Preliminary Hydrogeological Investigation

12612 and 12586 Woodbine

12612 Woodbine (KD) Corporation

95 Royal Crest Ct, Unit 21-22, Markham, ON L3R 9X5

Prepared by:

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Revision Record

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A	June 5, 2026	Cole Thompson	Jason Cole	Jason Cole
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1.0 Introduction

SLR was retained by 12612 Woodbine (KD) Corporation (the Client) to complete a Preliminary Hydrogeological Investigation for the property at 12612 & 12856 Woodbine Avenue in Gormley, Ontario (the "site" or "subject property"). The subject property is traversed by Berczy Creek and development is planned on both the east and the west sides of the feature (**Figure 1**). It is understood that the proposed development includes a cemetery, mausoleum, banquet hall, one bridge crossing of Berczy Creek, reception area and crematorium, parking lot, and underground parking areas. The Concept Plan is provided on the Site Survey in **Appendix A**.

This hydrogeological investigation focuses on characterizing the hydrogeological conditions of the site to support engineering design and permitting with the Toronto and Region Conservation Authority (TRCA) and the Township of Whitchurch-Stouffville. A site-wide water balance was completed to determine the change in groundwater infiltration pre-to-post development and to provide strategies and design information for the use of Low Impact Development (LID) facilities, should they be required.

The site will be serviced by a potable water well and an individual septic system. It is understood that the water use will be far below 50,000 L/day and the septic system will be less than 10,000 L/day.

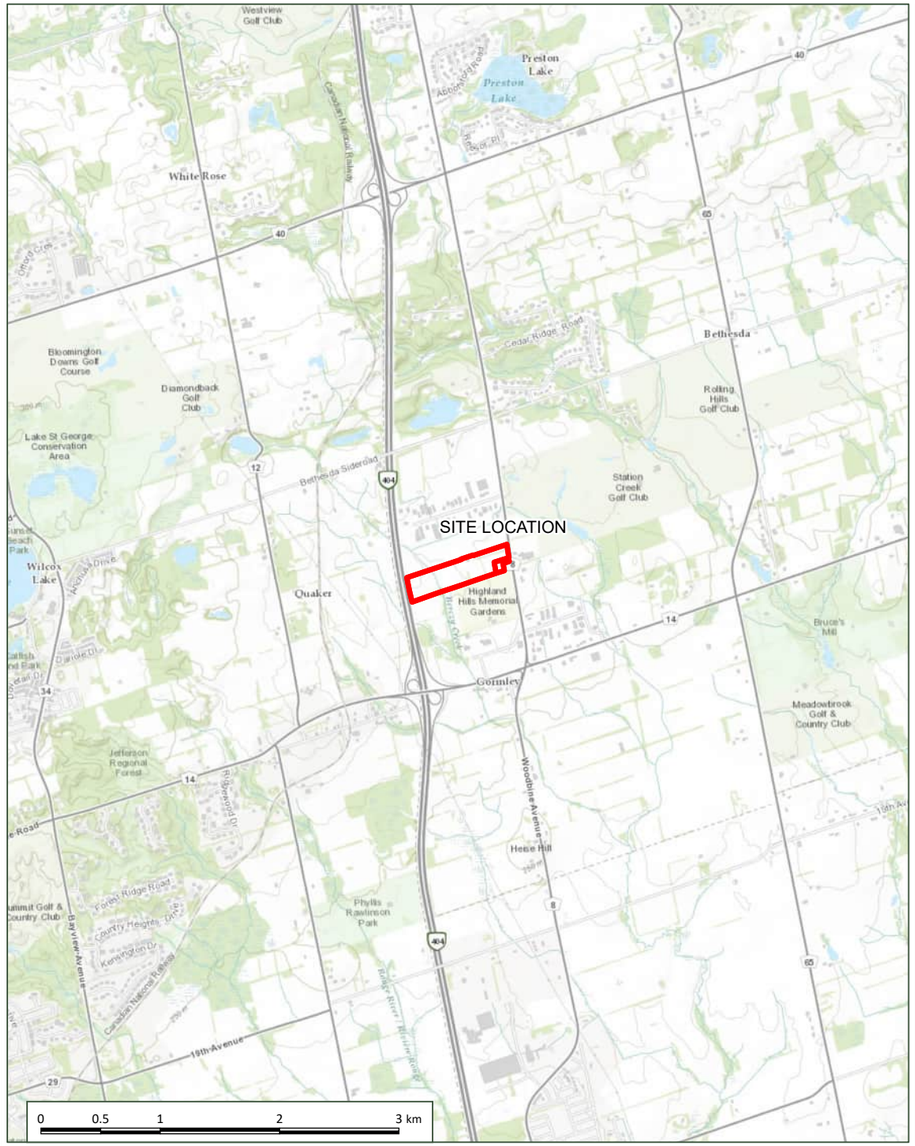
In addition to the hydrogeological field investigations and site reconnaissance conducted by SLR, information from the following sources was reviewed as part of the study:

- Preliminary Geotechnical Report and borehole logs (SLR, 2026);
- Ecological constraints mapping (SLR, 2026);
- Available geology, hydrogeology, and physiography mapping (e.g., Ontario Geological Survey (OGS) Surficial and Palaeozoic Geology Mapping); and,
- Ministry of Environment, Conservation and Parks (MECP) water well records.

1.1 Scope of Work

The objectives for SLR's Hydrogeological Study include the following:

- Complete a background review of applicable hydrogeological data including watershed plans, MECP Water Well Records (WWRs), surficial and bedrock geology mapping;
- In conjunction with the Geotechnical Assessment, conduct a borehole drilling program to advance six boreholes at the site and instrument four (4) with monitoring wells;
- Complete well development and single well response testing (i.e., slug tests) at all new monitoring wells to determine the hydraulic conductivity at the monitoring well locations;
- Install a Solinst Levelogger in a monitoring well to obtain continuous water level monitoring data over a period of 1-year;
- Collect 2 rounds of manual groundwater level measurements in spring/summer 2026 to characterize shallow groundwater elevations across the site;
- Collect and submit one (1) groundwater sample to a CALA-accredited laboratory to be analyzed for general water quality parameters and compared to the Ontario Drinking Water Standards, Objectives and Guidelines (ODWSOG, 2006) and the Ontario Drinking Water Quality Standards (ODWSQ, 2020);
- Calculate the pre- to post-development water balance for the site;



Notes:

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LEGEND:

- SUBJECT SITE
- BOREHOLE
- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- WATERCOURSE
- PROVINCIALLY SIGNIFICANT WETLAND (MNR)
- UNEVALUATED WETLAND (MNR)
- WATERBODY

0 100 200 400 600 m

SCALE 1:10,000
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N

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REX CHENG
KINGSDALE DEVELOPMENT
95 ROYAL CREST CT, UNIT 21-22
MARKHAM, ON L3R 9X5

HYDROGEOLOGICAL ASSESSMENT
12612 AND 12586 WOODBINE AVENUE
STOUFFVILLE, ON

SITE LOCATION

SLR

FIGURE NO:
1

DATE: June 8, 2026

PROJECT NO: 243.024905.00002

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GIS PATH: G:_Projects\243\243_024905_12612WoodbineAve\1_Workspace\1_Maps\202606_HydroG\243_024905_HydroG.aprx || 243_024905_HG_01_SiteLoc_RevB

- Provide a discussion on the suitability of the site for a potable water well and septic servicing;
- Complete a preliminary conceptual dewatering assessment; and
- Prepare a Hydrogeological Assessment report summarizing the findings, and recommendations for design and permitting requirements of the project.

2.0 Hydrogeological Conditions

2.1 Regional Conditions

2.1.1 Physiography

The site is located within the south slope physiographic region (Chapman & Putnam, 1984). The south slope is characterized as a southwards sloping till plain (**Figure 2**). Located nearby, the Oak Ridges Moraine is considered a regionally significant geological landform due to its large capacity for groundwater recharge and discharge. It is characterized by coarse grained sand and gravel deposits, with areas of clay loam and silt. Geological landforms within this region vary between unstratified drift deposits (till moraines) and ice-contact stratified drift (kame moraines).

2.1.2 Overburden Geology

The stratigraphic units within the study area, in order of most recently deposited, are described in more detail below. These descriptions are largely based on the work by Kassenaar and Wexler (2006) and are presented in the York Region Tier 3 Water Budget and Water Quantity Assessment (Earthfx, 2013). Based on Ontario Geological Survey (OGS) surficial geology mapping, the site is underlain by clayey silt till of the Halton Till deposit (**Figure 3**).

The Halton Till represents the latest glacial ice advance of the Lake Ontario ice lobe approximately 13,000 years ago (Eyles, 2002). It is an extensive diamicton with varying texture ranging from sandy silt till to silty clay till interbedded with silt, clay, sand and gravel (Earthfx, 2013). In areas where ice has overridden glaciolacustrine deposits, the till tends to be more clay rich. The thickness of the unit is typically between 10 to 20 m; however, it can reach up to 40 m. Locally, its thickness is estimated at 25 – 30 m (OGSEarth, 2021). On a local scale, granular seams within the Halton Till may provide sufficient water supply for some private wells; however, regionally this unit acts as a confining aquitard, and plays a significant role in inhibiting groundwater recharge to the Oak Ridges Moraine Aquifer Complex (ORMAC) (Earthfx, 2013).

