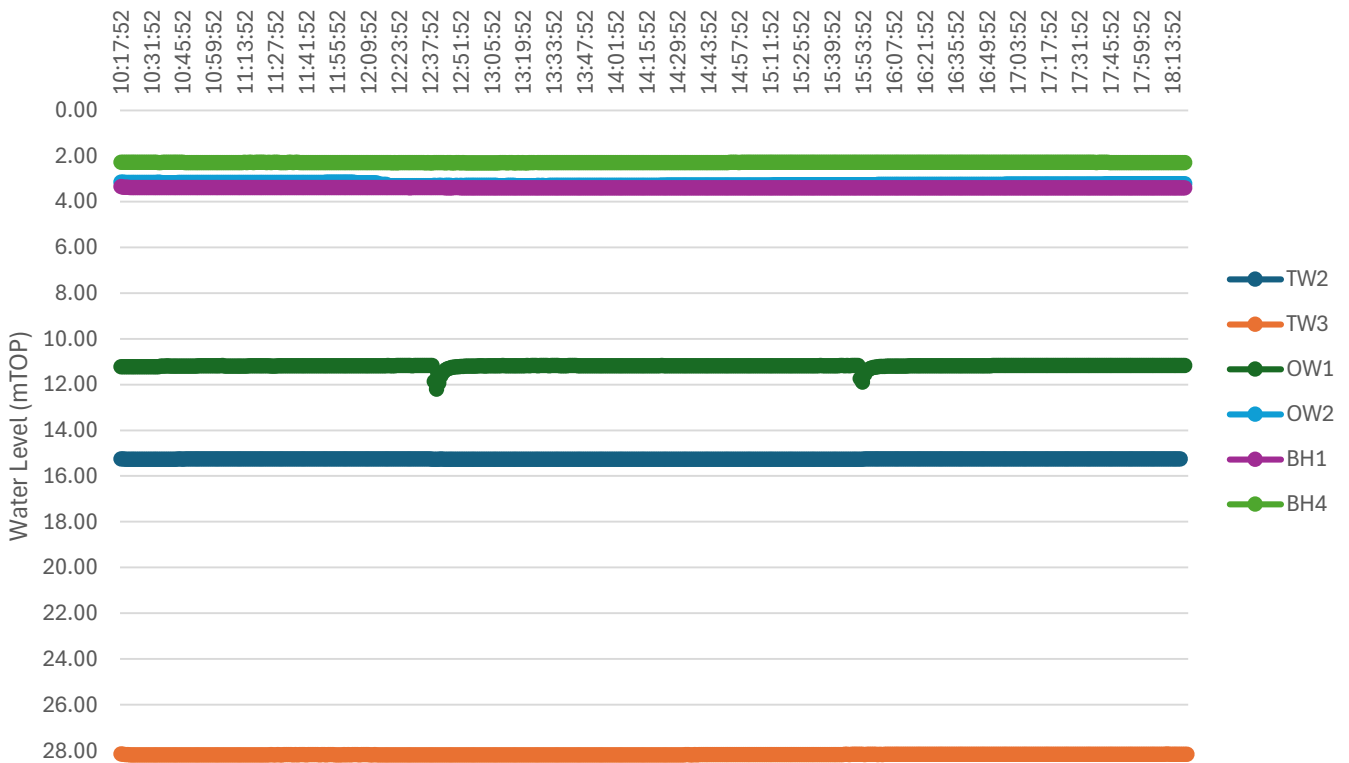
Appendix E

Pumping Test Hydrographs

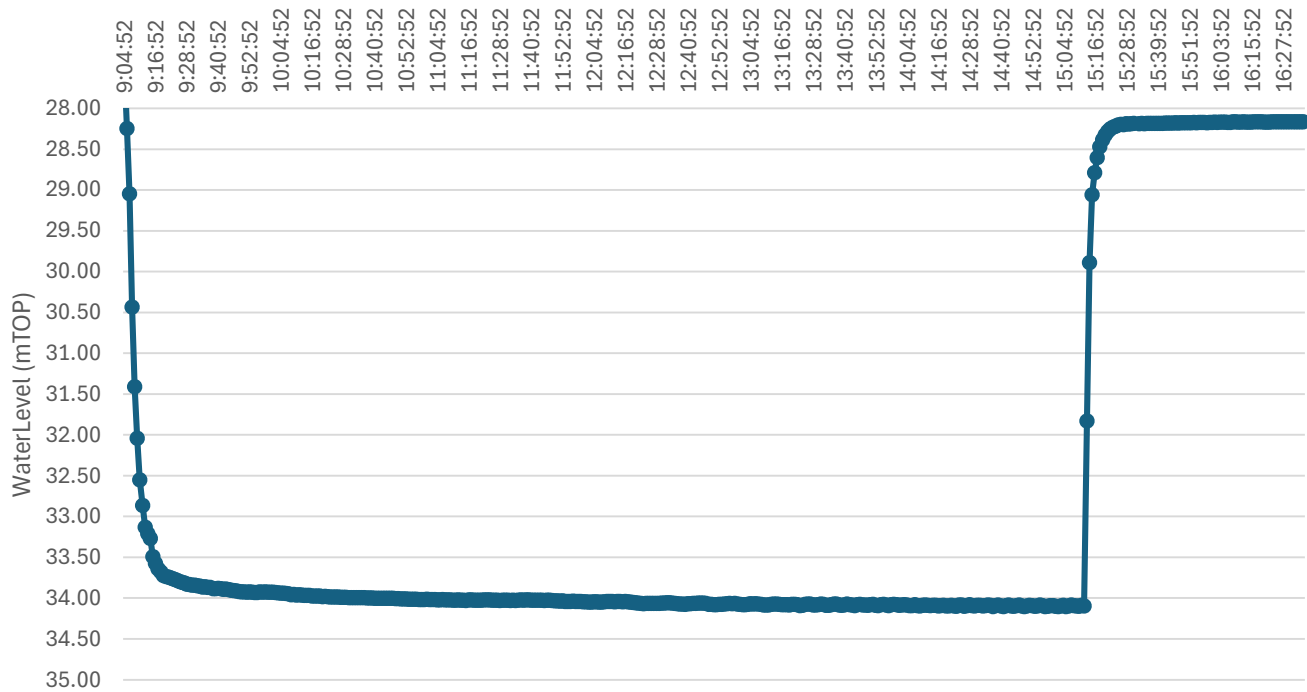
TW1 Pump Test (June 17, 2025)



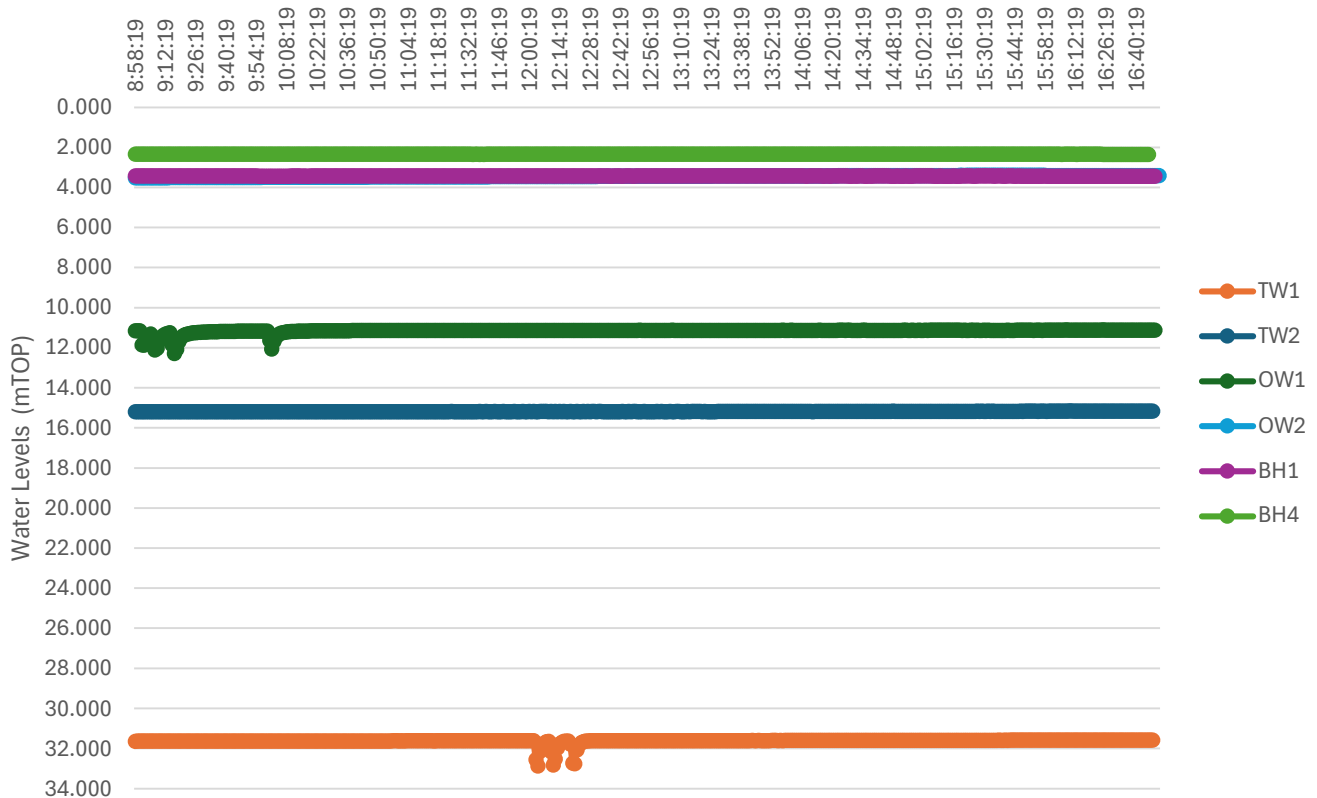
Monitroing Network for TW1 Pump Test (July 17, 2025)



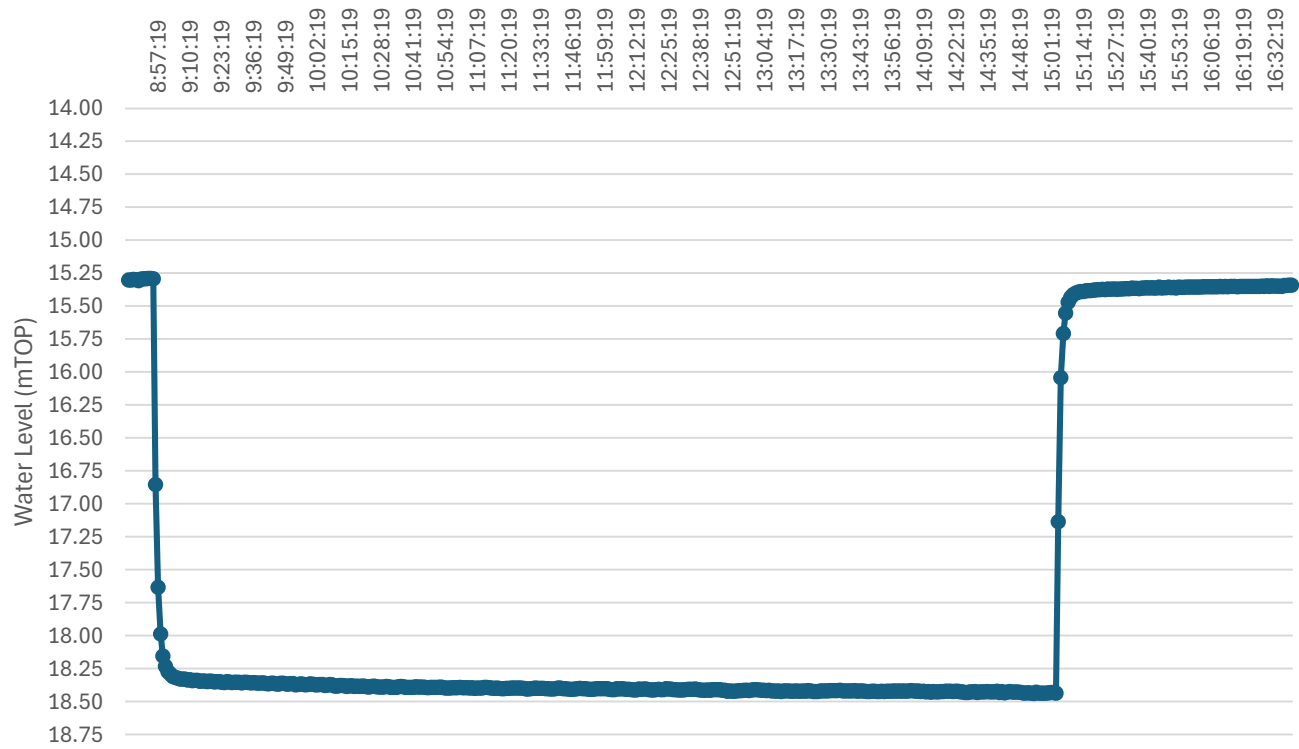
TW3 Pump Test (June 19, 2025)