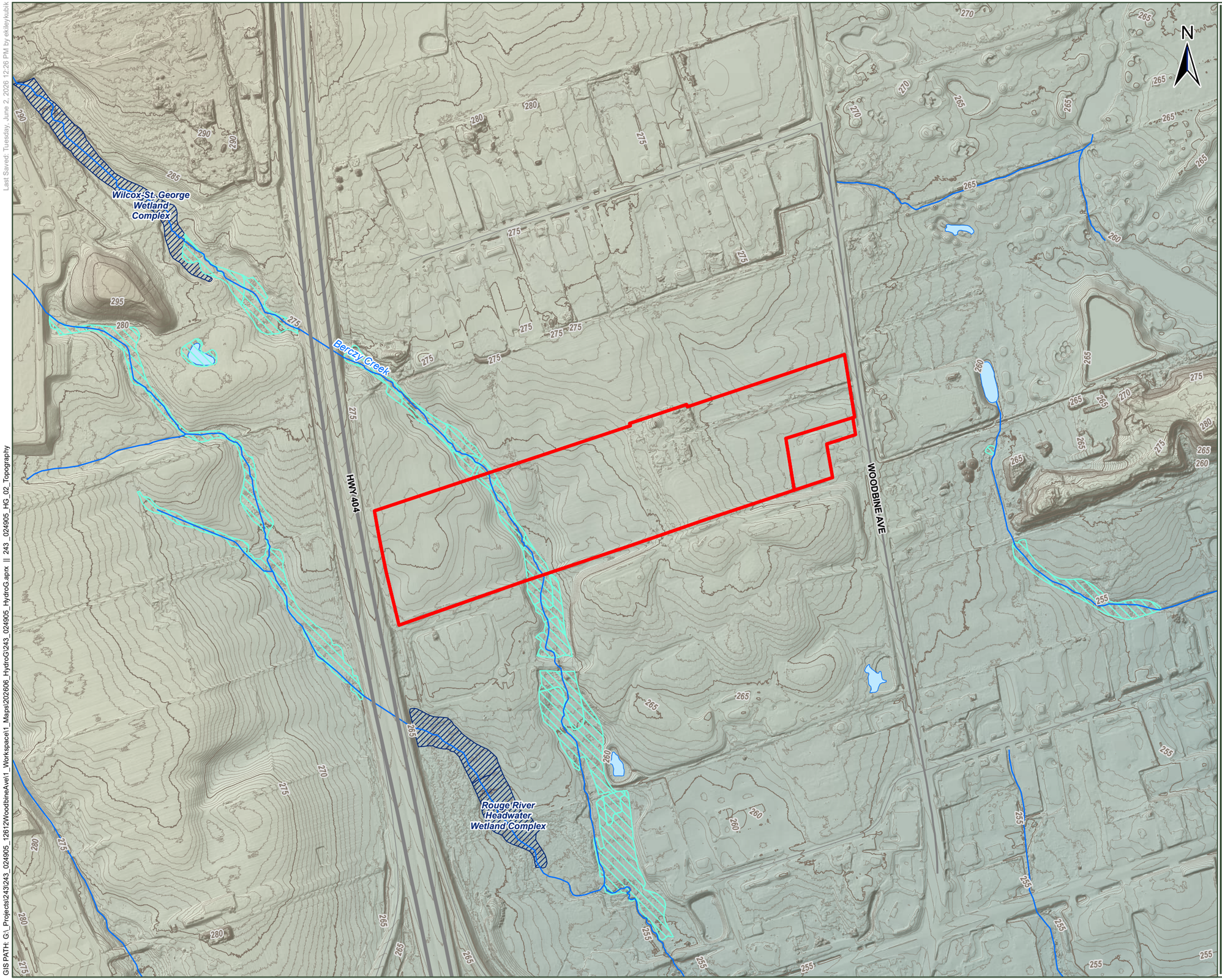
The Oak Ridges Moraine Aquifer Complex (ORMAC) is a 160 km long ridge of coarse sediments that form the height of land separating the Lake Simcoe / Lake Huron watershed from the Lake Ontario Watershed. The Oak Ridges Moraine Aquifer Complex (ORMAC) deposits formed approximately 13,300 years ago (Eyles, 2002). The moraine was developed through rapid sedimentation in subglacial, ice-marginal, and proglacial environments formed between the Lake Ontario basin glacial ice and northern ice (Barnett et al., 1999). It is generally discontinuous and is comprised of several smaller landforms. During the brief ice-free interval following its deposition, coarse sand and gravel, minor silt and till sediments of the Oak Ridges Moraine (ORM) were dispersed by rivers flowing on the ice front. These interstadial deposits are typically less than 5 m in thickness; however, they can be up to 95 m thick beneath the crest of the moraine thinning rapidly towards its margins. They form a widespread, discontinuous layer

that extends beyond the boundary of the ORM and is typically found between the Halton and Newmarket Till units.

At surface, the ORMAC terrain exhibits a hummocky, knob and basin relief with hills composed of sand and gravel. Due to the high permeability, the ORMAC acts as a significant regional aquifer, and provides significant recharge to underlying aquifers (Earthfx, 2013). Late stage, high energy subglacial meltwater flood events during the Late Wisconsin approximately 13,500 years ago resulted in the incision of major tunnel valleys and channels within the underlying sediment (Barnett et al., 1998; Earthfx, 2013). As the meltwater energy declined, they were subsequently filled with a fining-upward sequence of alluvium deposits of boulders, cobbles, gravels, sands and silts (Sharpe et al., 1999). The channels at surface are 1 to 4 km wide and tens of meters deeps, and beneath the ORM tend to be narrower at 1 to 2 km wide and are still tens of meters deep (Pugin et al., 1999). These deposits are significant hydrogeological features as the permeable deposits can provide spatially discrete high yield aquifers up to several meters thick and can increase connectivity between regional aquifers.

The Newmarket Till was deposited, initially into standing water, by a Late Wisconsinan advance of the Laurentide Ice Sheet. It is laterally extensive within the Greater Toronto Area. The Newmarket Till has a distinct and consistent lithology (Sharpe, Barnett, Russel, Brennand, & Gorrell, 1999). Locally, the thickness of the till can exceed 100 m; however, it is typically between approximately 20 – 30 m thick (Earthfx, 2013). Locally, it is estimated to range from approximately 50 to 70 m in thickness (OGSEarth, 2021). This till is reported to include thin interbeds of sands and silts, boulder pavements, fractures, and joints, as well as discontinuous sand seams on the order of 1 to 2 m in thickness. Infrequently, the till may also contain rhythmites or isolated clay laminations.

The Thorncliffe Formation consists of glaciofluvial deposits of sand and silty sand, and glaciolacustrine deposits of silt, sand and pebbly silt and clay that extend under most of York Region (Earthfx, 2013). This unit was deposited by glacial meltwater entering a deep ice-dammed ancestral Lake Ontario approximately 45,000 years ago (Barnett, 1992). The formation is noted for its considerable variation in the type of sediments, both locally and regionally, as it can often experience significant changes in facies over short distances (Sharpe et al., 2002). The lower part of the formation is often identified by silt-clay rhythmites (varves).



LEGEND:

- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- TOPOGRAPHIC CONTOUR (5 M INTERVAL)
- TOPOGRAPHIC CONTOUR (50 CM INTERVAL)
- WATERCOURSE
- PROVINCIALLY SIGNIFICANT WETLAND (MNR)
- UNEVALUATED WETLAND (MNR)
- WATERBODY

GROUND SURFACE ELEVATION (M AMSL)

344.54
314.29
283.8
253.3
222.57

NOTES:

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REX CHENG
KINGSDALE DEVELOPMENT
95 ROYAL CREST CT, UNIT 21-22
MARKHAM, ON L3R 9X5

HYDROGEOLOGICAL ASSESSMENT
12612 AND 12586 WOODBINE AVENUE
STOUFFVILLE, ON

TOPOGRAPHY AND SURFACE WATER FEATURES

SLR

FIGURE NO:
2

DATE: June 2, 2026

PROJECT NO: 243.024905.00002

LEGEND:

- RAILWAY
- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- WATERCOURSE
- PROVINCIALLY SIGNIFICANT WETLAND (MNR)
- UNEVALUATED WETLAND (MNR)
- WATERBODY

PHANEROZOIC / CENOZOIC / QUATERNARY / PLEISTOCENE

- 8A: FINE-TEXTURED GLACIOLACUSTRINE DEPOSITS *(MASSIVE-WELL LAMINATED)*
- 5B: TILL *(STONE-POOR, SANDY SILT TO SILTY SAND-TEXTURED TILL ON PALEOZOIC TERRAIN)* (PORT STANLEY TILL)
- 5D: TILL *(CLAY TO SILT-TEXTURED TILL [DERIVED FROM GLACIOLACUSTRINE DEPOSITS OR SHALE])* (MARYHILL TILL)

NOTES:

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MARKHAM, ON L3R 9X5

HYDROGEOLOGICAL ASSESSMENT
12612 AND 12586 WOODBINE AVENUE
STOUFFVILLE, ON

SURFICIAL GEOLOGY

SLR

FIGURE NO:
3

DATE: June 2, 2026

PROJECT NO: 243.024905.00002

2.1.3 Hydrogeology

Hydrostratigraphic units can be subdivided into two distinct groups based on their ability to allow groundwater movement: an aquifer and an aquitard. An aquifer is defined as a layer of soil that is permeable enough to permit a usable supply of water to be extracted. An aquitard is a layer of soil that inhibits groundwater movement due to its low permeability. The major regional hydrostratigraphic units that controls groundwater at the site is described below:

Fine-Textured Glaciolacustrine deposits of silty clay to clayey silt are expected to be present at surface across the site. This unit was deposited along the margins of the drumlin present along the western portion of the site, and is therefore expected to be thin (i.e., <1 m in thickness) and may include re-worked till deposits.

The **Newmarket Till** forms a major regional aquitard within the study area, given its low hydraulic conductivity (10^{-11} to 10^{-6} m/s, Sharp *et al*., 1996) and consistent presence throughout the region. Where Newmarket Till is exposed at the surface, the water table is commonly high within the till because of the poorly drained till soils. In such areas, a well-developed surface drainage network can often be identified. Water flow within the dense till unit is typically in a downwards direction (Sharpe *et al.*, 1996).

The ***Oak Ridges Moraine Aquifer Complex*** (ORMAC) consists of sand and gravel and forms a major regional aquifer within the study area. Generally, groundwater flow through these soils is predominantly horizontal, supporting groundwater discharge where the unit occurs at surface. Based on available MECP Water Well Records, this unit is encountered at a depth ranging from 25 to 30 m. This aquifer is confined by the Halton Till Aquitard above and the Newmarket Till Aquitard below.

The ***Newmarket Till Aquitard*** is a dense, over-consolidated unit of sandy silt to silty sand textured till unit. It contains locally significant sandy and silty interbeds and stone lines which result in spatially variable hydraulic conductivities. In general, this unit forms a major regional aquitard within the site area and effectively acts to limit groundwater recharge to deeper confined units and reduces the exposure of underlying aquifers to contamination (Sharpe, Barnett, Russel, Brennand, & Gorrell, 1999). ORMGP mapping reports the till as being up to 56 m thick with an upper contact approximately 17 m below grade in the vicinity of the site.

The ***Thorncliffe Aquifer Complex*** forms a major, high-yielding aquifer; the domestic well located on the study site is screened within the Thorncliffe Aquifer complex. This aquifer complex is composed of a thick sequence (up to 55 m; 37 m locally) of glaciolacustrine silt, sand and fluvial gravels with an upper boundary approximately 70 mbgs according to ORMGP mapping. This aquifer complex is the primary source of groundwater for wells south of the Oak Ridges Moraine. The aquifer has a wide range of hydraulic conductivity values (10^{-8} to 10^{-4} m/s) due to variation in the sediments. Well yields are, therefore, variable but are generally adequate for the requirements of domestic wells (Meriano, 1999).

2.1.4 Environmental Features and Drainage

The site is located within Rouge River Watershed which is located on the eastern side of the Central Lake Ontario Conservation's jurisdiction. The drainage area of the watershed is approximately 339 km^2 and is located within the eastern portion of Toronto and Region Conservation Authority's (TRCA) jurisdiction. Locally, the site is located within the Berczy/Bruce Creek Subwatershed. The site is bisected on the western portion by Berczy Creek, which flows north to south through the site. (**Figure 1**).

2.1.5 Source Water Protection

Source Water Protection mapping for the subject property was reviewed using mapping developed by the Toronto and Region Conservation Authority (TRCA) and the CTC Source Protection Region (**Figure 4**). The review indicates that the subject site is **not** located within a Wellhead Protection Area (WHPA), Wellhead Protection Area – Quantity (WHPA-Q), Intake Protection Zone (IPZ), or a Highly Vulnerable Aquifer (HVA).

Several Highly Vulnerable Aquifer areas and provincially significant wetland complexes, including portions of the Rouge River Headwater Wetland Complex and Wilcox–St. George Wetland Complex, occur within the surrounding area but are hydraulically and geographically separated from the proposed development by the intervening low-permeability Halton Till deposits and the existing drainage network. Berzy Creek traverses the western portion of the property before flowing south toward the Rouge River watershed.

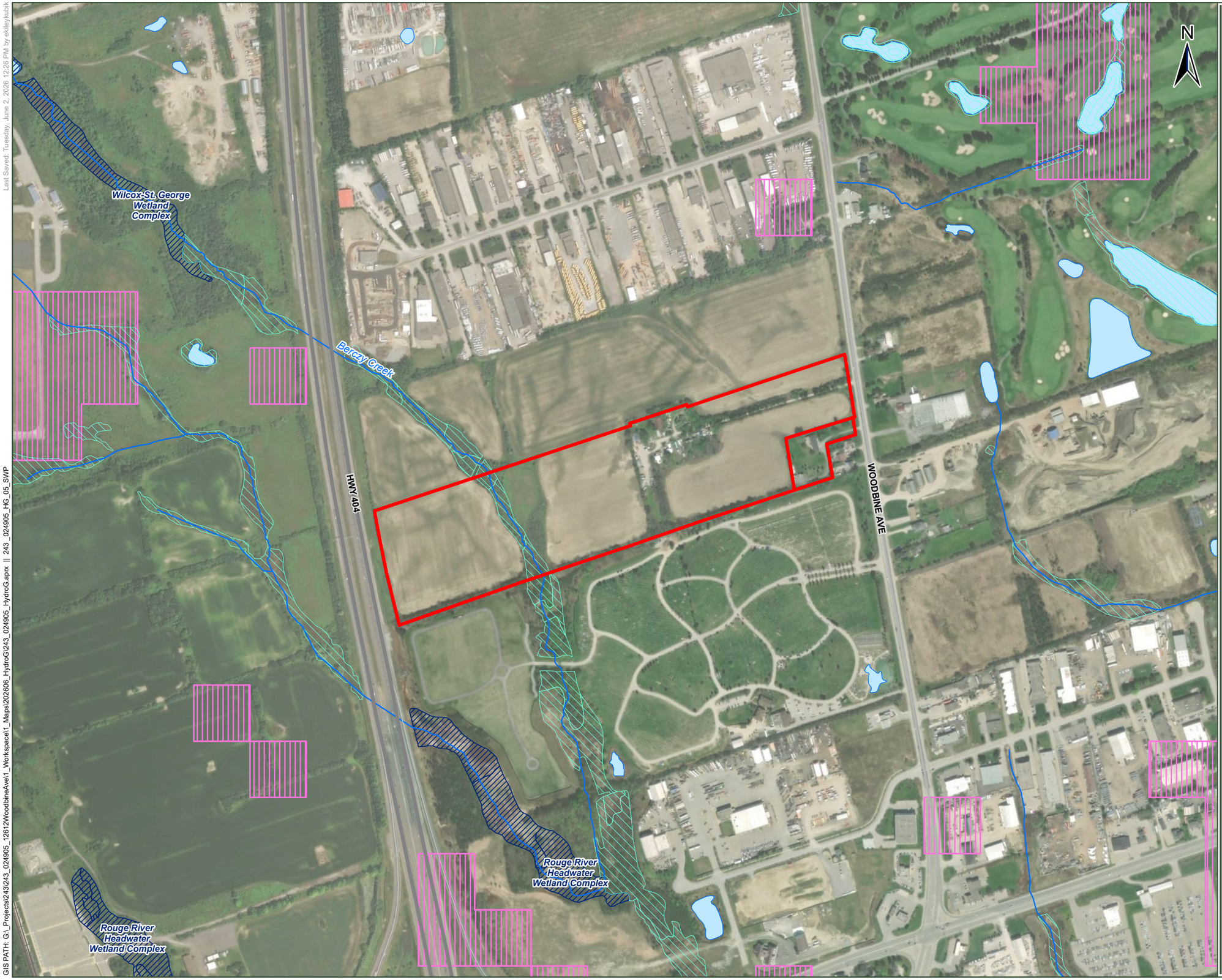
Because the site is not located within a vulnerable drinking water area identified under the *Clean Water Act*, Source Water Protection policies are not expected to impose significant constraints on the proposed cemetery development. Nevertheless, the proposed development should incorporate appropriate stormwater management, Low Impact Development (LID) measures where feasible, and water balance mitigation to maintain existing groundwater recharge characteristics and protect adjacent natural heritage features, consistent with the recommendations presented in this report.

2.2 MECP Well Records and Potable Water Supply

Based on the MECP Water Well Records (**Figure 5**), 62 water supply wells were identified within the 500 m study area, including 26 domestic, 19 industrial, 12 commercial, four livestock, and one public supply well. The total number of wells is 127, but this includes monitoring wells. A summary table is provided in **Appendix B**.

Potable water well depths range from 4.6 to 71.9 m below ground surface, with a median completed depth of approximately 32 m. Domestic wells are generally shallower (median depth approximately 26 m), whereas industrial wells tend to be deeper (median depth approximately 54 m). Reported pumping rates are available for 57 of the water supply wells and range from 9 to 455 L/min, with a median reported yield of approximately 55 L/min. Domestic well yields are typically in the range of 9 to 182 L/min (median approximately 45 L/min), while industrial and commercial wells generally report higher pumping rates, reflecting their greater water demand rather than differences in aquifer productivity.

Overall, the well records indicate that the area is capable of supporting a range of groundwater supply requirements, with most water supply wells completed within the overburden aquifer system (ORMAC and Thorncliffe Aquifer) and producing yields that are typical for the regional hydrogeological setting. It is expected that the more shallow domestic wells are targeting the ORMAC and the deeper industrial wells are targeting the Thorncliffe Aquifer. Both these aquifers are present below the site and are suitable targets for an on-site potable water well(s) that would be expected to have sufficient yields to support the proposed land use. Addition test well drilling would be required at later design stages to confirm well yields and water quality at specific building locations.



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LEGEND:

- SUBJECT SITE
- RAILWAY
- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- WATERCOURSE
- WATERBODY
- HIGHLY VULNERABLE AQUIFER

INTAKE PROTECTION ZONE

- IPZ-1
- IPZ-2
- IPZ-3

NOTES:

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MARKHAM, ON L3R 9X5

HYDROGEOLOGICAL ASSESSMENT
12612 AND 12586 WOODBINE AVENUE
STOUFFVILLE, ON

SOURCE WATER PROTECTION

SLR

FIGURE NO:
4

DATE: June 2, 2026

PROJECT NO: 243.024905.00002

LEGEND:

- PROJECT ALIGNMENT
- 500 M BUFFER OF SITE
- RAILWAY
- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- WATERCOURSE
- PROVINCIALLY SIGNIFICANT WETLAND (MNR)
- UNEVALUATED WETLAND (MNR)
- WATERBODY

WATER WELL LOCATION (MECP) - WELL USE

- COMMERICAL
- DOMESTIC
- INDUSTRIAL
- LIVESTOCK
- MONITORING/TEST HOLE
- NOT USED
- PUBLIC
- OTHER/UNKNOWN

NOTES:

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MARKHAM, ON L3R 9X5

HYDROGEOLOGICAL ASSESSMENT
12612 AND 12586 WOODBINE AVENUE
STOUFFVILLE, ON

MECP WATER WELL RECORDS

SLR

FIGURE NO:
5

DATE: June 2, 2026

PROJECT NO: 243.024905.00002

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2.3 Site Specific Conditions

2.3.1 Borehole Drilling and Monitoring Well Installation

On May 22, 2026, SLR personnel conducted a borehole drilling and groundwater monitoring well installation program. Six (6) boreholes (BH26-1 to BH26-6) were advanced to depths ranging from 6.7 to 10.9 mbgs at the site using continuous solid stem and hollow stem flight auger methods. The locations of the boreholes and monitoring wells are provided on **Figure 1**, and borehole logs are provided in **Appendix C**.

Following drilling, four (4) monitoring wells were installed in boreholes BH26-1 to BH26-4, in accordance with Ontario Regulation 903 (Wells Regulation). Each monitoring well was completed with 51 mm (2 inch) diameter schedule 40 polyvinyl chloride (PVC) pipe, with a 1.5 m (5ft) or 3.05 m (10 ft) screened interval at bottom of the well. The monitoring wells were sealed using bentonite grout and completed with stick up casings. Additional details are provided in **Table 1**.

Table 1. Borehole and Monitoring Well Installation Details

BH ID	Ground Surface Elevation (mASL)	Total Well Depth (mbgs)	Screened Interval (mbgs)	Screened Geological Unit
BH26-1	270.8	10.2	7.2 -10.2	Silty Clay Till (sand seems/layers)
BH26-2	273.0	6.1	4.6 - 6.1	Silty Clay Till
BH26-3	268.3	5.3	3.8 - 5.3	Silty Clay Till
BH26-4	269.1	6.1	4.6 - 6.1	Silty Clay Till

2.3.2 Geology and Soil Profile

The stratigraphy of the site area encountered during borehole drilling, as described by SLR (2026) in the geotechnical report is summarized below:

Topsoil: A 50 to 150 mm thick layer of surficial topsoil was encountered at all borehole locations. It should be noted that the thickness of the topsoil explored at the borehole locations may not be representative for the site and should not be relied on to calculate the amount of topsoil at the site.

Disturbed Native/ Fill: A thin veneer of disturbed native fill soils (herein referred to as “fill”) or Fill materials consisting of clayey silt / silty clay textures were encountered below topsoil in all boreholes and extended to depths ranging from about 1.2 to 1.7 m below the existing ground surface (mbgs). For cohesive clayey silt to silty clay materials, soils were a firm to very stiff consistency.

Silty Clay Till / Clayey Silt Till: Silty clay till / clayey silt till deposits were encountered beneath the disturbed native and fill materials in all boreholes and extended to depths ranging from 6.7 to 10.9 m below the existing ground surface (Elev. 266.3 to 259.5 m). All boreholes were terminated in these deposits. The consistency of soils ranged from firm to hard. The natural moisture contents measured in the soil samples ranged from approximately 5% to 20%.

2.3.3 Groundwater Levels and Flow

The stabilized groundwater levels at each monitoring well were measured by SLR personnel on May 27 and June 4, 2026 using an electronic water level indicator. Water level elevations are summarized in **Table 2**.