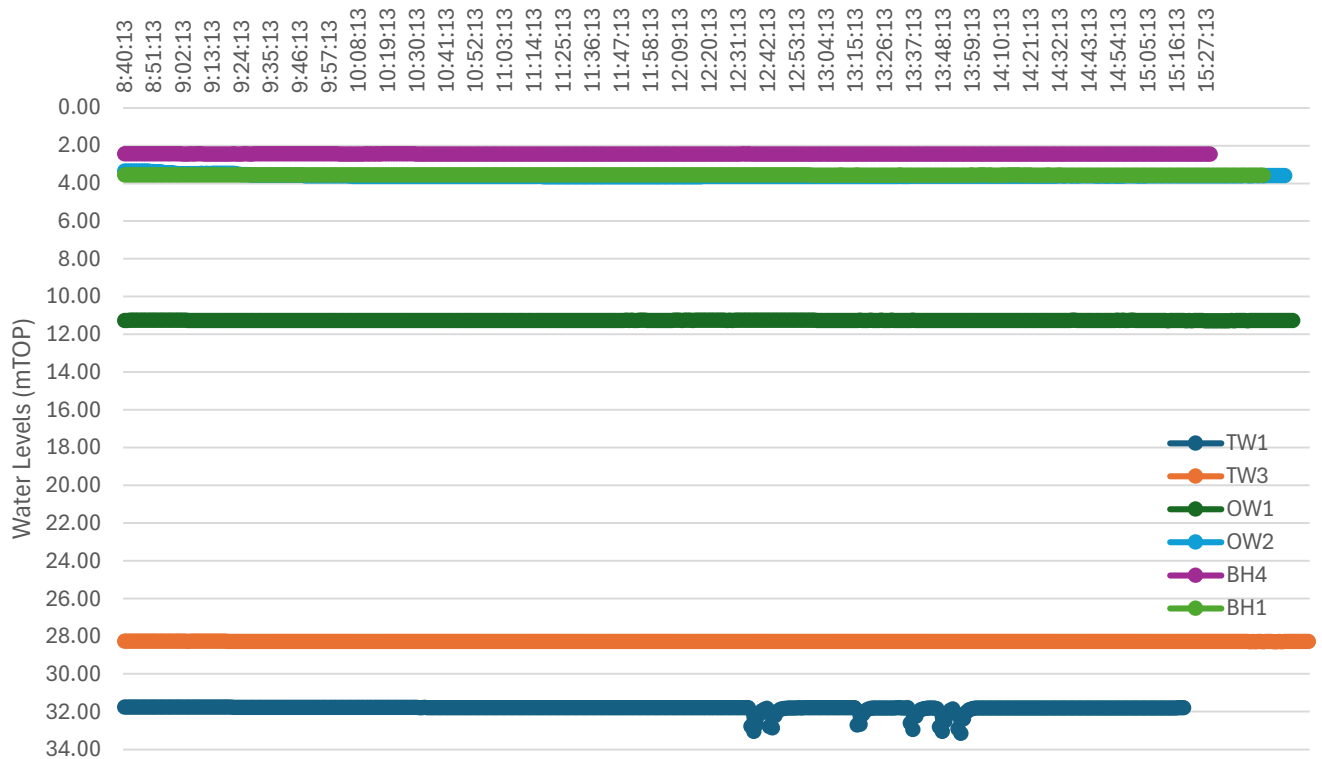
Monitoring Network for TW3 Pump Test (July 19, 2025)



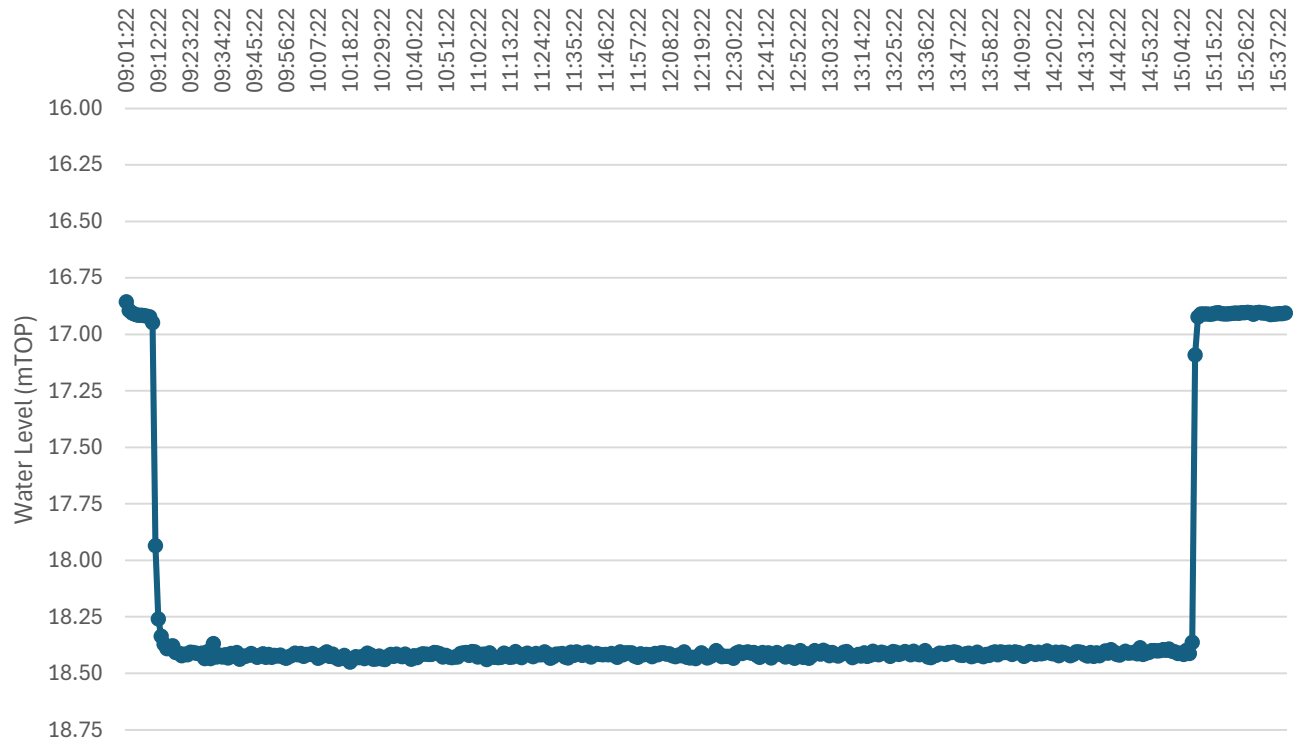
TW2 Pump Test (June 20, 2025)



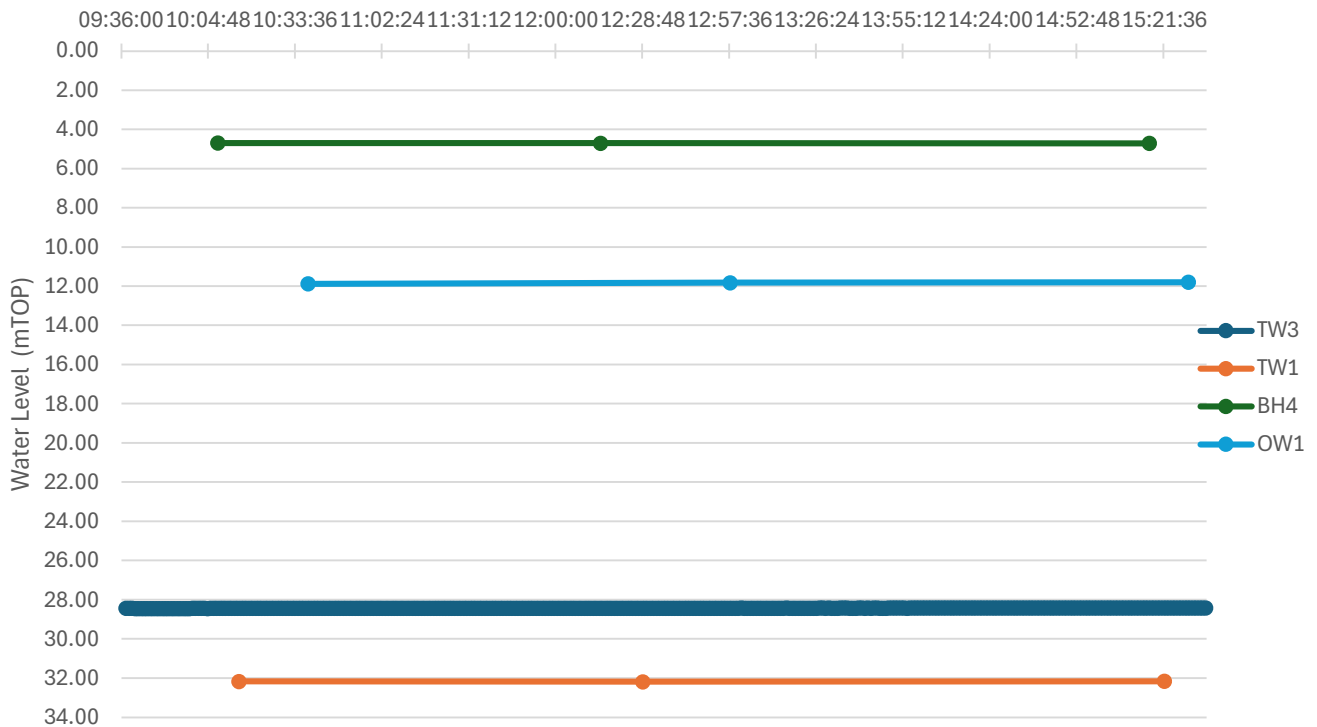
Monitoring Program for TW2 Pump Test (June 20, 2025)



TW2 (deepened) Pump Test (Aug. 8, 2025)



Monitoring Network for TW2 (deepened) Pump Test (Aug 8, 2025)



Appendix F

Water Quality Analysis

Nitrate-Nitrite & Phosphorus Samples: BH-1, BH-4, BH-6 & OW1



FINAL REPORT

CA14320-MAY25 R1

0007-001, 1812 CR10, Village of Ida, ON

Prepared for

Pigeonview Consulting



FINAL REPORT

CA14320-MAY25 R1

First Page

CLIENT DETAILS		LABORATORY DETAILS	
Client	Pigeonview Consulting	Project Specialist	Maarit Wolfe, Hon.B.Sc
Address	70 Cedarview Drive	Laboratory	SGS Canada Inc.
	Omeme, ON	Address	185 Concession St., Lakefield ON, K0L 2H0
	K0L2W0. Canada		
Contact	Mike Francis	Telephone	705-652-2000
Telephone	705-559-1920	Facsimile	705-652-6365
Facsimile		Email	Maarit.Wolfe@sgs.com
Email	pigeonview.consulting@gmail.com	SGS Reference	CA14320-MAY25
Project	0007-001, 1812 CR10, Village of Ida, ON	Received	05/12/2025
Order Number		Approved	05/21/2025
Samples	Solution (2)	Report Number	CA14320-MAY25 R1
		Date Reported	05/21/2025

COMMENTS
Temperature of Sample upon Receipt: 11 degrees C
Cooling Agent Present: yes
Chain of Custody Number: N/A
Phos TR spk low due to sample matrix

SIGNATORIES
Maarit Wolfe, Hon.B.Sc 



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FINAL REPORT

CA14320-MAY25 R1

Client: Pigeonview Consulting
Project: 0007-001, 1812 CR10, Village of Ida, ON
Project Manager: Mike Francis
Samplers: Mike Francis

MATRIX: WATER

Sample Number	5	6
Sample Name	BH6	BH1
Sample Matrix	Solution	Solution
Sample Date	12/05/2025	12/05/2025

L1 = ODWS_MAC / WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03

Parameter	Units	RL	L1	Result	Result
General Chemistry					
Total Reactive Phosphorous (o-phosphate as P)	mg/L	0.03		< 0.03	< 0.03
Metals and Inorganics					
Nitrite (as N)	as N mg/L	0.03	1	< 0.03	< 0.03
Nitrate (as N)	as N mg/L	0.06	10	3.88	0.85
Nitrate + Nitrite (as N)	as N mg/L	0.06		3.88	0.85



EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated



FINAL REPORT

CA14320-MAY25 R1

QC SUMMARY

Anions by IC
Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Nitrate + Nitrite (as N)	DIO0392-MAY25	mg/L	0.06	<0.06	NA		NA			NA		
Nitrite (as N)	DIO0392-MAY25	mg/L	0.03	<0.03	ND	20	99	90	110	106	75	125
Nitrate (as N)	DIO0392-MAY25	mg/L	0.06	<0.06	0	20	101	90	110	105	75	125

Reactive Phosphorus by SFA
Method: SM 4500-P F | Internal ref.: ME-CA-IENVISFA-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Total Reactive Phosphorous (o-phosphate as P)	SKA0125-MAY25	mg/L	0.03	<0.03	ND	10	95	90	110	74	75	125



FINAL REPORT

CA14320-MAY25 R1

QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.



LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

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This report supersedes all previous versions.

-- End of Analytical Report --



Industries & Environment - Lakeland, 185 Concession St., Lakeland, ON K0L 2H0 Phone: 705-552-2000 Fax: 705-552-6365 Web: www.sgs.com/environment

Request for Laboratory Services and CHAIN OF CUSTODY

Page 1 of 2

London 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

Laboratory Information Section - Lab use only

Received By: MAY 12 2005 Aditi
Received Date: 2 / 4 / 05 (mm/dd/yy)
Received Time: 11:45 (hr : min)

Received By (signature): _____
Custody Seal Present: Yes ☐ No ☐
Custody Seal Intact: Yes ☐ No ☐

Cooling Agent Present: Yes ☐ No ☒
Temperature Upon Receipt (°C) 11.3 Type: ICE PACKS

P.O. #: _____
Site Location/ID: 1812 CR10, Village of Ida, ON
LAB LIMS #: CA 14320-114435

REPORT INFORMATION

INVOICE INFORMATION

Company: Pigeonview Consulting
Contact: Michael Francis
Address: 70 Cedarview Drive, Ormeau, ON
Phone: 705 559 1920
Fax: _____
Email: pigeonview.consulting@gmail.com

Quotation # 2025 822
Project # 0007-001
Turnaround Time (TAT) REQUIRED
RUSH TAT (Additional Charges May Apply): ☒ Regular TAT (5-7 days)
PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION
RUSH TAT: ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days
NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

REGULATIONS

☐ O.Reg 153/04 ☐ O.Reg 406/19
Table 1 ☐ Res/Park ☐ Soil Texture: ☐ Other Regulations: ☐ Reg 347/558 (3 Day min TAT)
Table 2 ☐ Ind/Com ☐ Coarse ☐ PWQO ☐ MMER
Table 3 ☐ Agri/Other ☐ Medium/Fine ☐ ICME ☐ Other: _____
Table ☐ App. ☐ MISA
Soil Volume ☐ <350m3 ☐ >350m3 ☒ ODWS Not Reportable *See note

RECORD OF SITE CONDITION (RSC)