Groundwater levels measured within the monitoring wells ranged from approximately 0.68 m above ground surface to 4.76 m below ground surface, corresponding to groundwater elevations between 264.34 and 271.48 mASL. It should be noted that these measurements represent the piezometric head within the screened intervals of the monitoring wells, which were completed within the Halton Till deposits at depths ranging from 6 to 11 m below ground, rather than the shallow phreatic groundwater table immediately below the ground surface.

The observed groundwater conditions are characteristic of low permeability glacial till deposits containing localized discontinuous sand and silt seams. In these settings, significant lateral and vertical groundwater movement through the till matrix is limited, while localized higher permeability seams may become confined beneath the surrounding clay-rich till, producing elevated hydraulic pressures and upward vertical hydraulic gradients. The artesian conditions observed at 7.5 to 11 m depth at monitoring well BH26-1 are interpreted to reflect this localized confined groundwater response or the propagation of head pressure into the till from the deeper, confined ORMAC, rather than a regionally shallow groundwater table or widespread groundwater discharge condition.

Groundwater levels measured in BH26-4 during the initial monitoring event were lower than those measured during the second monitoring event. The well contained residual drilling fines during the first monitoring event, and the subsequent groundwater level measured following additional well development is considered more representative of long-term conditions.

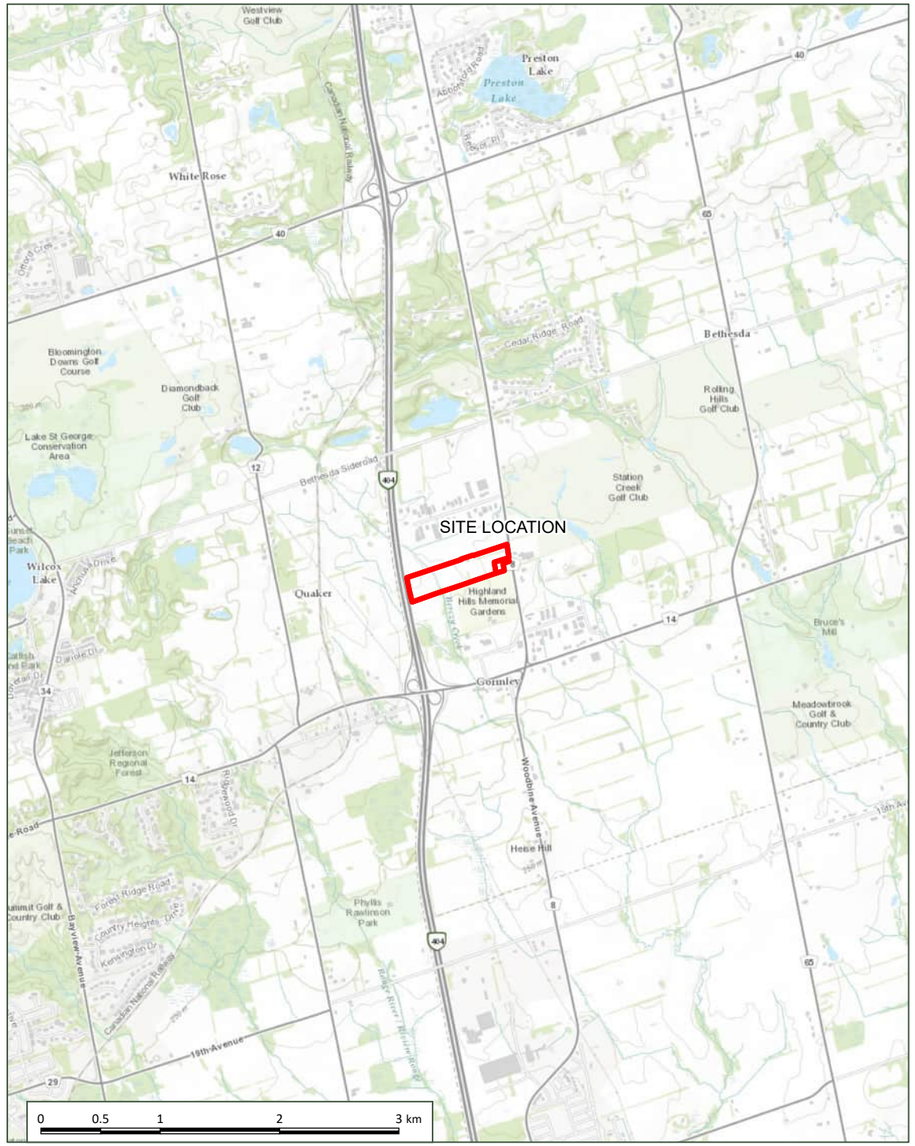
Based on the measured groundwater elevations, the regional hydraulic gradient is interpreted to follow topography and flow radially from the topographic high in the middle of the site (**Figure 6**). However, because groundwater flow is controlled by the low hydraulic conductivity of the Halton Till, groundwater flux across the site is expected to be limited.

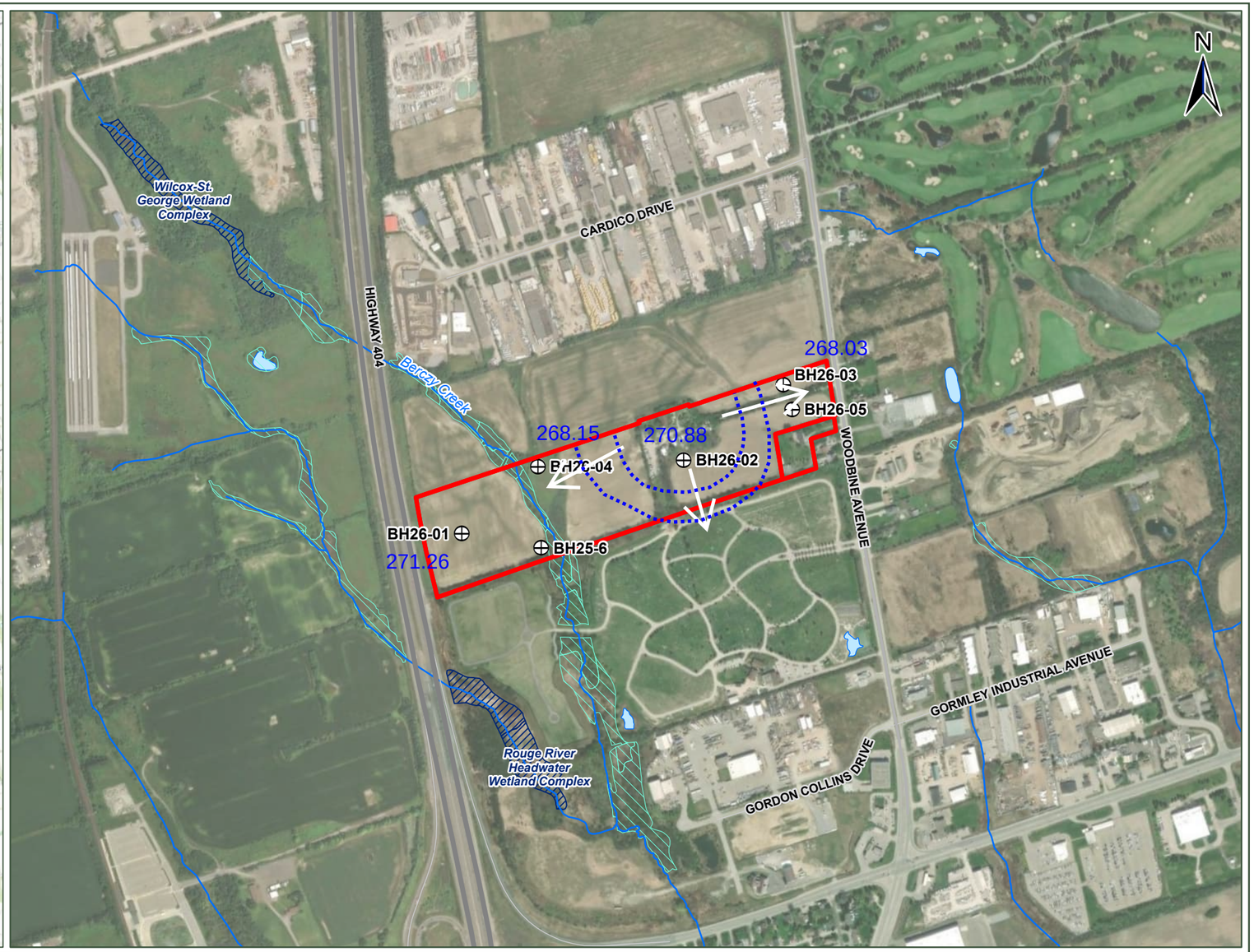
Continuous groundwater level monitoring was initiated at BH26-3 on June 4, 2026 using a Solinst Levelogger. Monitoring will continue for approximately one year to characterize seasonal groundwater fluctuations and confirm the anticipated shallow groundwater regime associated with the till soils.

Table 2. Groundwater Level and Elevation

Monitoring Well ID	Unit	Groundwater Level	
		27, May, 2026	04, June, 2026
BH26-1	mbgs	-0.68	-0.46
	mASL	271.48	271.26
BH26-2	mbgs	1.88	2.12
	mASL	271.12	270.88
BH26-3	mbgs	1.13	0.27
	mASL	267.17	268.03
BH26-4	mbgs	4.76	0.95
	mASL	264.34	268.15

A negative value indicates water above ground surface





Notes:

Service Layer Credits: City of Brampton, City of Toronto, York Region, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, AAFC, NRCan, New York State, Vantor

LEGEND:

- SUBJECT SITE
- BOREHOLE
- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- WATERCOURSE
- PROVINCIALLY SIGNIFICANT WETLAND (MNR)
- UNEVALUATED WETLAND (MNR)
- WATERBODY

0 100 200 400 600 m

SCALE 1:10,000
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 17N

THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

REX CHENG
KINGSDALE DEVELOPMENT
95 ROYAL CREST CT, UNIT 21-22
MARKHAM, ON L3R 9X5

HYDROGEOLOGICAL ASSESSMENT
12612 AND 12586 WOODBINE AVENUE
STOUFFVILLE, ON

GROUNDWATER FLOW

SLR

FIGURE NO:
6

DATE: June 8, 2026

PROJECT NO: 243.024905.00002

2.3.4 Hydraulic Conductivity

2.3.4.1 In-Situ Single Well Response Tests

On May 27th and June 4th 2026, SLR personnel conducted Single Well Response Tests (SWRT) at BH26-1, BH26-3, and BH26-4 to determine the hydraulic conductivity (K) of the screened soil units. Slug tests were completed either by adding 4L of distilled water to the well or by removing water with waterra tubbing to create a change in hydraulic head. Hydraulic conductivity values were estimated by measuring the rate of change in recovery of the water level. Water levels in each well were recorded using a datalogger set to record the water level every second. During the test, manual water level measurements were also recorded to gauge recovery to equilibrium.

Hydraulic conductivity (K) values were then calculated using the displacement-time data and were analysed using the Bouwer-Rice (1976) method for confined aquifers and unconfined, modelled using Aqtesolv™ software. The analysis results are presented in **Appendix D**, and the calculated hydraulic conductivity values are summarized in **Table 3**. Based on the results, the hydraulic conductivity of sandy silt till ranged from 1.5 $x10^{-6}$ to 4.0 $x10^{-5}$ m/s. The geometric hydraulic conductivity of the till was calculated to be 7.6 $x10^{-6}$ m/s, the 90th percentile hydraulic conductivity was calculated to be 3.8 $x10^{-5}$ m/s. The higher hydraulic conductivity values calculated at BH26-1 are reflective of the sand layers and seams found within the till (**Appendix C**).

Table 3. Slug Test Summary Table

BH ID	Test Type	Solution	K (m/s)	Geometric Mean K (m/s)	90th Percentile K (m/s)	Screened Stratigraphy
BH26-1	Rising Head	Bouwer-Rice Confined	4.0 $x10^{-5}$	7.6 $x10^{-6}$	3.8 $x10^{-5}$	Sand seems within the Silty Clay Till
	Rising Head		3.3 $x10^{-5}$			
BH26-3	Falling Head	Bouwer-Rice Unconfined	1.7 $x10^{-6}$			Silty Clay Till
BH26-4	Falling Head	Bouwer-Rice Unconfined	1.5 $x10^{-6}$			

2.3.5 Groundwater Chemistry

A groundwater chemistry sample was collected on May 27th, 2021 from BH26-1 and was analyzed for a suite of water quality parameters including physical parameters, nutrients, and metals. A summary of the groundwater analysis results is presented in **Table 4**, and the Certificate of Analysis is provided in **Appendix E**. Results were compared against the 2006 Ontario Drinking Water Standards, Objectives and Guidelines' Aesthetic Objectives (AOs) and Operational Guidelines (OGs) and the Schedule 1 (Microbiological) and Schedule 2 (Chemical) standards of the Ontario Drinking Water Quality Standards (2020). These criteria include both aesthetic and health-related parameters including nutrients, total metals, and general chemistry.

The groundwater sample met all AOs and OGs except for turbidity, hardness as $CaCO_3$, colour, dissolved, Iron, aluminum and manganese. The groundwater sample met all Schedule 1 (Microbiological) and 2 (Chemical) standards. These exceedances are expected to be related to

natural background conditions. Overall, the groundwater quality on site is generally good and reflective of the historical agricultural land use.

Table 4. Groundwater Chemistry Results

Parameter	Ontario DW Aesthetic and Operational Guidelines	Schedule 1 (Microbiological) and 2 (Chemical) Standards	Lowest Detection Limit	Units	MW21-1 26-Apr-21
Physical Tests (Water)					
Conductivity			1.0	µS/cm	419
Alkalinity, total (as CaCO3)	30 -> 500		1.0	mg/L	254
Colour, Apparent	5		2.0	CU	**352**
Hardness (as CaCO3), dissolved	80 -> 100		0.50	mg/L	**263**
Total Dissolved Solids	500		10	mg/L	284
Turbidity	5		0.10	NTU	**107**
pH	6.5 -> 8.5		0.10	pH units	8.31
Anions and Nutrients (Water)					
Ammonia, total (as N)			0.0050	mg/L	0.232
Chloride	250		0.50	mg/L	5.20
Fluoride		1.5	0.020	mg/L	0.173
Nitrate (as N)		10	0.020	mg/L	0.127
Nitrite (as N)		1	0.010	mg/L	<0.010
Phosphate, ortho-, dissolved (as P)			0.0010	mg/L	<0.0010
Sulfate (as SO4)	500		0.30	mg/L	14.9
Dissolved Metals (Water)					
Aluminum, dissolved	0.1		0.0010	mg/L	**1.05**
Antimony, dissolved		0.006	0.00010	mg/L	0.00040
Arsenic, dissolved		0.01	0.00010	mg/L	0.00141
Barium, dissolved		1	0.00010	mg/L	0.153
Beryllium, dissolved			0.000020	mg/L	0.000054
Bismuth, dissolved			0.000050	mg/L	<0.000050
Boron, dissolved		5	0.010	mg/L	0.048
Cadmium, dissolved		0.005	0.0000050	mg/L	0.0000932
Calcium, dissolved			0.050	mg/L	68.2
Cesium, dissolved			0.000010	mg/L	0.000094
Chromium, dissolved		0.05	0.00050	mg/L	0.00197
Cobalt, dissolved			0.00010	mg/L	0.00088
Copper, dissolved	1		0.00020	mg/L	0.00917
Iron, dissolved	0.3		0.010	mg/L	**1.32**
Lead, dissolved		0.01	0.000050	mg/L	0.00172
Lithium, dissolved			0.0010	mg/L	0.0158
Magnesium, dissolved			0.0050	mg/L	22.6
Manganese, dissolved	0.05		0.00010	mg/L	**0.0863**
Molybdenum, dissolved			0.000050	mg/L	0.00609
Nickel, dissolved			0.00050	mg/L	0.00283
Phosphorus, dissolved			0.050	mg/L	0.106

Parameter	Ontario DW Aesthetic and Operational Guidelines	Schedule 1 (Microbiological) and 2 (Chemical) Standards	Lowest Detection Limit	Units	MW21-1 26-Apr-21
Potassium, dissolved			0.050	mg/L	5.65
Rubidium, dissolved			0.00020	mg/L	0.00370
Selenium, dissolved		0.05	0.000050	mg/L	0.000074
Silicon, dissolved			0.050	mg/L	15.9
Silver, dissolved			0.000010	mg/L	<0.000010
Sodium, dissolved	200	20	0.050	mg/L	10.1
Strontium, dissolved			0.00020	mg/L	0.369
Sulfur, dissolved			0.50	mg/L	5.27
Tellurium, dissolved			0.00020	mg/L	<0.00020
Thallium, dissolved			0.000010	mg/L	0.000015
Thorium, dissolved			0.00010	mg/L	<0.00020
Tin, dissolved			0.00010	mg/L	0.00407
Titanium, dissolved			0.00030	mg/L	0.0505
Tungsten, dissolved			0.00010	mg/L	0.00017
Uranium, dissolved		0.02	0.000010	mg/L	0.000324
Vanadium, dissolved			0.00050	mg/L	0.00254
Zinc, dissolved	5		0.0010	mg/L	0.0240
Zirconium, dissolved	0.1		0.00020	mg/L	0.00060

bold *exceeds Aesthetic Objective, Operational Guideline or Schedule 1 (Microbiological) and 2 (Chemical) Standard*

3.0 Hydrogeological Conceptual Model

The hydrogeological conditions at the site are controlled primarily by the presence of low-permeability Halton Till deposits overlying a sequence of regionally significant confined aquifers within the Oak Ridges Moraine Aquifer Complex and Thorncliffe Aquifer Complex. The shallow till deposits govern groundwater movement, infiltration, and surface drainage at the site, while the deeper confined aquifers provide the principal source of potable groundwater supplies within the surrounding area.

The upper portion of the subsurface consists predominantly of silty clay and clayey silt till with occasional discontinuous sand and silt seams. These fine-grained soils exhibit relatively low hydraulic conductivity, resulting in slow groundwater movement and limited vertical groundwater recharge. Infiltration of precipitation is therefore restricted, with much of the annual water surplus being returned to the atmosphere through evapotranspiration, conveyed as surface runoff, or temporarily stored within the upper weathered till before slowly percolating downward through localized preferential pathways.

Groundwater monitoring completed as part of this investigation identified groundwater levels ranging from approximately 0.7 m above ground surface to 4.8 m below ground surface within monitoring wells completed in the Halton Till. These measured groundwater elevations represent piezometric heads within the screened intervals rather than the regional shallow groundwater table. The artesian conditions observed at BH26-1 are interpreted to reflect localized confined groundwater pressures within discontinuous sand seams bounded by lower permeability till deposits. These conditions are characteristic of glacial till environments where isolated granular lenses become hydraulically confined. Although localized upward hydraulic

gradients are present, the surrounding till matrix restricts groundwater movement such that overall groundwater flux across the site remains low.

The shallow groundwater system is therefore interpreted to consist of a relatively thin weathered till zone that responds seasonally to precipitation and snowmelt overlying a low-permeability till aquitard containing isolated confined granular seams. Groundwater flow through the shallow system is expected to be slow and localized, with limited hydraulic connectivity across the site. The measured hydraulic conductivity values support this interpretation and indicate that groundwater movement is controlled primarily by the fine-grained till rather than laterally continuous aquifer units.

At greater depth, the Halton Till forms an effective regional confining layer separating the shallow groundwater system from the underlying Oak Ridges Moraine Aquifer Complex and Thorncliffe Aquifer Complex. These deeper sand and gravel aquifers provide the principal potable groundwater supplies within the area and are the source of most domestic, commercial, industrial, and municipal groundwater wells identified in the MECP Water Well Records. The thickness and low permeability of the Halton Till significantly reduce vertical groundwater movement between the shallow groundwater system and these deeper confined aquifers, providing an effective degree of natural protection from surface activities.

From a hydrogeological perspective, the site exhibits characteristics that are favourable for the proposed cemetery land use. The low permeability of the native till limits groundwater movement beneath the site, resulting in low groundwater flux and reducing the potential for rapid contaminant migration. The fine-grained soils also provide favourable attenuation characteristics through adsorption and extended groundwater residence times. While seasonal shallow groundwater may be present within the upper weathered till following periods of significant recharge, the localized artesian conditions observed within the monitoring wells represent confined hydraulic pressures rather than a laterally extensive shallow groundwater table. Consequently, the hydrogeological conditions are considered representative of a low-permeability till setting that is well suited to cemetery development when appropriate grading and burial design practices are incorporated into the detailed design.

In addition to supporting the proposed cemetery use, the low-permeability native soils are generally poorly suited for conventional septic system leaching beds, as the fine-grained till exhibits relatively low infiltration capacity and limited long-term hydraulic acceptance. Any private sewage disposal systems proposed for the site would therefore require site-specific design in accordance with the Ontario Building Code, with consideration given to imported leaching bed materials, tertiary treatment systems, or other engineered solutions where required. Conversely, the low permeability of the native soils provides a beneficial hydrogeological barrier that limits downward contaminant migration toward the deeper regional potable aquifers.

4.0 Water Balance

4.1 Water Balance Methodology

A water balance assessment was completed using data from the Toronto and Region Source Protection Area (TRSPA) Water Balance Tool. Values for total yearly precipitation, evapotranspiration, infiltration, and runoff were determined using the Water Balance Average Function available from the TRSPA Water Balance Tool to calculate the average values across the study site (**Appendix F**).