YES ☐ NO ☐

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	# OF BOTTLES	MATRIX	M & I										Other (please specify)				SP/LP	TCLP	COMMENTS:
					Field Filtered (Y/N)	Metals & Inorganics Ind CrVI, CN, Hg pH, (B(HWS), EC, SAR-soil) (Cl, Na-water)	Full Metals Suite ICP metals plus B(HWS-soil only) Hg, CrVI	ICP Metals only Sb, As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mo, Ni, Se, Ag, Ti, U, V, Zn	PAHs only	SVOCs all ind PAHs, ABNs, CPs	PCBs Total ☐ Aroclor ☐	F1-F4 + BTEX	F1-F4 only no BTEX	VOCs all ind BTEX	BTEX only	Pesticides Organochlorine or specify other	Sewer Use: Specify pkg:	Water Characterization Pkg General ☐ Extended ☐	Specify tests	Specify tests	
1 BHO	5/12/05	1040	2	GM	N	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
2 BH1	5/12/05	1050	2	GV	N	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
3						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
4						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
5						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
6						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
7						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
8						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
9						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
10						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
11						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
12						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Observations/Comments/Special Instructions

Sampled By (NAME): Mike Francis Signature: _____ Date: 5-12-05 (mm/dd/yy)
Relinquished by (NAME): Mike Francis Signature: _____ Date: 5-12-05 (mm/dd/yy)
Note: Submission of samples to SGS is acknowledgment that you have been provided direction on sample collection, handling and transportation of samples. (2) Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the laboratory. (3) Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at: http://www.sgs.com/terms_and_conditions.htm (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



FINAL REPORT

CA14392-JUL25 R---

0007-001, 1812 CR 10, Ida, ON

Prepared for

Pigeonview Consulting



FINAL REPORT

CA14392-JUL25 R---

First Page

CLIENT DETAILS		LABORATORY DETAILS	
Client	Pigeonview Consulting	Project Specialist	Brad Moore Hon. B.Sc
Address	70 Cedarview Drive	Laboratory	SGS Canada Inc.
	Omeme, ON	Address	185 Concession St., Lakefield ON, K0L 2H0
	K0L2W0. Canada		
Contact	Mike Francis	Telephone	705-652-2143
Telephone	705-559-1920	Facsimile	705-652-6365
Facsimile		Email	brad.moore@sgs.com
Email	pigeonview.consulting@gmail.com	SGS Reference	CA14392-JUL25
Project	0007-001, 1812 CR 10, Ida, ON	Received	07/09/2025
Order Number		Approved	07/11/2025
Samples	Ground Water (1)	Report Number	CA14392-JUL25 R---
		Date Reported	07/11/2025

COMMENTS
Temperature of Sample upon Receipt: 16 degrees C
Cooling Agent Present:yes
Custody Seal Present:no
Chain of Custody Number:N/A

SIGNATORIES
Brad Moore Hon. B.Sc



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FINAL REPORT

CA14392-JUL25 R—

Client: Pigeonview Consulting
Project: 0007-001, 1812 CR 10, Ida, ON
Project Manager: Mike Francis
Samplers: Mike Francis

MATRIX: WATER

Sample Number 5
Sample Name BH4
Sample Matrix Ground Water
Sample Date 09/07/2025

L1 = ODWS_MAC / WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03

Parameter	Units	RL	L1	Result
General Chemistry				
Total Reactive Phosphorous (o-phosphate as P)	mg/L	0.03		< 0.03
Metals and Inorganics				
Nitrite (as N)	as N mg/L	0.03	1	< 0.03
Nitrate (as N)	as N mg/L	0.06	10	0.13
Nitrate + Nitrite (as N)	as N mg/L	0.06		0.13



EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated



FINAL REPORT

CA14392-JUL25 R---

QC SUMMARY

Anions by IC
Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Nitrate + Nitrite (as N)	DIO0263-JUL25	mg/L	0.06	<0.06	NA		NA			NA		
Nitrite (as N)	DIO0263-JUL25	mg/L	0.03	<0.03	ND	20	100	80	120	98	70	130
Nitrate (as N)	DIO0263-JUL25	mg/L	0.06	<0.06	0	20	102	80	120	85	70	130

Reactive Phosphorus by SFA
Method: SM 4500-P F | Internal ref.: ME-CA-IENVISFA-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Total Reactive Phosphorous (o-phosphate as P)	SKA0096-JUL25	mg/L	0.03	<0.03	ND	10	97	90	110	84	75	125



FINAL REPORT

CA14392-JUL25 R---

QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

**LEGEND****FOOTNOTES**

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

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This report supersedes all previous versions.

-- End of Analytical Report --



Request for Laboratory Services and CHAIN OF CUSTODY

Environment, Health & Safety - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Concession Court, London, ON, N6E 2S8 Phone: 519-872-4500 Toll Free: 877-848-8060 Fax: 519-872-0361

No:

Page 1 of 1

Received By: JUL 09 2025

Received Date: 15:50 (mm/dd/yy)

Received Time: 15:50 (hr : min)

Received By (signature):

Custody Seal Present: Yes ☒ No ☐

Custody Seal Intact: Yes ☒ No ☐

INVOICE INFORMATION

Company: Pigeonview Consulting Inc.

Contact: Mike Francis

Address: 70 Cedarview Dr, Omamee, ON

Phone: 705-559-1920

Fax:

Email: pigeonview.consulting@gmail.com

Received By (signature):

Cooling Agent Present: Yes ☒ No ☐

Temperature Upon Receipt (°C): 16 x 2

INVOICE INFORMATION

(same as Report Information)

Company:

Contact:

Address:

Phone:

Email:

Quotation #: 2025 822

Project #: 0007-001

TURNAROUND TIME (TAT) REQUIRED

TAT's are quoted in business days (exclude statutory holidays & weekends).
Samples received after 6pm or on weekends: TAT begins next business day

☐ Regular TAT (5-7days)

RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☒ 4 Days

PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date: Jul 14, 2025

*NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

REGULATIONS

☐ O.Reg 153/04 ☐ O.Reg 406/19

Table 1 ☐ Res/Park ☐ Soil Texture: ☐ Coarse ☐ Medium/Fine

Table 2 ☐ Ind/Com ☐ Other: ☐ MISA

Table 3 ☐ Agri/Other ☐ Other: ☐ MISA

Table 4 ☐ Other: ☐ MISA

Soil Volume ☐ <350m3 ☐ >350m3

Other Regulations: ☐ Reg 347/558 (3 Day min TAT)

☐ PWQO ☐ MMER

☐ CCOME ☐ Other: ☐ MISA

☐ ODWS Not Reportable *See note

☐ YES ☐ NO

Sewer By-Law:

☐ Sanitary

☐ Storm

☐ Municipality:

ANALYSIS REQUESTED

M & I

SVOC

PAHs only

ICP Metals only

Full Metals Suite

ICP Metals plus B (HMS-est only) Hg, Cu, V

SVOCs

PAHs only

PCBs Total ☐ Aroclor

F1-F4 + BTEX

VOCs

BTEX only

Pesticides

Organochlorine or specify other

Other (please specify)

Appendix 2: 406/19 Leachate Screening

Water Characterization Pkg

General

Extended

Specify

TCLP

tests

M&I

VOC

PCB

B(a)P

ABN

Ignit.

COMMENTS:

NO2 NO3

as per bottles rec'd

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

as per Brand

Sampled By (NAME): Mike Francis

Relinquished by (NAME): Mike Francis

Signature: [Signature]

Date: 07.09.25 (mm/dd/yy)

Signature: [Signature]

Date: 07.09.25 (mm/dd/yy)

Signature: [Signature]

Date: 07.09.25 (mm/dd/yy)

Signature: [Signature]

Date: 07.09.25 (mm/dd/yy)

Signature: [Signature]

Date: 07.09.25 (mm/dd/yy)

Note: Submission of samples to SGS is acknowledgement that you have been provided direction on sample collection/handling and transportation of samples. (2) Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). (3) Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



FINAL REPORT

CA14395-JUL25 R---

0007-001, 1812 CR 10, Ida, ON

Prepared for

Pigeonview Consulting



FINAL REPORT

CA14395-JUL25 R---

First Page

CLIENT DETAILS		LABORATORY DETAILS	
Client	Pigeonview Consulting	Project Specialist	Brad Moore Hon. B.Sc
Address	70 Cedarview Drive	Laboratory	SGS Canada Inc.
	Omeme, ON	Address	185 Concession St., Lakefield ON, K0L 2H0
	K0L2W0. Canada		
Contact	Mike Francis	Telephone	705-652-2143
Telephone	705-559-1920	Facsimile	705-652-6365
Facsimile		Email	brad.moore@sgs.com
Email	pigeonview.consulting@gmail.com	SGS Reference	CA14395-JUL25
Project	0007-001, 1812 CR 10, Ida, ON	Received	07/09/2025
Order Number		Approved	07/14/2025
Samples	Ground Water (1)	Report Number	CA14395-JUL25 R---
		Date Reported	07/14/2025

COMMENTS

Temperature of Sample upon Receipt: 13 degrees C

Cooling Agent Present:yes

Custody Seal Present:no

Chain of Custody Number:N/A

SIGNATORIES

Brad Moore Hon. B.Sc



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FINAL REPORT

CA14395-JUL25 R—

Client: Pigeonview Consulting
Project: 0007-001, 1812 CR 10, Ida, ON
Project Manager: Mike Francis
Samplers: Mike Francis

MATRIX: WATER

Sample Number 5
Sample Name OW1
Sample Matrix Ground Water
Sample Date 09/07/2025

L1 = ODWS_MAC / WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03

Parameter	Units	RL	L1	Result
General Chemistry				
Total Reactive Phosphorous (o-phosphate as P)	mg/L	0.03		< 0.03
Metals and Inorganics				
Nitrite (as N)	as N mg/L	0.03	1	< 0.03
Nitrate (as N)	as N mg/L	0.06	10	1.33
Nitrate + Nitrite (as N)	as N mg/L	0.06		1.33



EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated



FINAL REPORT

CA14395-JUL25 R---

QC SUMMARY

Anions by IC
Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Nitrate + Nitrite (as N)	DIO0272-JUL25	mg/L	0.06	<0.06	NA		NA			NA		
Nitrite (as N)	DIO0272-JUL25	mg/L	0.03	<0.03	ND	20	101	80	120	97	70	130
Nitrate (as N)	DIO0272-JUL25	mg/L	0.06	<0.06	0	20	102	80	120	96	70	130

Reactive Phosphorus by SFA
Method: SM 4500-P F | Internal ref.: ME-CA-IENVISFA-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Total Reactive Phosphorous (o-phosphate as P)	SKA0096-JUL25	mg/L	0.03	<0.03	ND	10	97	90	110	84	75	125



FINAL REPORT

CA14395-JUL25 R---

QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.



LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

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This report supersedes all previous versions.

-- End of Analytical Report --



Environment, Health & Safety

Lakeland, 185 Concession St., Lakeland, ON N0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London, 857 Concession Court, London, ON N6E 2S8 Phone: 519-672-4500 Toll Free: 877-946-8060 Fax: 519-672-0261

Request for Laboratory Services and CHAIN OF CUSTODY

No:

Page 1 of 1

Laboratory Information Section - Lab use only

Received By: Jul 9 2025

Received Date: Jul 9 2025 (mm/dd/yy)

Received Time: 15:00 (hr : min)

Received by (signature): [Signature]

Custody Seal Present: Yes ☒ No ☐

Custody Seal Intact: Yes ☐ No ☐

Cooling Agent Present: Yes ☒ No ☐

Temperature Upon Receipt (°C): 13.2

Temperature Upon Receipt (°F): 55.8

P.O. #:

Site Location/ID:

LAB LIMS #:

REPORT INFORMATION

Company: Pigeonview Consulting Inc.

Contact: Mike Francis

Address: 70 Cedarview Dr. Ormeau, ON

Phone: 705-559-1920

Fax:

Email: pigeonview.consulting@gmail.com

INVOICE INFORMATION

Quotation #: 2025 822

Project #: 0007-001

Turnaround Time (TAT) Required: 1812 CR 10, Ida, ON

Regular TAT (5-7 days)

RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days

PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date: Jul 14, 2025

*NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

REGULATIONS

☐ O.Reg 153/04

☐ O.Reg 406/19

☐ Table 1

☐ Table 2

☐ Table 3

☐ Table

☐ Soil Volume

☐ RECORD OF SITE CONDITION (RSC)

☐ SAMPLE IDENTIFICATION

☐ DATE SAMPLED

☐ TIME SAMPLED

☐ # OF BOTTLES

☐ MATRIX

☐ Field Filtered (Y/N)

☐ Metals & Inorganics

☐ Full Metals Suite

☐ ICP Metals only

☐ PAHs only

☐ SVOCs

☐ PCBs

☐ F1-F4 + BTEX

☐ F1-F4 only

☐ VOCs

☐ BTEX only

☐ Pesticides

☐ Appendix 2: 406/19 Leachate Screening

☐ Sewer Use:

☐ Water Characterization Pkg

☐ General

☐ Extended

☐ TCLP

☐ Specific

Other (please specify)

NO₂ NO₃ phosphates

as per bottles received

as per BOD

as per BOD

as per BOD

as per BOD

as per BOD

as per BOD

as per BOD

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Other (please specify)

NO₂ NO₃ phosphates

as per bottles received

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Other (please specify)

NO₂ NO₃ phosphates

as per bottles received

as per BOD

as per BOD

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Other (please specify)

NO₂ NO₃ phosphates

as per bottles received

as per BOD

as per BOD

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COMMENTS:

Sampled By (NAME): Mike Francis	Signature: <u>[Signature]</u>	Date: <u>07.09.2025</u>	Pin Copy - Client
Relinquished by (NAME): Mike Francis	Signature: <u>[Signature]</u>	Date: <u>07.09.2025</u>	Yellow & White Copy - SGS
Revision #: 1.4			
Note: Submission of samples to SGS is acknowledgement that you have been provided direction on sample collection, handling and transportation of samples. (2) Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). (3) Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm . (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.			

D-5-5 Water Quality Samples: TW1, TW2, & TW3:



FINAL REPORT

CA14977-JUN25 R

0007-001, 1812 CR10, Village of Ida, ON

Prepared for

Pigeonview Consulting

First Page

CLIENT DETAILS		LABORATORY DETAILS	
Client	Pigeonview Consulting	Project Specialist	Brad Moore Hon. B.Sc
Address	70 Cedarview Drive Omeme, ON K0L2W0, Canada	Laboratory	SGS Canada Inc.
Contact	Mike Francis	Address	185 Concession St., Lakefield ON, K0L 2H0
Telephone	705-559-1920	Telephone	705-652-2143
Facsimile		Facsimile	705-652-6365
Email	pigeonview.consulting@gmail.com	Email	brad.moore@sgs.com
Project	0007-001, 1812 CR10, Village of Ida, ON	SGS Reference	CA14977-JUN25
Order Number		Received	06/18/2025
Samples	Ground Water (1)	Approved	06/26/2025
		Report Number	CA14977-JUN25 R
		Date Reported	06/26/2025

COMMENTS

MAC - Maximum Acceptable Concentration
AO/OG - Aesthetic Objective / Operational Guideline
MDL - SGS Method Detection Limit

Temperature of Sample upon Receipt: 10 degrees C
Cooling Agent Present:yes
Custody Seal Present:yes

Chain of Custody Number:N/A

SIGNATORIES

Brad Moore Hon. B.Sc

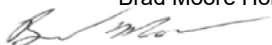


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FINAL REPORT

CA14977-JUN25 R

Client: Pigeonview Consulting
Project: 0007-001, 1812 CR10, Village of Ida, ON
Project Manager: Mike Francis
Samplers: Mike Francis

MATRIX: WATER

		Sample Number	
		9	
		Sample Name	TW1
		Sample Matrix	Ground Water
		Sample Date	17/06/2025

L1 = ODWS_AO_OG /WATER / - - Table 4 - Drinking Water - Reg O.169_03
L2 = ODWS_MAC /WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03

Parameter

General Chemistry

Parameter	Units	RL	L1	L2	Result
Alkalinity	mg/L as CaCO3	2	500		209
Conductivity	uS/cm	2			509
Colour	TCU	3	5		< 3
Tannin+Lignin	mg phenol/L	0.05			1.22
UV Transmittance	%T				94.4
Turbidity	NTU	0.10	5	1	7.0
Total Dissolved Solids	mg/L	30	500		286
Ammonia+Ammonium (N)	as N mg/L	0.04			< 0.04
Total Kjeldahl Nitrogen	as N mg/L	0.5			< 0.5
Dissolved Organic Carbon	mg/L	1	5		< 1
Hydrogen Sulphide	mg/L	0.02	0.05		< 0.02

Metals and Inorganics

Sulphate	mg/L	2	500		59
Nitrite (as N)	as N mg/L	0.03		1	< 0.03
Nitrate (as N)	as N mg/L	0.06		10	< 0.06
Nitrate + Nitrite (as N)	as N mg/L	0.06			< 0.06
Hardness	mg/L as CaCO3	0.05	100		278
Calcium	mg/L	10			77700
Iron	µg/L	7	300		600
Magnesium	µg/L	1			20000
Manganese	µg/L	0.01	50		19.0
Sulphide	mg/L	0.02			< 0.02



FINAL REPORT

CA14977-JUN25 R

Client: Pigeonview Consulting
Project: 0007-001, 1812 CR10, Village of Ida, ON
Project Manager: Mike Francis
Samplers: Mike Francis

MATRIX: WATER

L1 = ODWS_AO_OG /WATER / - - Table 4 - Drinking Water - Reg O.169_03
L2 = ODWS_MAC /WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03

Sample Number 9
Sample Name TW1
Sample Matrix Ground Water
Sample Date 17/06/2025

Parameter

Units **RL** **L1** **L2** **Result**

Metals and Inorganics (continued)

Microbiology

Total Coliform	MPN/100mL	0	0	6
Ecoli	mpn/100mL	0	0	1
Fecal Coliform	mpn/100mL	0		0

Na

Sodium	µg/L	10	200000	20000	5000
--------	------	----	--------	-------	------

Other (ORP)

pH	No unit	0.05	8.5		7.89
Chloride	mg/L	2	250		6



FINAL REPORT

CA14977-JUN25 R

EXCEEDANCE SUMMARY

				ODWS_AO_OG / WATER / - - Table 4 - Drinking Water - Reg O.169_03	ODWS_MAC / WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03
Parameter	Method	Units	Result	L1	L2

TW1

Turbidity	SM 2130	NTU	7.0	5	1
Hardness	SM 3030/EPA 200.8	mg/L as CaCO3	278	100	
Iron	SM 3030/EPA 200.8	µg/L	600	300	
E.Coli	SM 9223B	mpn/100mL	1		0
Total Coliform	SM 9223B	MPN/100mL	6		0



FINAL REPORT

CA14977-JUN25 R

QC SUMMARY

Alkalinity

Method: SM 2320 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Alkalinity	EWL0497-JUN25	mg/L as CaCO3	2	<2	0	20	102	80	120	NA		

Ammonia by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-007

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Ammonia+Ammonium (N)	SKA0211-JUN25	mg/L	0.04	<0.04	ND	10	101	90	110	96	75	125



FINAL REPORT

CA14977-JUN25 R

QC SUMMARY

Anions by discrete analyzer

Method: US EPA 325.2 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-026

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)	Low	Spike Recovery (%)	Low	High
Chloride	DIO5021-JUN25	mg/L	2	<1	6	20	101	80	80	104	75	125
Sulphate	DIO5021-JUN25	mg/L	2	<2	ND	20	106	80	80	103	75	125

Anions by IC

Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)	Low	Spike Recovery (%)	Low	High
Nitrate + Nitrite (as N)	DIO0553-JUN25	mg/L	0.06	<0.06	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite (as N)	DIO0553-JUN25	mg/L	0.03	<0.03	ND	20	98	90	90	97	75	125
Nitrate (as N)	DIO0553-JUN25	mg/L	0.06	<0.06	ND	20	97	90	90	96	75	125



FINAL REPORT

CA14977~JUN25 R

QC SUMMARY

Carbon by SFA
Method: SM 5310 | Internal ref.: ME-CA-IENVISFA-LAK-AN-009

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Dissolved Organic Carbon	SKA0198-JUN25	mg/L	1	<1	4	20	100	90	110	102	75	125

Colour
Method: SM 2120 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-002

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Colour	EWL0495-JUN25	TCU	3	<3	0	10	105	80	120	NA		

Conductivity
Method: SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Conductivity	EWL0497~JUN25	uS/cm	2	<2	0	20	98	90	110	NA		



FINAL REPORT

CA14977-JUN25 R

QC SUMMARY

Metals in aqueous samples - ICP-MS

Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-IENVISPE-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Calcium	EMS0161-JUN25	ug/L	10	<0.01	ND	20	91	90	110	105	70	130
Iron	EMS0161-JUN25	ug/L	7	<0.007	ND	20	95	90	110	95	70	130
Magnesium	EMS0161-JUN25	ug/L	1	<0.001	ND	20	97	90	110	109	70	130
Manganese	EMS0161-JUN25	ug/L	0.01	<0.00001	ND	20	99	90	110	101	70	130
Sodium	EMS0161-JUN25	ug/L	10	<10	ND	20	94	90	110	107	70	130

Microbiology

Method: SM 9223B | Internal ref.: ME-CA-IENVIMIC-LAK-AN-021

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Ecoli	BAC9314-JUN25	mpn/100mL	-	ACCEPTED	ACCEPTED							
Fecal Coliform	BAC9314-JUN25	mpn/100mL	-	ACCEPTED	D ACCEPTED							
Total Coliform	BAC9314-JUN25	MPN/100mL	-	ACCEPTED	D SEE NOTE							



FINAL REPORT

CA14977-JUN25 R

QC SUMMARY

pH

Method: SM 4500 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Low	High
pH	EWL0497-JUN25	No unit	0.05	NA	1		100			NA		

Solids Analysis

Method: SM 2540C | Internal ref.: ME-CA-IENVIEWL-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Low	High
Total Dissolved Solids	EWL0479-JUN25	mg/L	30	<30	3	20	98	80	120	NA		

Sulphide by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-008

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Low	High
Sulphide	SKA0206-JUN25	mg/L	0.02	<0.02	ND	20	86	80	120	NA	75	125



FINAL REPORT

CA14977-JUN25 R

QC SUMMARY

Tannins & Lignins

Method: SM 5550 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-015

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Tannin+Lignin	EWL0540-JUN25	mg phenol/L	0.05	<0.05	10	15	100	85	115	85	75	125

Total Nitrogen

Method: SM 4500-N C/4500-NO3- F | Internal ref.: ME-CA-IENVISFA-LAK-AN-002

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Total Kjeldahl Nitrogen	SKA0219-JUN25	as N mg/L	0.5	<0.5	2	10	102	90	110	103	75	125

Turbidity

Method: SM 2130 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Turbidity	EWL0468-JUN25	NTU	0.10	< 0.10	0	10	100	90	110	NA		



FINAL REPORT

CA14977-JUN25 R

QC SUMMARY

- Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.
- Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.
- LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.
- Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate laboratory accuracy with sample matrix effects.
- Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.
- RL: Reporting limit
- RPD: Relative percent difference
- AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

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SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

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This report supersedes all previous versions.

-- End of Analytical Report --



FINAL REPORT

CA15061-AUG25 R1

0007-001, 1812 CR10, Village of Ida, ON

Prepared for

Pigeonview Consulting

First Page

CLIENT DETAILS

Client Pigeonview Consulting

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Email pigeonview.consulting@gmail.com

Project 0007-001, 1812 CR10, Village of Ida, ON

Order Number

Samples Ground Water (1)

LABORATORY DETAILS

Project Specialist Jill Campbell, B.Sc.,GISAS

Laboratory SGS Canada Inc.

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SGS Reference CA15061-AUG25

Received 08/08/2025

Approved 08/15/2025

Report Number CA15061-AUG25 R1

Date Reported 08/15/2025

COMMENTS

Temperature of Sample upon Receipt: 16 degrees C

Chain of Custody Number:N/A

SIGNATORIES

Jill Campbell, B.Sc.,GISAS



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FINAL REPORT

CA15061-AUG25 R1

Client: Pigeonview Consulting
Project: 0007-001, 1812 CR10, Village of Ida, ON
Project Manager: Mike Francis
Samplers: Mike Francis

MATRIX: WATER

		Sample Number	
		9	
		Sample Name	TW2
		Sample Matrix	Ground Water
		Sample Date	08/08/2025

L1 = ODWS_AO_OG /WATER / - - Table 4 - Drinking Water - Reg O.169_03

L2 = ODWS_MAC /WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03

Parameter

General Chemistry

Parameter	Units	RL	L1	L2	Result
Temperature @ pH	°C	0			22.6
Alkalinity	mg/L as CaCO3	2	500		264
Conductivity	uS/cm	2			710
Colour	TCU	3	5		4
Turbidity	NTU	0.10	5	1	18
Total Dissolved Solids	mg/L	30	500		403
Tannin+Lignin	mg phenol/L	0.05			1.51
UV Transmittance	%T				95.5
Total Kjeldahl Nitrogen	as N mg/L	0.5			< 0.5
Ammonia+Ammonium (N)	as N mg/L	0.1			< 0.1
Hydrogen Sulphide	mg/L	0.02	0.05		< 0.02
Dissolved Organic Carbon	mg/L	1	5		1

Metals and Inorganics

Sulphide	mg/L	0.02			< 0.02
Sulphate	mg/L	1	500		35
Nitrite (as N)	as N mg/L	0.03		1	< 0.03
Nitrate (as N)	as N mg/L	0.06		10	< 0.06
Nitrate + Nitrite (as N)	as N mg/L	0.06			< 0.06
Hardness	mg/L as CaCO3	0.05	100		310
Calcium	mg/L	10			83000
Iron	µg/L	7	300		1500
Magnesium	µg/L	1			25000



FINAL REPORT

CA15061-AUG25 R1

Client: Pigeonview Consulting
Project: 0007-001, 1812 CR10, Village of Ida, ON
Project Manager: Mike Francis
Samplers: Mike Francis

MATRIX: WATER

L1 = ODWS_AO_OG /WATER / - - Table 4 - Drinking Water - Reg O.169_03
L2 = ODWS_MAC /WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03

Sample Number 9
Sample Name TW2
Sample Matrix Ground Water
Sample Date 08/08/2025

Parameter	Units	RL	L1	L2	Result
Manganese	µg/L	0.01	50		32

Metals and Inorganics (continued)

Total Coliform	MPN/100mL	0	0		1
E. Coli	mpn/100mL	0	0		0
Fecal Coliform	mpn/100mL	0			0

Na

Sodium	µg/L	10	200000	20000	22000
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Other (ORP)

pH	No unit	0.05	8.5		7.86
Chloride	mg/L	1	250		54



FINAL REPORT

CA15061-AUG25 R1

EXCEEDANCE SUMMARY

				ODWS_AO_OG / WATER / - - Table 4 - Drinking Water - Reg O.169_03	ODWS_MAC / WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03
Parameter	Method	Units	Result	L1	L2

TW2

Turbidity	SM 2130	NTU	18	5	1
Hardness	SM 3030/EPA 200.8	mg/L as CaCO3	310	100	
Iron	SM 3030/EPA 200.8	µg/L	1500	300	
Sodium	SM 3030/EPA 200.8	µg/L	22000		20000
Total Coliform	SM 9223B	MPN/100mL	1		0



FINAL REPORT

CA15061-AUG25 R1

QC SUMMARY

Alkalinity

Method: SM 2320 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Alkalinity	EWL0160-AUG25	mg/L as CaCO3	2	<2	0	20	104	80	120	NA	Low	High

Ammonia by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-007

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Ammonia+Ammonium (N)	SKA0089-AUG25	as N mg/L	0.1	<0.1	2	10	99	90	110	90	75	125



FINAL REPORT

CA15061-AUG25 R1

QC SUMMARY

Anions by discrete analyzer

Method: US EPA 325.2 | Internal ref.: ME-CA-IENVIEWWL-LAK-AN-026

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Chloride	DIO8023-AUG25	mg/L	1	<1	1	20	96	70	130	77	70	130
Sulphate	DIO8023-AUG25	mg/L	1	<2	1	20	107	80	120	100	75	125

Anions by IC

Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Nitrate + Nitrite (as N)	DIO0220-AUG25	mg/L	0.06	<0.06	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite (as N)	DIO0220-AUG25	mg/L	0.03	<0.03	ND	20	102	80	120	100	70	130
Nitrate (as N)	DIO0220-AUG25	mg/L	0.06	<0.06	ND	20	103	80	120	96	70	130