4.2 Pre-Development Water Balance

A pre-to post-development water balance was completed for the site to determine the percentage change in runoff and groundwater recharge from site development. The pre-development parameters are summarized in **Table 5**. The TRSPA Water Balance average function reports a total yearly precipitation of 869 mm/year, an average evapotranspiration (ET) rate of 552 mm/year, average infiltration of 319 mm/year, and average runoff of 202 mm/year for the site and surrounding area (61% infiltration, 39% runoff).

The overall site has an area is approximately 16.18 ha. Based on this size and the TRSPA Water Balance average function, approximately 51,614 m^3/year infiltrates and approximately 32,683 m^3/year runs off.

Table 5. Pre-Development Water Balance

Parameter	TRSPA Water Balance
Precipitation	869
Evapotranspiration (ET)	552
Infiltration (mm/yr)	319
Runoff (mm/yr)	202
Site Area (ha)	16.18
Total Infiltration (m^3/yr)	51,614
Total Runoff (m^3/yr)	32,683

4.2.1 Post-Development Water Budget

Based on the current Concept Plan (**Appendix A**), the proposed land use is expected to include a relatively low proportion of impervious cover compared with more urban forms of development. The concept plan identifies approximately 50% of the site as non-developable area, with the disruption area consisting primarily of landscape areas, pervious roads, and cemetery lands. Impervious surfaces, including buildings, hardscape areas, and bridges, are identified as approximately 14.61% of the site area. Large portions of the site are therefore expected to remain as landscaped lawn, cemetery grassland, and natural/open space areas.

The proposed cemetery land use provides a reasonable opportunity to maintain pre-development groundwater infiltration rates through detailed design. Given the limited impervious cover, extensive grassed areas, and use of Low Impact Development measures, it is expected that post-development infiltration can be maintained to the extent practical. This will be confirmed through a detailed pre- to post-development water balance assessment once the final site plan and stormwater management strategy are available.

From a hydrogeological perspective, the primary design objective will be to maintain the existing groundwater recharge function of the site while respecting the natural heritage constraints associated with Berzy Creek and adjacent wetlands. This should be achieved by directing clean runoff from roof, road, parking, and landscaped areas to appropriately designed LID measures, where feasible, and by maintaining adequate buffers to natural features.

5.0 Low Impact Development Considerations

The use of LID measures are required by TRCA as part of the overall stormwater management plan to help achieve 5 mm of stormwater retention. As stated in *Low Impact Development Stormwater Management Planning and Design Guide Version 1.0* (2010) by CVC and TRCA,

> "Developing stormwater management plans requires an understanding of the depth to water table, depth to bedrock, native soil infiltration rates, estimated annual groundwater recharge rates, locations of significant groundwater recharge and discharge, groundwater flow patterns and the characteristics of the aquifers and aquitards that underlay the area" (TRCA and CVC, 2010).

For sites with deep water table conditions and high permeability soils, LID practices can significantly improve infiltration and groundwater recharge to maintain the groundwater characteristics of the underlying aquifer. However, for sites with low permeability soils and high water table conditions, the amount of infiltration is limited by the saturated hydraulic conductivity of the soil (i.e., the rate at which water can infiltrate). Under these conditions, LID practices should focus on filtration, evaporation, detention and re-use to minimize pre-to-post changes in the site water budget.

The site is underlain by Halton Till soils. Groundwater was found at shallow depths in the during monitoring ranging from 0.68 meters above ground surface to 4.76 mbgs across site. These conditions will limit the groundwater recharge function and limit LID depth/ design. Infiltration rates with a safety factor of 2.5 was on average 17 mm/hr on site within the fine-textured deposits. Under Source Water Protection Policies, the site was not identified as a SGRA nor is it located in a WHPA or WHPA-Q2. Post-development, stormwater runoff could be infiltrated through the use of LID measures that are commensurate with the existing hydrogeological function of the site. The lower permeability soils on site will limit the groundwater recharge function these areas under both pre-development and post-development conditions. LID practices should focus on detention and enhanced infiltration. A series of rear yard infiltration trenches and vegetated swales may be effective in maintaining the pre-development infiltration rates. It is important to note that LIDs should be installed at least 1 m above the water table, which may not be practical or representative of existing conditions at this site.

6.0 Preliminary Dewatering Assessment

The proposed development includes a range of structures requiring different excavation depths. Based on the current conceptual site plan, most cemetery lands, roadways, landscaping and burial areas are anticipated to require only shallow excavations that are expected to remain above or only marginally intercept the shallow groundwater table. Consequently, little or no active groundwater control is anticipated for the majority of the site.

It is important to notes that while the site is underlain predominantly by low-permeability Halton Till, hydraulic conductivity testing identified localized sand seams with hydraulic conductivity values ranging from approximately 1.5×10^{-6} to 4.0×10^{-5} m/s. These values are somewhat higher than would typically be expected for the till matrix and indicate that localized seepage into excavations should be anticipated where these discontinuous granular seams are intercepted. However, because these seams are interpreted to be isolated and laterally discontinuous, groundwater inflows are expected to remain localized rather than representative of a laterally extensive aquifer.

The proposed one-level underground parking structures, with anticipated excavation depths on the order of approximately 4.5 m below existing grade, are expected to extend below the shallow groundwater table encountered across portions of the site. Based on the low hydraulic conductivity of the native and localized nature of sand or silt seems in the till, groundwater inflows are anticipated to be relatively small and should generally be manageable using localized sump pumping or similar conventional construction dewatering techniques. Final dewatering requirements will depend on the detailed excavation geometry, groundwater conditions at the time of construction, and the selected shoring system.

The proposed mausoleum represents the greatest hydrogeological challenge on the site. The current concept includes two levels of underground parking extending approximately 7.5 m below existing grade. Monitoring Well BH26-1, located within the proposed mausoleum footprint, encountered confined groundwater conditions within localized sand seams beginning at approximately 6 to 7 m below ground surface. Following completion of drilling, artesian groundwater conditions developed, with stabilized piezometric levels approximately 0.5 to 0.7 m above the existing ground surface. These observations indicate the presence of localized confined groundwater pressures beneath the excavation rather than a high-yield aquifer.

Accordingly, construction of the mausoleum may require both conventional groundwater dewatering above the excavation base and localized depressurization of the confined groundwater system beneath the excavation to reduce uplift pressures and manage basal stability. Given the low permeability of the surrounding till deposits, groundwater inflows are expected to remain relatively low; however, depressurization measures may be required to safely construct the lowest excavation level. Potential methods may include localized relief wells, internal pumping wells, wellpoints, or other depressurization systems incorporated within the temporary excavation support system.

At this stage of planning, the available hydrogeological information indicates that groundwater control requirements are expected to range from localized conventional dewatering for shallow excavations to localized depressurization beneath the deepest portions of the mausoleum excavation. The need for a detailed depressurization system, anticipated pumping rates, potential Environmental Activity and Sector Registry (EASR) requirements, and any temporary groundwater discharge permitting considerations should be evaluated during detailed design once final excavation depths, foundation elevations, and shoring details have been established.

SLR should be afforded the opportunity to reassess these dewatering rates once the final layout including the design of stormwater management facilities and the invert elevations of on-site buildings and linear infrastructure are available.

7.0 Impact Assessment and Hydrogeological Design Considerations

7.1 Natural Features

Berzy Creek flows through the western portion of the site and is associated with riparian wetland communities adjacent to the channel. Based on the regional physiography, surficial geology, borehole drilling, and groundwater monitoring completed as part of this investigation, the hydrogeological function of the creek is interpreted to be controlled primarily by the low-permeability Halton Till deposits underlying the site.

Borehole drilling did not identify laterally extensive shallow sand or gravel aquifers that would provide significant groundwater discharge to Berzy Creek or the adjacent wetlands. Instead, the

site is underlain by predominantly fine-grained silty clay and clayey silt till containing localized discontinuous sand seams. Although localized upward hydraulic gradients were observed within confined sand seams, the surrounding till matrix limits groundwater movement and the overall groundwater flux. Consequently, Berzy Creek and the adjacent wetlands are interpreted to be influenced primarily by precipitation, surface runoff, seasonal shallow groundwater conditions, and localized interflow near the valley lands rather than sustained discharge from deeper groundwater systems.

From a hydrogeological perspective, no significant groundwater-supported features have been identified that would be sensitive to localized construction dewatering or minor changes in groundwater levels. The primary hydrogeological design consideration for the proposed development will be to maintain pre-development groundwater infiltration volumes, to the best extent practical, through the implementation of the site water balance strategy and appropriately designed LID measures, where feasible. In addition, the proposed development will maintain appropriate setbacks and buffers to Berzy Creek and adjacent natural features consistent with the Oak Ridges Moraine Conservation Plan, applicable municipal policies, and the recommendations of the accompanying Ecological Impact Study (EIS) prepared by SLR. Subject to these measures, no significant adverse hydrogeological impacts to Berzy Creek or the adjacent wetlands are anticipated.

7.2 Aquifers

The hydrogeological investigation identified no shallow, laterally continuous aquifer units beneath the site. Instead, the site is underlain predominantly by low-permeability Halton Till consisting of silty clay and clayey silt with localized discontinuous sand seams. Hydraulic conductivity testing confirmed that groundwater movement through the till matrix is limited, resulting in generally low groundwater flux across the site. Groundwater monitoring identified localized upward hydraulic gradients within confined sand seams; however, these conditions represent localized piezometric pressures rather than extensive groundwater flow within a continuous aquifer.

The deeper regional potable aquifers, including the Oak Ridges Moraine Aquifer Complex and Thorncliffe Aquifer Complex, are separated from the shallow groundwater system by the low-permeability Halton Till aquitard. This confining unit substantially limits vertical groundwater movement and provides an effective natural barrier between surface activities and the underlying regional groundwater resources. The review of surrounding water well records indicates that these deeper confined aquifers represent the primary potable groundwater source within the area.

The proposed cemetery development is not expected to adversely affect either the shallow groundwater system or the underlying regional aquifers. The majority of site development will consist of landscaped open space and cemetery lands, with relatively limited impervious cover. Construction activities, including temporary dewatering associated with deeper excavations, are anticipated to be localized and of limited duration, with no long-term changes to regional groundwater flow conditions. The use of watertight foundation will be considered to prevent long-term or permanent drainage conditions. Furthermore, the proposed stormwater management strategy and LID measures will be designed to maintain the site's existing groundwater recharge function to the extent practical. Accordingly, no significant adverse hydrogeological effects to local or regional aquifer systems are anticipated.

7.3 Groundwater Recharge and Discharge

The proposed cemetery use is expected to maintain groundwater recharge characteristics that are generally consistent with existing conditions. The conceptual site plan indicates that approximately one-half of the property will remain as non-developable natural area, while the developable portion will consist predominantly of cemetery grassland, landscaped open space, and other pervious surfaces. Impervious cover is anticipated to remain relatively low compared to conventional urban development, providing significant opportunity to maintain groundwater infiltration through natural infiltration processes and appropriately designed LID measures.