FINAL REPORT

CA15061-AUG25 R1

QC SUMMARY

Carbon by SFA
Method: SM 5310 | Internal ref.: ME-CA-IENVISFA-LAK-AN-009

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)	High	Spike Recovery (%)	Low	High
Dissolved Organic Carbon	SKA0087-AUG25	mg/L	1	<1	2	20	101	90	110	97	75	125

Colour
Method: SM 2120 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-002

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)	High	Spike Recovery (%)	Low	High
Colour	EWL0188-AUG25	TCU	3	< 3	ND	10	100	80	120	NA		

Conductivity
Method: SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)	High	Spike Recovery (%)	Low	High
Conductivity	EWL0160-AUG25	uS/cm	2	< 2	0	10	100	90	110	NA		



FINAL REPORT

CA15061-AUG25 R1

QC SUMMARY

Metals in aqueous samples - ICP-MS

Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-IENVISPE-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Calcium	EMS0069-AUG25	ug/L	10	<0.01	2	20	95	80	120	98	70	130
Iron	EMS0069-AUG25	ug/L	7	<0.007	15	20	102	80	120	100	70	130
Magnesium	EMS0069-AUG25	ug/L	1	<0.001	0	20	100	80	120	116	70	130
Manganese	EMS0069-AUG25	ug/L	0.01	<0.00001	12	20	97	80	120	99	70	130
Sodium	EMS0069-AUG25	ug/L	10	<10	1	20	98	80	120	103	70	130

Microbiology

Method: SM 9223B | Internal ref.: ME-CA-IENVIMIC-LAK-AN-021

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
E. Coli	BAC9140-AUG25	mpn/100mL	-	ACCEPTED	ACCEPTED							
Fecal Coliform	BAC9140-AUG25	mpn/100mL	-	ACCEPTED	D							
Total Coliform	BAC9140-AUG25	MPN/100mL	-	ACCEPTED	D							



FINAL REPORT

CA15061-AUG25 R1

QC SUMMARY

pH

Method: SM 4500 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
pH	EWL0160-AUG25	No unit	0.05	NA	0		100	Low	High	NA	Low	High

Solids Analysis

Method: SM 2540C | Internal ref.: ME-CA-IENVIEWL-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Total Dissolved Solids	EWL0175-AUG25	mg/L	30	<30	2	20	100	80	120	NA	Low	High

Sulphide by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-008

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Sulphide	SKA0097-AUG25	mg/L	0.02	<0.02	ND	20	100	80	120	NA	75	125



FINAL REPORT

CA15061-AUG25 R1

QC SUMMARY

Tannins & Lignins

Method: SM 5550 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-015

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
									Low	High	Low	High
Tannin+Lignin	EWL0240-AUG25	mg phenol/L	0.05	<0.05	0	15	100	85	115	90	75	125

Total Nitrogen

Method: SM 4500-N C/4500-NO3- F | Internal ref.: ME-CA-IENVISFA-LAK-AN-002

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Total Kjeldahl Nitrogen	SKA0108-AUG25	as N mg/L	0.5	<0.5	3	10	103	90	110	101	75	125

Turbidity

Method: SM 2130 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low		High	Low	High
Turbidity	EWL0157-AUG25	NTU	0.10	< 0.10	3	10	100	90	110	NA	NA	



FINAL REPORT

CA15061-AUG25 R1

QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.
RL Reporting Limit.
 ↑ Reporting limit raised.
 ↓ Reporting limit lowered.
NA The sample was not analysed for this analyte
ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

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This report supersedes all previous versions.

-- End of Analytical Report --

[illegible]



FINAL REPORT

CA17095-JUN25 R

0007-001, 1812 County Rd. 10, Ida

Prepared for

Pigeonview Consulting

First Page

CLIENT DETAILS

Client Pigeonview Consulting

Address 70 Cedarview Drive
Omeme, ON
K0L2W0, Canada

Contact Mike Francis

Telephone 705-559-1920

Facsimile

Email pigeonview.consulting@gmail.com

Project 0007-001, 1812 County Rd. 10, Ida

Order Number

Samples Ground Water (1)

LABORATORY DETAILS

Project Specialist Jill Campbell, B.Sc.,GISAS

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SGS Reference CA17095-JUN25

Received 06/19/2025

Approved 06/26/2025

Report Number CA17095-JUN25 R

Date Reported 06/26/2025

COMMENTS

Temperature of Sample upon Receipt: 12 degrees C

Chain of Custody Number:N/A

SIGNATORIES

Jill Campbell, B.Sc.,GISAS



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FINAL REPORT

CA17095-JUN25 R

Client: Pigeonview Consulting
Project: 0007-001, 1812 County Rd. 10, Ida
Project Manager: Mike Francis
Samplers: Mike Francis

MATRIX: WATER

		Sample Number	
		9	
		Sample Name	TW3
		Sample Matrix	Ground Water
		Sample Date	19/06/2025

L1 = ODWS_AO_OG /WATER / - - Table 4 - Drinking Water - Reg O.169_03
L2 = ODWS_MAC /WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03

General Chemistry

Parameter	Units	RL	L1	L2	Result
Temperature @ pH	°C	0			19.6
Alkalinity	mg/L as CaCO3	2	500		235
Conductivity	uS/cm	2			540
Colour	TCU	3	5		6
Tannin+Lignin	mg phenol/L	0.05			1.62
UV Transmittance	%T				96.7
Turbidity	NTU	0.10	5	1	1.7
Total Dissolved Solids	mg/L	30	500		374
Ammonia+Ammonium (N)	as N mg/L	0.04			< 0.04
Total Kjeldahl Nitrogen	as N mg/L	0.5			< 0.5
Dissolved Organic Carbon	mg/L	1	5		1
Hydrogen Sulphide	mg/L	0.02	0.05		< 0.02

Metals and Inorganics

Sulphate	mg/L	1	500		27
Nitrite (as N)	as N mg/L	0.03		1	< 0.03
Nitrate (as N)	as N mg/L	0.06		10	7.94
Nitrate + Nitrite (as N)	as N mg/L	0.06			7.94
Hardness	mg/L as CaCO3	0.05	100		296
Calcium	mg/L	10			86600
Iron	µg/L	7	300		140
Magnesium	µg/L	1			19000
Manganese	µg/L	0.01	50		4.8



FINAL REPORT

CA17095-JUN25 R

Client: Pigeonview Consulting
Project: 0007-001, 1812 County Rd. 10, Ida
Project Manager: Mike Francis
Samplers: Mike Francis

MATRIX: WATER

Sample Number		9
Sample Name		TW3
Sample Matrix		Ground Water
Sample Date		19/06/2025

L1 = ODWS_AO_OG /WATER / - - Table 4 - Drinking Water - Reg O.169_03

L2 = ODWS_MAC /WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03

Parameter

Parameter	Units	RL	L1	L2	Result
Sulphide	mg/L	0.02			< 0.02

Metals and Inorganics (continued)

Microbiology

Total Coliform	MPN/100mL	0		0	0
E. Coli	mpn/100mL	0		0	0
Fecal Coliform	mpn/100mL	0			0

Na

Sodium	µg/L	10	200000	20000	4600
--------	------	----	--------	-------	------

Other (ORP)

pH	No unit	0.05	8.5		8.05
Chloride	mg/L	1	250		13

EXCEEDANCE SUMMARY

Parameter	Method	Units	Result	ODWS_AO_OG / WATER / - - Table 4 - Drinking Water - Reg O.169_03	ODWS_MAC / WATER / - - Table 1,2 and 3 - Drinking Water - Reg O.169_03
				L1	L2

TW3

Colour	SM 2120	TCU	6	5	
Turbidity	SM 2130	NTU	1.7		1
Hardness	SM 3030/EPA 200.8	mg/L as CaCO3	296	100	



FINAL REPORT

CA17095-JUN25 R

QC SUMMARY

Alkalinity

Method: SM 2320 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Alkalinity	EWL0518-JUN25	mg/L as CaCO3	2	<2	0	20	102	80	120	NA	Low	High

Ammonia by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-007

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Ammonia+Ammonium (N)	SKA0213-JUN25	mg/L	0.04	<0.04	0	10	101	90	110	97	75	125



FINAL REPORT

CA17095-JUN25 R

QC SUMMARY

Anions by discrete analyzer

Method: US EPA 325.2 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-026

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Chloride	DIO5023-JUN25	mg/L	1	<1	0	20	105	80	120	100	75	125
Sulphate	DIO5023-JUN25	mg/L	1	<2	2	20	102	80	120	86	75	125

Anions by IC

Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Nitrate + Nitrite (as N)	DIO0599-JUN25	mg/L	0.06	<0.06	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite (as N)	DIO0599-JUN25	mg/L	0.03	<0.03	ND	20	102	90	110	106	75	125
Nitrate (as N)	DIO0599-JUN25	mg/L	0.06	<0.06	ND	20	98	90	110	98	75	125



FINAL REPORT

CA17095-JUN25 R

QC SUMMARY

Carbon by SFA
Method: SM 5310 | Internal ref.: ME-CA-IENVISFA-LAK-AN-009

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Dissolved Organic Carbon	SKA0212-JUN25	mg/L	1	<1	1	20	103	90	110	106	75	125

Colour
Method: SM 2120 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-002

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Colour	EWL0587-JUN25	TCU	3	<3	0	10	105	80	120	NA		

Conductivity
Method: SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	High
Conductivity	EWL0518-JUN25	uS/cm	2	<2	0	20	99	90	110	NA		



FINAL REPORT

CA17095-JUN25 R

QC SUMMARY

Metals in aqueous samples - ICP-MS

Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-IENVISPE-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Low	High
Calcium	EMS0174-JUN25	ug/L	10	<0.01	0	20	96	90	110	108	70	130
Iron	EMS0174-JUN25	ug/L	7	<0.007	1	20	98	90	110	75	70	130
Magnesium	EMS0174-JUN25	ug/L	1	<0.001	0	20	96	90	110	108	70	130
Manganese	EMS0174-JUN25	ug/L	0.01	<0.00001	1	20	97	90	110	102	70	130
Sodium	EMS0174-JUN25	ug/L	10	<10	1	20	96	90	110	107	70	130

Microbiology

Method: SM 9223B | Internal ref.: ME-CA-IENVIMIC-LAK-AN-021

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Low	High
E. Coli	BAC9354-JUN25	mpn/100mL	-	ACCEPTED	ACCEPTED							
Fecal Coliform	BAC9354-JUN25	mpn/100mL	-	ACCEPTED	D							
Total Coliform	BAC9354-JUN25	MPN/100mL	-	ACCEPTED	D							



FINAL REPORT

CA17095-JUN25 R

QC SUMMARY

pH

Method: SM 4500 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
pH	EWL0518-JUN25	No unit	0.05	NA	0		100	Low	High	NA	Low	High

Solids Analysis

Method: SM 2540C | Internal ref.: ME-CA-IENVIEWL-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Total Dissolved Solids	EWL0516-JUN25	mg/L	30	<30	4	20	100	80	120	NA	Low	High

Sulphide by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-008

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Sulphide	SKA0206-JUN25	mg/L	0.02	<0.02	ND	20	86	80	120	NA	75	125



FINAL REPORT

CA17095-JUN25 R

QC SUMMARY

Tannins & Lignins

Method: SM 5550 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-015

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Tannin+Lignin	EWL0540-JUN25	mg phenol/L	0.05	<0.05	10	15	100	85	115	85	75	125

Total Nitrogen

Method: SM 4500-N C/4500-NO3- F | Internal ref.: ME-CA-IENVISFA-LAK-AN-002

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Total Kjeldahl Nitrogen	SKA0219-JUN25	as N mg/L	0.5	<0.5	2	10	102	90	110	103	75	125

Turbidity

Method: SM 2130 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
Turbidity	EWL0505-JUN25	NTU	0.10	< 0.10	6	10	100	90	110	NA		



FINAL REPORT

CA17095-JUN25 R

QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm.

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This report supersedes all previous versions.

-- End of Analytical Report --



Request for Laboratory Services and CHAIN OF CUSTODY

No:

Page 1 of 1

Received By: JUN 19 2025 (mm/dd/yy)

Received Date: 16:30 (hr:min)

Received Time: 16:30 (hr:min)

Received By (signature):

Custody Seal Present: Yes ☐ No ☐

Custody Seal Intact: Yes ☐ No ☐

REPORT INFORMATION

Company: Pigeonview Consulting

Contact: Mike Francis

Address: 70 Cedarview Dr.

Dummett, ON K0L 2V0

Phone: 705-559-1920

Fax:

Email: Pigeonview.Consulting@gmail.com

INVOICE INFORMATION

☒ (same as Report Information)

Company:

Contact:

Address:

Phone:

Fax:

Email:

Quotation #: 2025-821

Project #: 0007-001

P.O. #: 1812

Site Location/ID: 1812

County Rd. 10 Ida

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Client Regular TAT

Regular TAT (5-7 days)

1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☐

RUSH TAT (Additional Charges May Apply):

PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date:

*NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

ANALYSIS REQUESTED

M & I

SVOC

PCB

PHC

VOC

Pest

Other (please specify)

Specify tests

Specify tests

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Appendix G

Grain Size Distribution Charts

MECHANICAL ANALYSIS SHEET

Client: Redstone Engineering
 Project: Ida Subdivision - Phase 2
 Sampled By: Garnet Brenchley
 Sample No.: BH-1 - SS-1

Project No.: 25R103
 Location: Ida, Ontario
 Date: May 7, 2025
 Depth: 2.5 - 4.5'

SIEVE ANALYSIS OF RET. 4.75mm MATERIAL M2				COARSE MATERIAL						FIELD MOISTURE		HYGROSCOPIC MOISTURE	
SIEVE SIZE (MM'S)	CUMULATIVE			MASS (TOTAL SAMPLE) (A) = M1			761.6			TARE NO.		221	
	CUMULATIVE MASS (GMS.)	% RET M1	% PASS M1										
75.0 mm	0.0	0.0	100.0	RET 4.75 mm - DRY = M2			45.9			WET SOIL & TARE (GMS.)		42.87	
63.0 mm	0.0	0.0	100.0										
53.0 mm	0.0	0.0	100.0	PASS 4.75 mm - DRY = M3			715.7			DRY SOIL & TARE (GMS.)			
37.5 mm	0.0	0.0	100.0										
26.5 mm	0.0	0.0	100.0	MASS (TOTAL SAMPLE) (B) = M4			PARTICLE SIZE ANALYSIS			MOISTURE (GMS.)			
19.0 mm	17.3	2.3	97.7										
13.2 mm	32.3	4.2	95.8	RETAINED ON 2.00 mm - DRY = M5			64.5			DRY SOIL & TARE			
9.5 mm	33.7	4.4	95.6										
4.75 mm	45.9	6.0	94.0	PASSING 2.00 mm - DRY = M6			697.1			TARE (GMS.)			
Pan	20.0												
SIEVE ANALYSIS OF HYDROMETER MATERIAL (M7)				% RET 4.75 = $\frac{M2 \times 100}{M1}$ = K			6.0			DRY SOIL (GMS.)		0.9986	
				% RET 2.00 = $\frac{M5 \times (100-K)}{M1}$ = L			8.5						% MOISTURE
				HYDROMETER ANALYSIS MATERIAL PASS 2.00mm SIEVE (M7)						DRY MASS (M7) - UNCOR.			65.39
										DRY MASS (M7) - CORRECT			65.30
SIEVES SIZES (MM'S)	CUMULATIVE MASS (GMS.)	CUMULATIVE		SPECIFIC GRAVITY		2.720	CORRECTION (A)		0.99	DRY MASS (M7) - CORRECT	65.30		
		% RET M1	% PASS M1	TIME MIN.	TEMP C°	HYDROMETER READING			LEN (MM'S)				
2.00 mm	64.5	8.5	91.5	1	23	35.0	7.0	28.0	11.9	0.04474	38.9		
1.18 mm	1.39	10.4	89.6	2	23	32.0	7.0	25.0	12.4	0.03230	34.7		
0.600 mm	6.19	17.1	82.9	5	23	28.0	7.0	21.0	13.1	0.02099	29.1		
0.300 mm	10.80	23.6	76.4	15	23	25.5	7.0	18.5	13.5	0.01230	25.7		
0.150 mm	19.84	36.3	63.7	30	23	24.0	7.0	17.0	13.7	0.00876	23.6		
0.075 mm	28.14	47.9	52.1	60	23	22.0	7.0	15.0	14.1	0.00629	20.8		
Pan	30.0			120	24	20.0	7.5	12.5	14.5	0.00446	17.3		
				250	24	18.0	7.5	10.5	14.8	0.00312	14.6		
				1440	23	15.5	7.0	8.5	15.1	0.00133	11.8		

Tested By: Wayne Rayfuse

Date: May 27, 2025

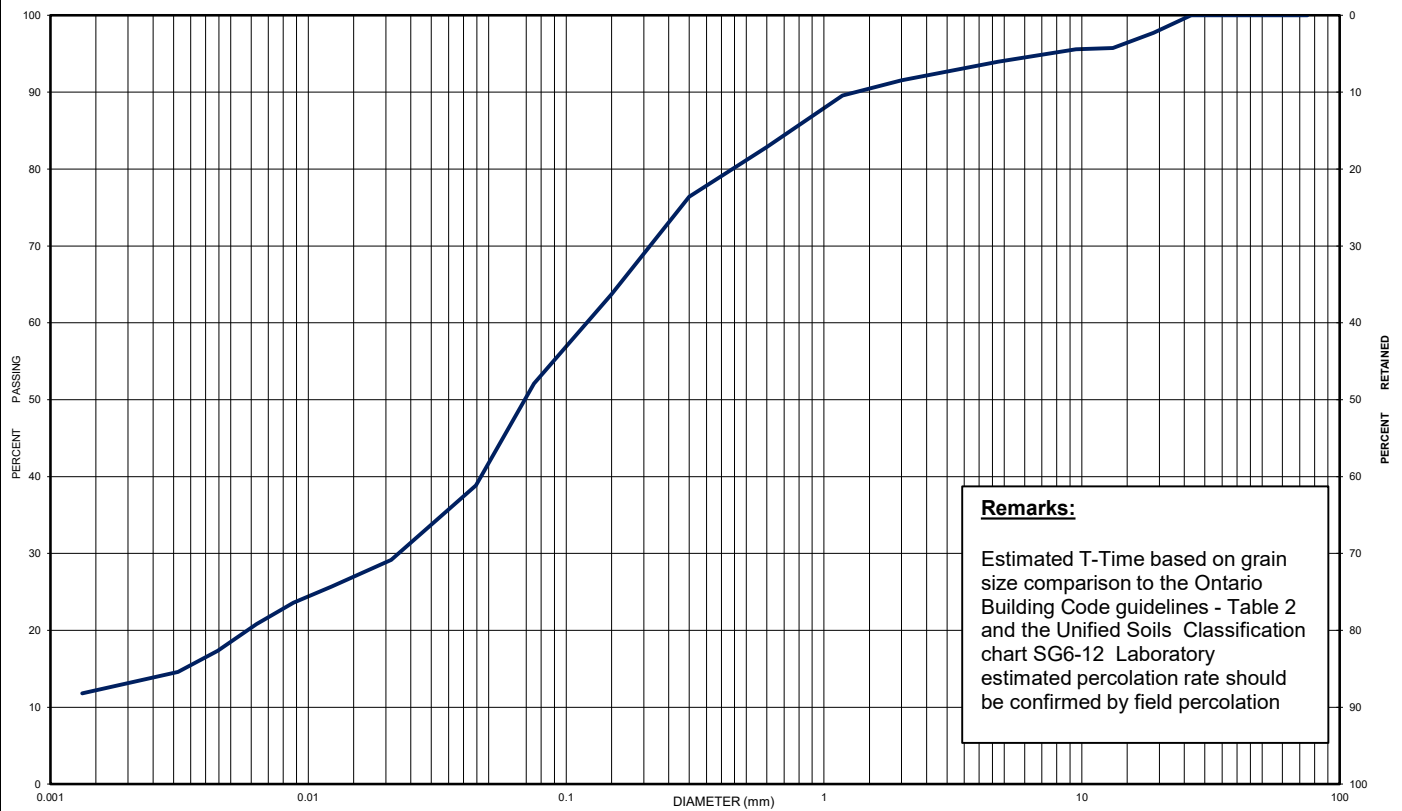
GRAIN SIZE DISTRIBUTION CHART

Client: *Redstone Engineering*
 Project: *Ida Subdivision - Phase 2*
 Sampled By: *Garnet Brenchley*
 Sample No.: *BH-1 - SS-1*

Project No.: *25R103*
 Location: *Ida, Ontario*
 Date: *May 7, 2025*
 Depth: *2.5 - 4.5'*

UNIFIED SOIL CLASSIFICATION SYSTEM

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



CLAY	SILT	VERY FINE	FINE	MEDIUM	COARSE	FINE GRAVEL	GRAVEL
		SAND					

U.S. BUREAU OF SOILS CLASSIFICATION

Sample No.	Description			Moisture (%)	Gravel	Sand	Silt	Clay	Class.
<i>BH-1 - SS-1</i>	<i>Silty SAND some clay trace of gravel</i>			<i>21.9</i>	<i>6</i>	<i>42</i>	<i>39</i>	<i>13</i>	<i>ML</i>
<i>D₆₀</i>	<i>D₃₀</i>	<i>D₁₀</i>	<i>C_u</i>	<i>C_c</i>	<i>Estimated Coefficient of Permeability</i>		<i>Estimated Percolation Time mins./cm.</i>		
<i>0.140</i>	<i>0.023</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>10⁻⁵</i>		<i>30 - 35 mins./cm</i>		

MECHANICAL ANALYSIS SHEET

Client: Redstone Engineering
 Project: Ida Subdivision - Phase 2
 Sampled By: Garnet Brenchley
 Sample No.: BH-3 - SS-1

Project No.: 25R103
 Location: Ida, Ontario
 Date: May 7, 2025
 Depth: 2.5 - 4.5'

SIEVE ANALYSIS OF RET. 4.75mm MATERIAL M2				COARSE MATERIAL						FIELD MOISTURE		HYGROSCOPIC MOISTURE
SIEVE SIZE (MM'S)	CUMULATIVE			MASS (TOTAL SAMPLE) (A) = M1			407.2			TARE NO.		205
	CUMULATIVE MASS (GMS.)	% RET M1	% PASS M1									
				RET 4.75 mm - DRY = M2			24.8			WET SOIL & TARE (GMS.)		59.08
75.0 mm	0.0	0.0	100.0									
63.0 mm	0.0	0.0	100.0	PASS 4.75 mm - DRY = M3			382.4			DRY SOIL & TARE (GMS.)		58.96
53.0 mm	0.0	0.0	100.0									
37.5 mm	0.0	0.0	100.0	MASS (TOTAL SAMPLE) (B) = M4						MOISTURE (GMS.)		
26.5 mm	0.0	0.0	100.0									
19.0 mm	11.5	2.8	97.2	RETAINED ON 2.00 mm - DRY = M5			34.0			DRY SOIL & TARE		
13.2 mm	14.8	3.6	96.4									
9.5 mm	14.8	3.6	96.4	PASSING 2.00 mm - DRY = M6			373.2			TARE (GMS.)		
4.75 mm	24.8	6.1	93.9									
Pan	10.9			% RET 4.75 = $\frac{M2 \times 100}{M1}$ = K			6.1			DRY SOIL (GMS.)		
SIEVE ANALYSIS OF HYDROMETER MATERIAL (M7)												
				% RET 2.00 = $\frac{M5 \times (100-K)}{M1}$ = L			8.3			% MOISTURE	13.1	0.9980
				DRY MASS (M7) - UNCOR.						60.31		
				DRY MASS (M7) - CORRECT						60.19		
SIEVES SIZES (MM'S)	CUMULATIVE MASS (GMS.)	CUMULATIVE		SPECIFIC GRAVITY		2.723	CORRECTION (A)		0.99	DRY MASS (M7) - CORRECT		60.19
		% RET M1	% PASS M1	TIME MIN.	TEMP C°	HYDROMETER READING			LEN (MM'S)	CORRECTED DIAMETER (MM)		% PASS OF M1 = (PAR)/M7
2.00 mm	34.0	8.3	91.7	1	23	42.0	7.0	35.0	10.8	0.04262	52.8	
1.18 mm	0.83	9.6	90.4	2	23	39.5	7.0	32.5	11.2	0.03069	49.0	
0.600 mm	4.04	14.5	85.5	5	23	39.0	7.0	32.0	11.3	0.01950	48.2	
0.300 mm	7.28	19.4	80.6	15	23	37.5	7.0	30.5	11.5	0.01136	46.0	
0.150 mm	13.62	29.1	70.9	30	23	35.5	7.0	28.5	11.8	0.00813	43.0	
0.075 mm	19.14	37.5	62.5	60	23	34.0	7.0	27.0	12.1	0.00582	40.7	
Pan	19.9			120	24	31.5	7.0	24.5	12.5	0.00414	36.9	
				250	24	27.5	7.5	20.0	13.3	0.00296	30.2	
				1440	23	20.5	7.0	13.5	14.3	0.00129	20.4	

Tested By: Wayne Rayfuse

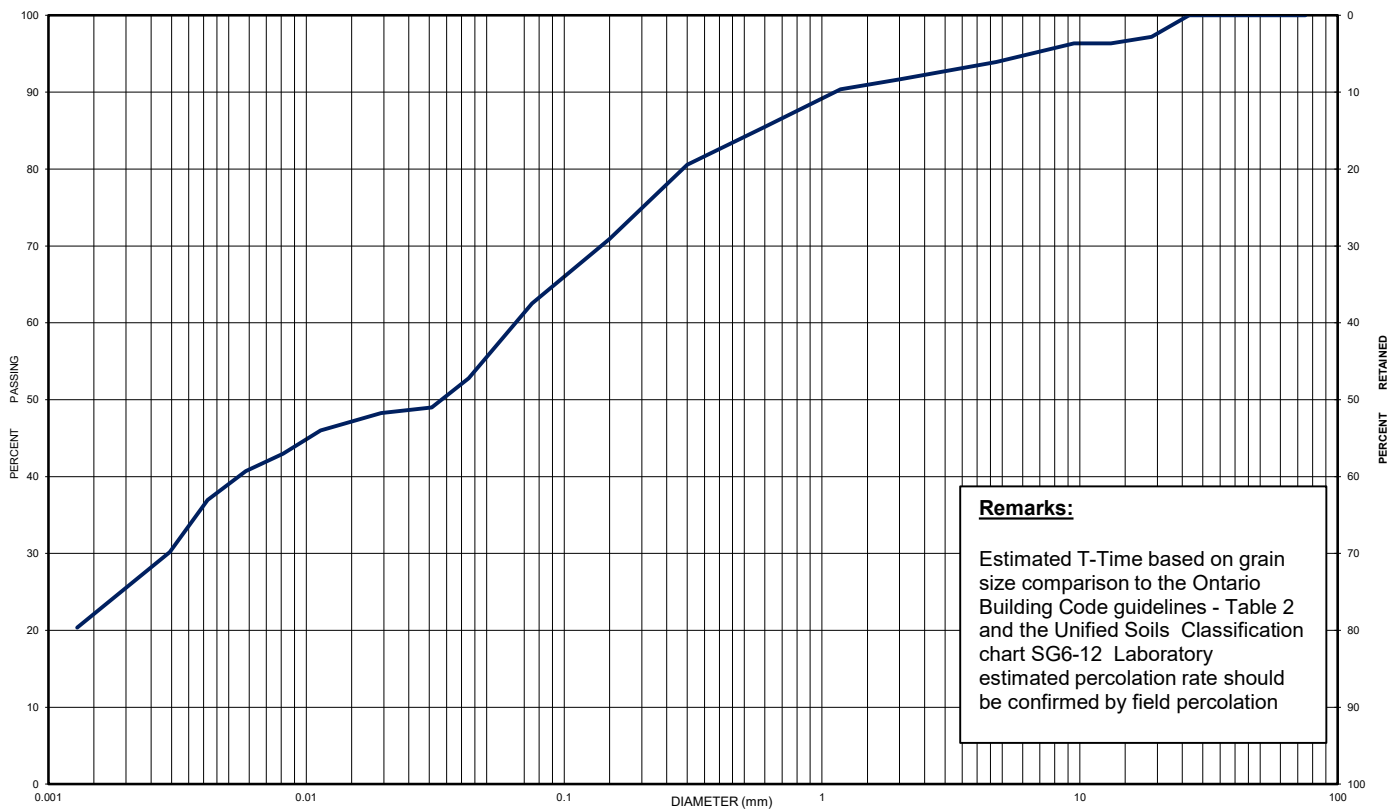
Date: May 27, 2025

GRAIN SIZE DISTRIBUTION CHART

Client: *Redstone Engineering*
 Project: *Ida Subdivision - Phase 2*
 Sampled By: *Garnet Brenchley*
 Sample No.: *BH-3 - SS-1*