The hydrogeological function of the site is governed primarily by the low-permeability Halton Till, which naturally limits groundwater recharge to deeper aquifer systems. Consequently, the objective of the post-development water balance will be to maintain the site's existing recharge function rather than maximize infiltration beyond natural conditions. During detailed design, the stormwater management strategy will incorporate LID measures, where appropriate, to maintain pre-development infiltration volumes to the extent practical while remaining consistent with the native soil conditions and groundwater regime.

Based on the proposed land use, the relatively low proportion of impervious cover, and the extensive landscaped areas proposed across the site, it is considered reasonable to conclude that the post-development water balance objectives can be achieved through detailed stormwater management and LID design. Confirmation will be provided through a detailed pre- to post-development water balance assessment during the subsequent design phase.

7.4 Private Water Wells

A review of the MECP Water Well Records identified numerous water supply wells within the surrounding area, including domestic, commercial, industrial, livestock, and public supply wells. The majority of these wells obtain water from deeper confined overburden aquifers that are separated from the shallow groundwater system by the low-permeability Halton Till aquitard.

The proposed cemetery development is not expected to result in significant long-term impacts to surrounding water supply wells. Routine site grading, burial excavations, and associated infrastructure construction will occur within the shallow till deposits and are not expected to alter groundwater conditions within the deeper confined potable aquifers. Similarly, the low hydraulic conductivity of the native till substantially limits groundwater movement and reduces the potential for off-site groundwater migration.

Although impacts are not anticipated, it is recommended that the nearest adjacent private water supply well be offered pre-construction documentation and groundwater level monitoring during any significant dewatering activities as a precautionary measure and to provide baseline information should any concerns arise during construction.

7.5 Suitability the Proposed Land Use Based on the Hydrogeological Conditions

The hydrogeological conditions encountered at the site are considered suitable for the proposed cemetery development. The site is underlain by predominantly fine-grained Halton Till consisting of silty clay and clayey silt till with occasional discontinuous sand seams. These deposits exhibit relatively low hydraulic conductivity, limiting groundwater movement through the subsurface and resulting in generally low groundwater flux across the site.

Groundwater monitoring identified localized upward hydraulic gradients and artesian conditions within one monitoring well completed in a confined sand seam within the till. These measured groundwater elevations represent localized piezometric pressures within the screened interval rather than the regional shallow groundwater table. The observed artesian conditions are interpreted to be associated with isolated confined sand seams and are not indicative of widespread groundwater discharge or high groundwater flow conditions beneath the site. The measured hydraulic conductivity values confirm that groundwater movement through the till matrix is limited, with groundwater flow expected to occur predominantly through localized discontinuous granular seams rather than through laterally continuous aquifer units.

From a cemetery design perspective, the low-permeability soils present at the site provide favourable conditions by limiting the rate of groundwater movement beneath the proposed burial areas. The limited groundwater flux reduces the potential for lateral migration of groundwater and provides a naturally attenuating subsurface environment. Although seasonal shallow groundwater may occur within the upper weathered till following snowmelt or prolonged precipitation events, these conditions are typical of fine-grained till landscapes throughout southern Ontario and can be effectively managed through detailed grading, surface drainage design, and burial layout during detailed design.

The hydrogeological interpretation is further supported by the presence of an existing cemetery immediately adjacent to the subject property that has operated successfully under the same regional geological, topographic, and hydrogeological setting. The successful long-term operation of the adjacent cemetery demonstrates that the local hydrogeological conditions are compatible with cemetery land use when appropriate site grading and burial design practices are employed.

Based on the geological conditions encountered, the measured hydraulic conductivity, groundwater monitoring results, and the conceptual hydrogeological model developed for the site, no hydrogeological constraints have been identified that would preclude the proposed cemetery development. The primary hydrogeological design consideration will be to incorporate final grading and burial layouts that maintain adequate separation from the anticipated seasonal shallow groundwater conditions where practical and promote positive surface drainage. Subject to these standard design considerations, no significant adverse effects to groundwater resources, surrounding water supply wells, or adjacent natural features are anticipated as a result of the proposed development.

7.6 Hydrogeological Dewatering and Foundation Design Considerations

Construction dewatering is expected to consist primarily of localized sump pumping, wellpoints, or similar conventional groundwater control methods for the shallower excavations. For the proposed mausoleum excavation, additional localized depressurization of confined groundwater pressures beneath the excavation may be required to manage uplift pressures and maintain excavation stability where artesian conditions are encountered. The extent of any depressurization system will depend on the final excavation depth, footprint, shoring system, and foundation design.

Watertight underground structures should be incorporated into the final building design where appropriate to minimize long-term groundwater inflows and reduce the need for permanent groundwater lowering. Temporary construction dewatering is anticipated to be localized and of relatively low volume due to the low permeability of the native soils, resulting in a relatively

limited radius of influence. Consequently, significant impacts to nearby private water supply wells, Berzy Creek, adjacent wetlands, or regional aquifer systems are not anticipated.

A detailed construction dewatering assessment should be completed during the detailed design phase once the building footprints, excavation limits, foundation elevations, and temporary excavation support systems have been finalized. The assessment should include an evaluation of anticipated groundwater inflows, depressurization requirements, settlement potential, and any applicable EASR permitting requirements.

8.0 Conclusions and Recommendations

Based on the hydrogeological investigation completed for the proposed cemetery development at 12612 and 12586 Woodbine Avenue, the following conclusions and recommendations are provided:

- Six (6) boreholes were advanced across the site during the geotechnical investigation, with four (4) completed as groundwater monitoring wells. Groundwater levels, hydraulic conductivity testing and groundwater quality sampling were completed to characterize the shallow hydrogeological conditions.
- The site is underlain predominantly by low-permeability Halton Till consisting of silty clay till and clayey silt till with localized discontinuous sand seams. No laterally continuous shallow aquifers were encountered during the investigation.
- Groundwater monitoring identified piezometric water levels ranging from approximately 0.7 m above ground surface to 4.8 m below ground surface. Artesian conditions observed within monitoring well BH26-1 are interpreted to reflect localized confined groundwater pressures within isolated sand seams rather than a regionally shallow groundwater table or widespread groundwater discharge conditions.
- Hydraulic conductivity testing indicates that groundwater movement through the native till is generally low, with calculated hydraulic conductivity values ranging from approximately 1.5×10^{-6} to 4.0×10^{-5} m/s and a geometric mean hydraulic conductivity of approximately 7.6×10^{-6} m/s. The higher values are associated with localized sand seams encountered within the till.
- Groundwater chemistry is generally representative of natural background conditions within the Halton Till. All health-based Ontario Drinking Water Quality Standards were met. Aesthetic or operational exceedances for parameters such as iron, manganese, turbidity, hardness, colour and aluminum are interpreted to reflect naturally occurring groundwater chemistry.
- Review of MECP Water Well Records indicates that the surrounding area is serviced by numerous private water supply wells completed primarily within the deeper Oak Ridges Moraine Aquifer Complex and Thorncliffe Aquifer Complex. These regional aquifers are separated from the shallow groundwater system by the low-permeability Halton Till aquitard, providing significant natural protection from surface activities.
- Berzy Creek and associated riparian wetlands are interpreted to function primarily as surface water features influenced by precipitation, runoff and shallow seasonal groundwater conditions. No groundwater-dependent natural features sustained by significant regional groundwater discharge were identified within the study area.
- Based on the conceptual site plan, approximately one-half of the property will remain as natural or landscaped open space and overall impervious cover will remain relatively

low. It is anticipated that pre-development groundwater recharge can be maintained through detailed stormwater management design and incorporation of appropriately designed LID measures where feasible. A detailed post-development water balance should be completed during the detailed design stage once the site layout has been finalized.

- Construction dewatering requirements are expected to vary according to excavation depth. Shallow site works and burial areas are anticipated to require little or no groundwater control. One-level underground parking structures may require localized conventional construction dewatering. The proposed mausoleum, with two levels of underground parking, is expected to require both conventional dewatering and localized depressurization of confined groundwater beneath the excavation due to the artesian conditions encountered at BH26-1. Final dewatering requirements, anticipated pumping rates, and permitting requirements should be confirmed during detailed design once final excavation depths, foundation elevations and shoring systems have been established.
- Underground structures extending below the groundwater table should be designed as watertight structures where practical to minimize long-term groundwater inflows and eliminate the need for permanent groundwater lowering or foundation drainage systems.
- Due to the low permeability of the native till, temporary construction dewatering is expected to have a limited radius of influence. Significant impacts to adjacent private water supply wells, Berzy Creek, wetlands, or regional aquifers are not anticipated. As a precautionary measure, SLR recommends documenting and offering groundwater level monitoring of the nearest adjacent private well during significant dewatering activities associated with deep excavations.
- A project-specific construction dewatering assessment should be completed during detailed design once excavation limits, foundation elevations, and temporary shoring systems have been finalized. The assessment should evaluate anticipated groundwater inflows, depressurization requirements, potential settlement effects, and applicable permitting requirements.
- From a hydrogeological perspective, the site is considered suitable for the proposed cemetery development. The low-permeability native soils limit groundwater movement, reduce the potential for contaminant migration, and provide favourable natural attenuation characteristics. Subject to implementation of the recommendations presented in this report, detailed stormwater management design, and appropriate construction dewatering measures where required, no hydrogeological constraints have been identified that would preclude the proposed development.

9.0 Closure

This report has been prepared for the exclusive use of 12612 Woodbine (KD) Corporation to support the planning and design of the proposed cemetery development at 12612 and 12586 Woodbine Avenue. The findings, conclusions, and recommendations presented herein are based on the available information, field investigations completed by SLR, and the proposed conceptual site plan available at the time of this assessment.

SLR trusts that this report satisfies the current project requirements. Should you have any questions regarding the findings of this investigation or require additional hydrogeological support during the detailed design, permitting, or construction phases of the project, please do not hesitate to contact the undersigned.