Project No.: *25R103*
 Location: *Ida, Ontario*
 Date: *May 7, 2025*
 Depth: *2.5 - 4.5'*

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



CLAY	SILT	VERY FINE	FINE	MEDIUM	COARSE	FINE GRAVEL	GRAVEL
		SAND					
U.S. BUREAU OF SOILS CLASSIFICATION							

Sample No.	Description			Moisture (%)	Gravel	Sand	Silt	Clay	Class.
<i>BH-3 - SS-1</i>	<i>Sandy Clayey SILT trace of gravel</i>			<i>13.1</i>	<i>6</i>	<i>31</i>	<i>38</i>	<i>25</i>	<i>ML</i>
<i>D₆₀</i>	<i>D₃₀</i>	<i>D₁₀</i>	<i>C_u</i>	<i>C_c</i>	<i>Estimated Coefficient of Permeability</i>		<i>Estimated Percolation Time mins./cm.</i>		
<i>0.070</i>	<i>0.003</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>10⁻⁶</i>		<i>35 - 40 mins./cm</i>		

MECHANICAL ANALYSIS SHEET

Client: Redstone Engineering
 Project: Ida Subdivision - Phase 2
 Sampled By: Garnet Brenchley
 Sample No.: BH-5 - SS-1

Project No.: 25R103
 Location: Ida, Ontario
 Date: May 7, 2025
 Depth: 2.5 - 4.5'

SIEVE ANALYSIS OF RET. 4.75mm MATERIAL M2				COARSE MATERIAL						FIELD MOISTURE		HYGROSCOPIC MOISTURE
SIEVE SIZE (MM'S)	CUMULATIVE			MASS (TOTAL SAMPLE) (A) = M1			778.2			TARE NO.		210
	CUMULATIVE MASS (GMS.)	% RET M1	% PASS M1									
				RET 4.75 mm - DRY = M2			4.0			WET SOIL & TARE (GMS.)		46.49
75.0 mm	0.0	0.0	100.0									
63.0 mm	0.0	0.0	100.0	PASS 4.75 mm - DRY = M3			774.2			DRY SOIL & TARE (GMS.)		46.40
53.0 mm	0.0	0.0	100.0									
37.5 mm	0.0	0.0	100.0	MASS (TOTAL SAMPLE) (B) = M4						MOISTURE (GMS.)		
26.5 mm	0.0	0.0	100.0									
19.0 mm	0.0	0.0	100.0	RETAINED ON 2.00 mm - DRY = M5			10.7			DRY SOIL & TARE		
13.2 mm	0.0	0.0	100.0									
9.5 mm	0.0	0.0	100.0	PASSING 2.00 mm - DRY = M6			767.5			TARE (GMS.)		
4.75 mm	4.0	0.5	99.5									
Pan	7.5			% RET 4.75 = $\frac{M2 \times 100}{M1}$ = K			0.5			DRY SOIL (GMS.)		
SIEVE ANALYSIS OF HYDROMETER MATERIAL (M7)												
				% RET 2.00 = $\frac{M5 \times (100-K)}{M1}$ = L			1.4			% MOISTURE	13.1	0.9981
				DRY MASS (M7) - UNCOR.						69.08		
				DRY MASS (M7) - CORRECT						68.95		
SIEVES SIZES (MM'S)	CUMULATIVE MASS (GMS.)	CUMULATIVE		SPECIFIC GRAVITY		2.683	CORRECTION (A)		1.00	DRY MASS (M7) - CORRECT		68.95
		% RET M1	% PASS M1	TIME MIN.	TEMP C°	HYDROMETER READING			LEN (MM'S)	CORRECTED DIAMETER (MM)		% PASS OF M1 = (PAR)/M7
2.00 mm	10.7	1.4	98.6	1	23	34.0	7.0	27.0	12.1	0.04581	38.6	
1.18 mm	0.83	2.6	97.4	2	23	32.0	7.0	25.0	12.4	0.03279	35.8	
0.600 mm	3.96	7.0	93.0	5	23	26.5	7.0	19.5	13.3	0.02148	27.9	
0.300 mm	7.60	12.2	87.8	15	23	23.0	7.0	16.0	13.9	0.01268	22.9	
0.150 mm	13.69	21.0	79.0	30	23	21.0	7.0	14.0	14.2	0.00906	20.0	
0.075 mm	20.85	31.2	68.8	60	23	19.5	7.0	12.5	14.5	0.00647	17.9	
Pan	24.2			120	24	18.0	7.0	11.0	14.7	0.00455	15.7	
				250	24	16.0	7.5	8.5	15.1	0.00320	12.2	
				1440	23	14.0	7.0	7.0	15.4	0.00136	10.0	

Tested By: Wayne Rayfuse

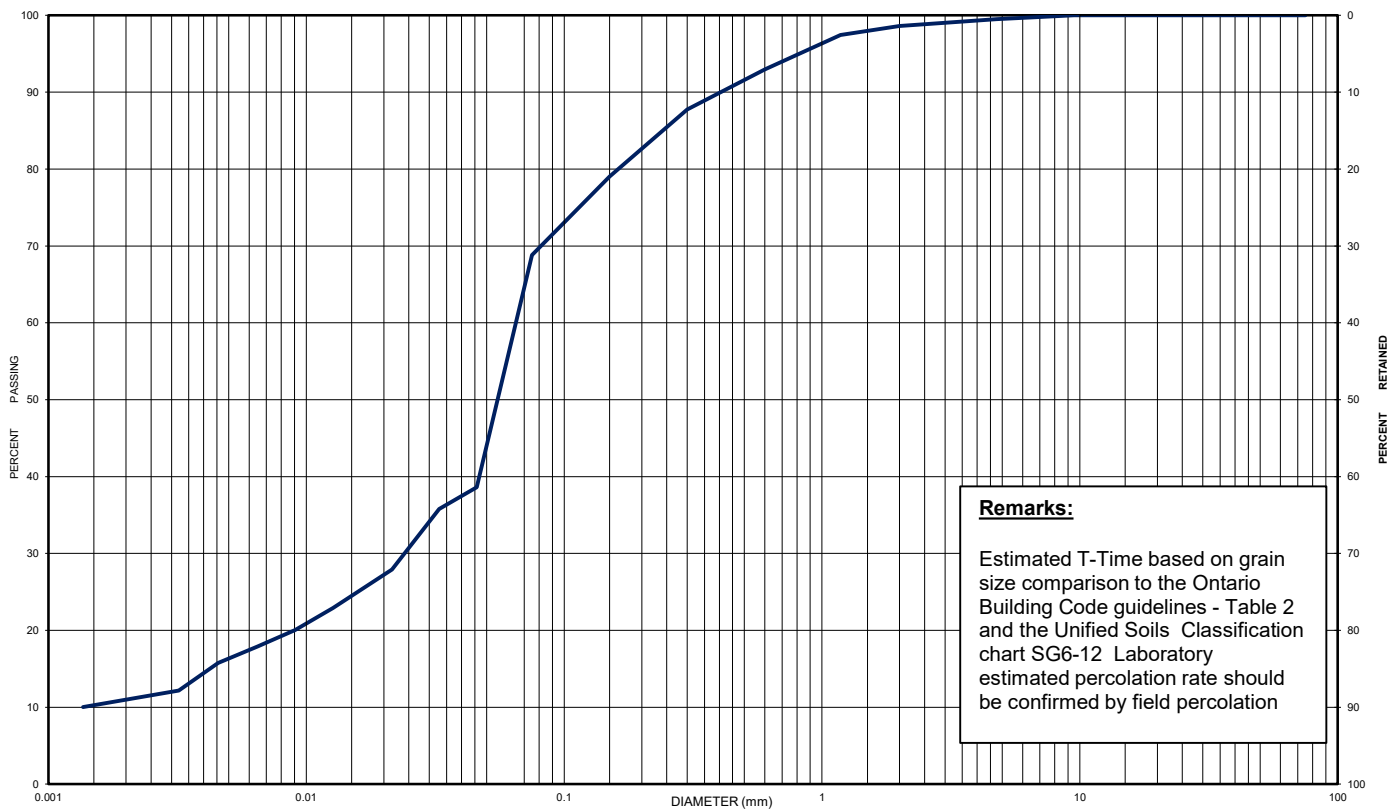
Date: May 27, 2025

GRAIN SIZE DISTRIBUTION CHART

Client: *Redstone Engineering*
 Project: *Ida Subdivision - Phase 2*
 Sampled By: *Garnet Brenchley*
 Sample No.: *BH-5 - SS-1*

Project No.: *25R103*
 Location: *Ida, Ontario*
 Date: *May 7, 2025*
 Depth: *2.5 - 4.5'*

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



CLAY	SILT	VERY FINE	FINE	MEDIUM	COARSE	FINE GRAVEL	GRAVEL
		SAND					

U.S. BUREAU OF SOILS CLASSIFICATION

Sample No.	Description			Moisture (%)	Gravel	Sand	Silt	Clay	Class.
<i>BH-5 - SS-1</i>	<i>Sandy SILT some clay</i>			<i>27.8</i>	<i>1</i>	<i>31</i>	<i>57</i>	<i>11</i>	<i>ML</i>
<i>D₆₀</i>	<i>D₃₀</i>	<i>D₁₀</i>	<i>C_u</i>	<i>C_c</i>	<i>Estimated Coefficient of Permeability</i>		<i>Estimated Percolation Time mins./cm.</i>		
<i>0.070</i>	<i>0.025</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>10⁻⁶</i>		<i>40 - 45 mins./cm</i>		

Appendix H

MECP Wells from 500m around Site

Water Well Records

September 9, 2025

9:47:44 PM

TOWNSHIP CON L	UTM	DATE CNT	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
CAVAN TOWNSHIP	17 701127 4899741 W	1911-11 1455						7443111 (Z390239) A328221 P	
CAVAN TOWNSHIP CON 09	17 702131 4898560 W	2018-10 7067	6.25	FR 0091	30/42/4/24:	DO	0092 4	7324388 (Z297018) A261543	BRWN LOAM 0002 BRWN CLAY STNS SOFT 0027 GREY CLAY GRVL HARD 0051 GREY CLAY STNS LYRD 0068 GREY CLAY GRVL HARD 0091 BRWN SAND CSND 0096
CAVAN TOWNSHIP CON 09 013	17 702133 4898552 W	2018-11 7067	6.25		///:	DO		7324383 (Z297016) A	---- 0065
CAVAN TOWNSHIP CON 09 013	17 701965 4898473 W	1984-07 4635	6	FR 0105	48/105/8/4:0	ST		5111170 ()	LOAM 0001 WHIT CLAY STNS 0047 BRWN SAND CLAY 0090 WHIT CLAY 0105 BRWN GRVL 0111
CAVAN TOWNSHIP CON 10 011	17 700753 4898850 L	1987-10 2104	6	UK 0192	123/170/4/3:0	DO		5112692 (23858)	BRWN LOAM SOFT 0002 GREY GRVL SAND HARD 0040 GREY CLAY MGVL MSND 0100 GREY CLAY MSND 0170 GREY CLAY MGRD 0180 GREY FSND 0192 GREY GRVL LOOS 0193
CAVAN TOWNSHIP CON 10 011	17 700753 4898850 L	1985-11 3367	6	FR 0133	93/117/8/1:45	DO	0133 4	5111541 ()	BRWN LOAM SOFT 0001 BRWN CLAY STNS PCKD 0030 GREY CLAY GRVL PCKD 0092 GREY CLAY DNSE 0132 BRWN CSND WBRG PCKD 0137
CAVAN TOWNSHIP CON 10 011	17 700753 4898850 L	1989-02 2104	6	FR 0193 FR 0205	160/200/6/5:0	ST	0197 4	5113724 (56843)	PRDG 0193 BRWN GRVL SNDY 0205
CAVAN TOWNSHIP CON 10 011	17 700753 4898850 L	1999-09 4635	6	FR 0197	197/216/10/2:0	DO	0220 8	5118339 (210003)	LOAM 0003 BRWN GRVL STNS 0012 BRWN SAND 0020 GREY CLAY GRVL 0120 GREY CLAY 0197 BRWN CSND 0215 BRWN CGVL SAND 0228
CAVAN TOWNSHIP CON 10 011	17 700968 4898509 W	1962-08 1904	6	FR 0060	45/45/10/3:0	DO		1900505 ()	PRDG 0046 MSND 0063 GRVL 0064
CAVAN TOWNSHIP CON 10 012	17 701365 4899623 W	1973-09 5207	36	FR 0018	15/40/6/2:0	DO		1903687 ()	BLCK LOAM CLAY 0001 BRWN CLAY STNS 0018 BLUE CLAY SAND STNS 0040
CAVAN TOWNSHIP CON 10 012	17 701312 4899049 L	1987-08 2104	6	UK 0160	30/150/5/2:0	DO	0159 4	5112556 (NA)	BRWN LOAM MGRD 0002 GREY CLAY MSND 0100 GREY MSND CLAY 0140 GREY MSND MGVL CLAY 0155 GREY FSND 0167
CAVAN TOWNSHIP CON 10 012	17 701312 4899049 L	1987-08 2104	6	UK 0140	117/147/5/3:30	DO	0149 4	5112555 (NA)	BRWN LOAM MGRD 0002 GREY CLAY MGRD 0030 GREY MSND 0130 GREY MSND MGVL CLAY 0140 GREY SAND GRVL LOOS 0157
CAVAN TOWNSHIP CON 10 012	17 701312 4899049 L	1987-08 2104	6	UK 0148	120/147/4/1:30	DO	0155 4	5112489 (12788)	BRWN LOAM MGRD 0001 GREY CLAY MGRD 0090 GREY MSND MGVL CLAY 0133 GREY SAND GRVL LOOS 0163
CAVAN TOWNSHIP CON 10 012	17 701312 4899049 L	1987-08 2104	6	UK 0130	110/122/4/2:0	DO		5112480 (12795)	BRWN LOAM MGRD 0002 GREY CLAY MSND 0100 GREY MSND MGVL CLAY 0130 GREY SAND GRVL LOOS 0138

TOWNSHIP CON L	UTM	DATE CNT	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
CAVAN TOWNSHIP CON 10 012	17 700955 4899663 W	1975-05 1904	6	FR 0190	165/170/10/16:0	DO		5108995 ()	LOAM 0001 GREY CLAY SAND 0035 GREY CLAY 0055 GREY CLAY SAND 0150 GREY CLAY SAND 0170 BLUE CLAY SAND 0180 GREY CLAY SAND 0190 BRWN SAND 0195
CAVAN TOWNSHIP CON 10 012	17 701365 4899583 W	1973-09 5207	36	FR 0020	15/41/5/2:0	DO		1903681 ()	BLCK LOAM CLAY 0001 BRWN CLAY STNS 0020 BLUE CLAY SAND STNS 0042
CAVAN TOWNSHIP CON 10 012	17 701155 4899743 W	1973-07 3129	30	FR 0018	17/29/7/1:0	DO		1903638 ()	LOAM 0001 HPAN STNS 0012 BLUE CLAY 0030
CAVAN TOWNSHIP CON 10 012	17 701215 4899763 W	1973-07 3129	30	FR 0021	17/32/7/1:0	DO		1903637 ()	LOAM 0001 GREY CLAY STNS 0012 BLUE CLAY STNS 0032
CAVAN TOWNSHIP CON 10 012	17 701175 4899753 W	1973-07 3129	30	FR 0009	7/24/8/1:0	DO		1903636 ()	LOAM 0001 HPAN STNS 0012 GREY CLAY STNS 0018 BLUE CLAY 0025
CAVAN TOWNSHIP CON 10 012	17 700915 4899473 W	1970-12 2104	6	FR 0202	178/201/10/2:30	DO	0202 4	1903046 ()	BRWN LOAM 0001 BRWN MSND 0034 BRWN GRVL MSND 0042 BRWN FSND 0094 BRWN CSND STNS 0101 GREY GRVL MSND 0133 BRWN MSND 0154 GREY CLAY MSND STNS 0180 BRWN MSND CSND STNS 0201 BRWN CSND 0206
CAVAN TOWNSHIP CON 10 012	17 701590 4899033 W	1968-10 1904	6	FR 0058	30/53/6/3:0	DO		1902535 ()	BRWN CLAY STNS 0022 GREY CLAY GRVL 0058
CAVAN TOWNSHIP CON 10 012	17 701135 4899443 W	1983-10 4635	6	FR 0195	87/192/4/4:0	ST	0194 7	5110970 ()	LOAM 0001 WHIT CLAY STNS 0038 BRWN FSND 0046 WHIT CLAY 0144 WHIT CLAY SAND 0176 WHIT CLAY SILT 0195 BRWN CGVL 0200
CAVAN TOWNSHIP CON 10 012	17 701264 4899626 W	2014-12 2662	6.25	FR 0192	98/104/10/1:	TH	0192 4	7236970 (Z195129) A170666	BLCK LOAM 0002 BRWN GRVL CLAY SNDY 0007 GREY SAND CLAY GRVL 0026 GREY CLAY SLTY 0135 GREY SAND SILT 0156 GREY SAND WBRG 0196
CAVAN TOWNSHIP CON 10 012	17 701240 4899462 W	2024-04 2662						7481354 (Z411656) A383076 P	
CAVAN TOWNSHIP CON 10 012	17 701436 4899443 W	2024-04 2662						7481518 (Z411655) A383075 P	
CAVAN TOWNSHIP CON 10 012	17 701312 4899049 L	1991-08 2104	6 5	FR 0119	0/110/6/4:0	DO		5115430 (108025)	BRWN SAND CLAY GRVL 0020 BRWN CGVL SAND WBRG 0025 GREY GRVL CLAY 0119 GREY SAND CGVL WBRG 0120 GREY LMSN ROCK 0125
CAVAN TOWNSHIP CON 10 012	17 701332 4899250 W	2023-11 7560	6.25	UT 0158	105/110/8/1:30	DO		7480924 (4PI6ERCH) A377810	BRWN CLAY SAND PCKD 0022 BRWN CLAY GRVL DNSE 0060 GREY GRVL CLAY DNSE 0063 BRWN MSND SOFT 0067 BRWN CLAY SAND PCKD 0078 GREY GRVL SAND CMTD 0126 BRWN FSND PCKD 0146 BRWN FSND WDFR LOOS 0157 GREY GRVL FSND LOOS 0158
CAVAN TOWNSHIP CON 10 012	17 701312 4899049 L	1991-11 4635	6	FR 0088	18/86/6/3:9			5115780 (111120)	PRDG 0018 BRWN GRVL STNS 0064 WHIT CLAY SILT 0088 BRWN CGVL 0094
CAVAN TOWNSHIP CON 10 012	17 701121 4899744 W	2022-09 1455						7430070 (Z390233) A328169 P	

TOWNSHIP CON L	UTM	DATE CNT	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION	
CAVAN TOWNSHIP CON 10 012	17 701312 4899049 L	1996-10 3367	6	FR 0155	80/142/6/3:0	DO	0151 4	5117330 (166461)	BRWN LOAM SOFT 0002 BRWN CLAY STNS PCKD 0030 GREY CLAY DNSE 0135 GREY CLAY SAND PCKD 0150 BRWN SAND LOOS 0155	
CAVAN TOWNSHIP CON 10 012	17 701309 4899050 L	2000-08 1455	6	FR 0075	/30/15/2:	DO		5118653 (205225)	BRWN LOAM 0001 BRWN CLAY 0014 GREY CLAY 0060 SAND GRVL 0075	
CAVAN TOWNSHIP CON 10 012	17 701312 4899049 L	1988-07 4635	6	FR 0191	100/188/5/3:0	DO	0181 9	5113630 (NA)	LOAM 0001 WHIT GRVL CLAY 0022 GREY CLAY 0120 BLUE CLAY FGVL 0140 BRWN CLAY SILT SAND 0185 BRWN CSND 0191	
CAVAN TOWNSHIP CON 10 012	17 701065 4899593 W	2018-05 4635	6	UT 0143	124/126/7/1:0	DO		7326771 (Z243489) A213380	BRWN LOAM 0001 BRWN CLAY STNS 0017 GREY CLAY STNS 0105 BRWN SAND CLAY STNS 0110 GREY CLAY STNS 0141 GRVL PCKD 0143	
CAVAN TOWNSHIP CON 10 012	17 701312 4899049 L	1988-09 3129	30	FR 0020	18/26/8/1:0	DO		5113277 (30759)	LOAM 0001 BRWN CLAY STNS 0025 BLUE CLAY 0050	
CAVAN TOWNSHIP CON 10 012	17 701100 4899445 W	2014-12 2662	6.25	FR 0212	120/131/20/1:	TH	0212 4	7236971 (Z195128) A170665	BLCK LOAM STNS 0002 BRWN GRVL CLAY SNDY 0006 GREY CLAY BLDR SNDY 0013 BRWN SAND CLAY GRVL 0030 GREY CLAY GRVL 0036 BRWN CLAY SNDY 0042 GREY CLAY SILT 0070 GREY CLAY GRVL 0148 GREY SAND GRVL WBRG 0216	
CAVAN TOWNSHIP CON 10 012	17 701393 4899474 W	2014-12 2662	6.25	FR 0232 FR 0236	110/113/10/1:	TH	0232 4	7236972 (Z195130) A170664	BLCK LOAM 0002 BRWN CLAY SNDY 0011 GREY SAND GRVL BLDR 0020 GREY CLAY GRVL BLDR 0050 GREY CLAY SNDY 0073 GREY SILT CLAY 0165 GREY SAND FSND 0191 BRWN SAND FSND 0196 GREY SAND MSND 0236	
CAVAN TOWNSHIP CON 10 013	17 702007 4898615 W	2016-12 4635	6 6	UT 0175	63/104/3/5:30	DO	0167 13	7282620 (Z243510) A213354	BRWN GRVL STNS 0023 GREY GRVL STNS 0115 WHIT GRVL CLAY 0171 GREY SHLE SAND SILT 0175 GREY LMSN 0180	
CAVAN TOWNSHIP CON 10 013	17 701415 4899773 W	1978-12 4867	36	FR 0023	10/26/3/1:0	DO		5109255 ()	BLCK LOAM SOFT 0001 BRWN CLAY STNS HARD 0020 BLUE CLAY SAND 0023 BLUE CLAY SAND 0028	
CAVAN TOWNSHIP CON 10 013	17 701866 4899259 L	1996-04 4635	6	FR 0072	25/67/4/3:0	DO		5117253 (168391)	LOAM 0001 BRWN CLAY SAND GRVL 0015 WHIT GRVL CLAY 0070 BRWN GRVL 0072	
CAVAN TOWNSHIP CON 10 013	17 701866 4899259 L	1991-10 6023	36	FR 0014	10/0/3/0:35	DO	0012	5115525 (41753)	BRWN CLAY PCKD 0016 BLUE CLAY PCKD 0023	
CAVAN TOWNSHIP CON 10 013	17 701866 4899259 L	1988-05 3129	30	FR 0030	17/25/8/1:0	DO		5113078 (30624)	LOAM 0001 BRWN CLAY 0014 BLUE CLAY 0030 SAND SLTY CLAY 0033 HPAN STNS 0045	
CAVAN TOWNSHIP CON 11 012	17 701076 4899810 W	2018-01 1455	6.25	0180	114/155/5/1:	DO	0182 3	7309805 (Z266043) A239730	BRWN CLAY STNS 0060 GREY CLAY BLDR 0080 GREY CLAY SAND 0180 BRWN SAND 0185	
CAVAN TOWNSHIP CON 11 012	17 700815 4899643 W	1981-08 4635	6	FR 0189	150/151/10/4:0	DO	0184 9	5110517 ()	BRWN CLAY SAND 0024 BRWN FSND 0171 BRWN MSND 0189 BRWN FSND 0193	

Notes:
UTM: UTM in Zone, Easting, Northing and Datum is NAD83; L: UTM estimated from Centroid of Lot; W: UTM not from Lot Centroid
DATE CNTR: Date Work Completedand Well Contractor Licence Number
CASING DIA: .Casing diameter in inches
WATER: Unit of Depth in Fee. See Table 4 for Meaning of Code

PUMP TEST: Static Water Level in Feet / Water Level After Pumping in Feet / Pump Test Rate in GPM / Pump Test Duration in Hour : Minutes
WELL USE: See Table 3 for Meaning of Code
SCREEN: Screen Depth and Length in feet
WELL: WEL (AUDIT #) Well Tag . A: Abandonment; P: Partial Data Entry Only

1. Core Material and Descriptive te

Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
BLDR	BOULDERS	FCRD	FRACTURED	IRFM	IRON FORMATION	PORS	POROUS	SOFT	SOFT
BSLT	BASALT	FGRD	FINE-GRAINED	LIMY	LIMY	PRDG	PREVIOUSLY DUG	SPST	SOAPSTONE
CGRD	COARSE-GRAINED	FGVL	FINE GRAVEL	LMSN	LIMESTONE	PRDR	PREV. DRILLED	STKY	STICKY
CGVL	COARSE GRAVEL	FILL	FILL	LOAM	TOPSOIL	QRTZ	QUARTZITE	STNS	STONES
CHRT	CHERT	FLDS	FELDSPAR	LOOS	LOOSE	QSND	QUICKSAND	STNY	STONEY
CLAY	CLAY	FLNT	FLINT	LTCL	LIGHT-COLOURED	QTZ	QUARTZ	THIK	THICK
CLN	CLEAN	FOSS	FOSILIFEROUS	LYRD	LAYERED	ROCK	ROCK	THIN	THIN
CLYY	CLAYEY	FSND	FINE SAND	MARL	MARL	SAND	SAND	TILL	TILL
CMTD	CEMENTED	GNIS	GNEISS	MGRD	MEDIUM-GRAINED	SHLE	SHALE	UNKN	UNKNOWN TYPE
CONG	CONGLOMERATE	GRNT	GRANITE	MGVL	MEDIUM GRAVEL	SHLY	SHALY	VERY	VERY
CRYS	CRYSTALLINE	GRSN	GREENSTONE	MRBL	MARBLE	SHRP	SHARP	WBRG	WATER-BEARING
CSND	COARSE SAND	GRVL	GRAVEL	MSND	MEDIUM SAND	SHST	SCHIST	WDFR	WOOD FRAGMENTS
DKCL	DARK-COLOURED	GRWK	GREYWACKE	MUCK	MUCK	SILT	SILT	WTHD	WEATHERED
DLMT	DOLOMITE	GVLY	GRAVELLY	OBDN	OVERBURDEN	SLTE	SLATE		
DNSE	DENSE	GYPS	GYPSUM	PCKD	PACKED	SLTY	SILTY		
DRTY	DIRTY	HARD	HARD	PEAT	PEAT	SNDS	SANDSTONE		
DRY	DRY	HPAN	HARDPAN	PGVL	PEA GRAVEL	SNDY	SANDYOAPSTONE		

2. Core Color

Code	Description
WHIT	WHITE
GREY	GREY
BLUE	BLUE
GREN	GREEN
YLLW	YELLOW
BRWN	BROWN
RED	RED
BLCK	BLACK
BLGY	BLUE-GREY

3. Well Use

Code	Description	Code	Description
DO	Domestic	OT	Other
ST	Livestock	TH	Test Hole
IR	Irrigation	DE	Dewatering
IN	Industrial	MO	Monitoring
CO	Commercial	MT	Monitoring TestHole
MN	Municipal		
PS	Public		
AC	Cooling And A/C		
NU	Not Used		

4. Water Detail

Code	Description	Code	Description
FR	Fresh	GS	Gas
SA	Salty	IR	Iron
SU	Sulphur		
MN	Mineral		
UK	Unknown		