Respectfully submitted,

SLR Consulting (Canada) Ltd.

for **Cole Thompson, B.Sc.,**
Environmental Scientist

Jason Cole, M.Sc., P. Geo
Principal Hydrogeologist, Business Lead

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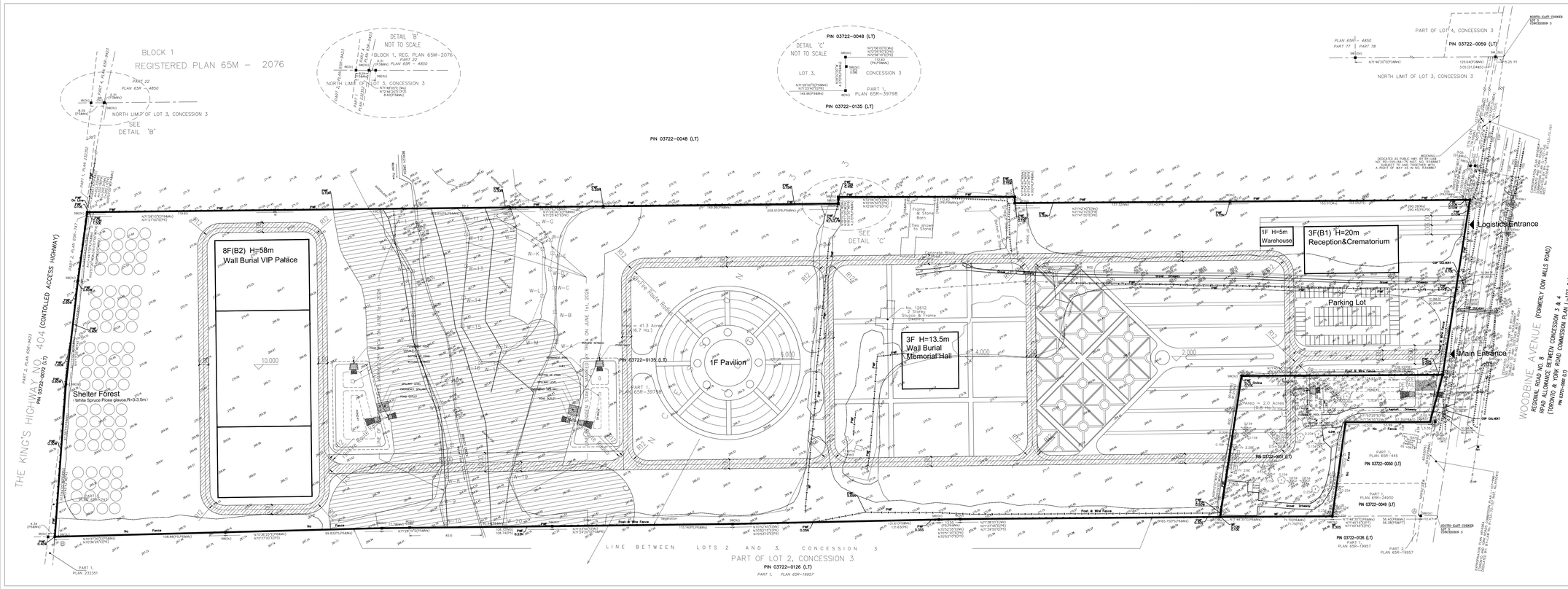
Appendix A – Concept Plan (2026)



PLAN A

Disruption Area=50%（including the bridges in the wetland）

- Site Entrance
- Fire Access Route(Width=6m,Inner Radius=9m)
- Road Centreline
- Road Radius
- Fire Road Radius
- Road Width
- 3F Building Floors
- H(m) Building Heights
- 404 Highway Setback
- Non-Developable Area
- Shelter Forest

Appendix B – MECP Water Well Records

WELL ID	BOREHOLE ID	TAG	POINT_X	POINT_Y	COORDINATE RELIABILITY	DATE COMPLETED	DEPTH (M)	BOTTOM LITHOLOGY	STATUS	WATER USE	DEPTH WATER FOUND (M)	DP_BEDROCK
6907564	10498259		-79.3835724	43.9469617	margin of error : 100 m - 300 m	11/23/1959	4.6	GRAVEL	Water Supply	Livestock	2.7	0
6907566	10498261		-79.3806057	43.9497468	margin of error : 100 m - 300 m	3/14/1963	50.9	COARSE SAND	Water Supply	Domestic	49.7	0
6907567	10498262		-79.380548	43.9500341	margin of error : 100 m - 300 m	12/19/1963	13.7	HARDPAN	Water Supply	Domestic	12.2	0
6907571	10498266		-79.3831112	43.9547792	margin of error : 100 m - 300 m	12/18/1959	12.8	GRAVEL	Water Supply	Livestock	12.2	0
6907667	10498362		-79.3791437	43.9457645	margin of error : 100 m - 300 m	4/9/1962	9.1	MEDIUM SAND	Water Supply	Industrial	4.6	0
6907672	10498367		-79.3772205	43.9482042	UTM very unreliable	10/15/1957	13.7	FINE SAND	Water Supply	Domestic	13.7	0
6907673	10498368		-79.374948	43.9483699	margin of error : 100 m - 300 m	8/12/1964	10.1	GRAVEL	Water Supply	Domestic	9.8	0
6907676	10498371		-79.3799275	43.9508536	margin of error : 100 m - 300 m	8/11/1962	24.7	COARSE SAND	Water Supply	Livestock	18.6	0
6907677	10498372		-79.3758234	43.9528301	margin of error : 100 m - 300 m	7/29/1967	13.4	COARSE SAND	Water Supply	Livestock	13.4	0
6907678	10498373		-79.3807763	43.954476	margin of error : 100 m - 300 m	11/4/1960	12.2	GRAVEL	Water Supply	Commerical	11.6	0
6907679	10498374		-79.3807729	43.9541428	margin of error : 100 m - 300 m	6/17/1965	4.6	MEDIUM SAND	Water Supply	Domestic	4.3	0
6908759	10499443		-79.3816247	43.9530655	margin of error : 30 m - 100 m	9/20/1968	11.6	CLAY	Water Supply	Domestic	10.7	0
6910409	10501055		-79.3789747	43.9451049	margin of error : 30 m - 100 m	8/4/1971	21.6	MEDIUM SAND	Water Supply	Domestic	21.0	0
6910675	10501320		-79.38157	43.9532448	margin of error : 30 m - 100 m	4/6/1971	8.5	MEDIUM SAND	Water Supply	Domestic	7.3	0
6911015	10501658		-79.3798709	43.948809	margin of error : 30 m - 100 m	7/20/1972	19.8	SAND	Water Supply	Domestic	15.8	0
6911016	10501659		-79.3799882	43.9490808	margin of error : 30 m - 100 m	7/20/1972	19.8	SAND	Water Supply	Domestic	18.3	0
6911902	10502529		-79.3805953	43.9547165	margin of error : 30 m - 100 m	11/15/1973	13.4	SAND	Water Supply	Domestic	11.0	0
6912185	10502807		-79.3789951	43.9471039	margin of error : 30 m - 100 m	4/22/1974	31.1	COARSE SAND	Water Supply	Industrial	30.2	0
6913069	10503662		-79.3790169	43.9522632	margin of error : 30 m - 100 m	4/11/1975	22.6	SAND	Water Supply	Domestic	15.2	0
6913743	10504324		-79.3801713	43.9515143	margin of error : 30 m - 100 m	3/1/1976	26.5	FINE SAND	Water Supply	Domestic	19.2	0
6915461	10506022		-79.3841627	43.9513907	margin of error : 30 m - 100 m	9/5/1979	29.3	SAND	Water Supply	Domestic	29.3	0
6915717	10506273		-79.3797464	43.9488072	margin of error : 30 m - 100 m	8/5/1980	27.1	SAND	Water Supply	Domestic	25.6	0
6917888	10508226		-79.3870526	43.9542047	margin of error : 100 m - 300 m	8/6/1985	56.4	SAND	Water Supply	Industrial	51.8	0
6918599	10508925		-79.3852081	43.9546648	margin of error : 100 m - 300 m	6/3/1986	54.3	SAND	Water Supply	Industrial	50.3	0
6918631	10508957		-79.3868	43.9534088	margin of error : 100 m - 300 m	6/3/1986	33.5	CLAY	Water Supply	Industrial	30.8	0
6918665	10508991		-79.3829304	43.9540924	margin of error : 100 m - 300 m	8/18/1986	51.8	SAND	Water Supply	Industrial	46.0	0
6918674	10509000		-79.385947	43.9536128	margin of error : 100 m - 300 m	4/5/1986	46.9	SAND	Water Supply	Industrial	45.1	0
6918685	10509011		-79.3847752	43.9540824	margin of error : 100 m - 300 m	7/22/1986	47.9	SAND	Water Supply	Industrial	44.5	0
6918723	10509049		-79.3773236	43.9457927	margin of error : 100 m - 300 m	4/27/1987	25.6	SAND	Water Supply	Industrial	23.2	18.6
6918724	10509050		-79.3901796	43.9524031	margin of error : 100 m - 300 m	4/23/1987	61	SAND	Water Supply	Industrial	57.9	0
6918725	10509051		-79.390049	43.9530855	margin of error : 100 m - 300 m	4/7/1987	56.4	SAND	Water Supply	Industrial	53.0	26.2
6918903	10509229		-79.3785363	43.9451887	margin of error : 100 m - 300 m	7/7/1987	31.7	SAND	Water Supply	Commerical	25.9	0
6918908	10509234		-79.383651	43.9546338	margin of error : 100 m - 300 m	7/23/1987	56.4	SAND	Water Supply	Industrial	53.0	0
6918992	10509318		-79.3875445	43.9535273	margin of error : 100 m - 300 m	4/29/1986	25.6	SAND	Water Supply	Domestic	24.4	0
6919104	10509429		-79.380256	43.9534422	margin of error : 100 m - 300 m	10/8/1987	44.5	CLAY	Water Supply	Domestic	40.2	0
6919697	10510020		-79.3881445	43.9534638	margin of error : 100 m - 300 m	7/8/1988	56.4	SAND	Water Supply	Industrial	53.3	0
6919703	10510026		-79.3891021	43.9535403	margin of error : 100 m - 300 m	7/13/1988	61	SAND	Water Supply	Industrial	58.5	0
6920059	10510378		-79.3814315	43.9555927	margin of error : 100 m - 300 m	12/6/1988	42.7	CLAY	Water Supply	Industrial	39.6	17.1
6920171	10510490		-79.39067	43.9531662	margin of error : 100 m - 300 m	12/21/1988	26.2	CLAY	Water Supply	Commerical	24.1	0
6920272	10510591		-79.3775213	43.9457145	margin of error : 30 m - 100 m	3/23/1989	25.3	GRAVEL	Water Supply	Domestic	17.1	0
6920370	10510688		-79.3849418	43.9548321	margin of error : 100 m - 300 m	5/3/1989	67.1	COARSE SAND	Water Supply	Domestic	64.6	0
6920372	10510690		-79.3890803	43.9534229	margin of error : 100 m - 300 m	4/20/1989	49.1	COARSE SAND	Water Supply	Domestic	46.9	0
6920576	10510894		-79.385296	43.9541798	margin of error : 100 m - 300 m	8/5/1989	36.6	CLAY	Water Supply	Commerical	29.9	0
6920864	10511179		-79.3827473	43.9470581	margin of error : 100 m - 300 m	2/5/1990	76.2	SAND	Test Hole	Commerical	57.0	42.1
6921143	10511454		-79.3887156	43.9530847	margin of error : 100 m - 300 m	1/23/1989	65.5	MEDIUM SAND	Water Supply	Industrial	54.9	0
6921150	10511461		-79.3896234	43.9522332	margin of error : 100 m - 300 m	6/13/1990	51.8	SAND	Water Supply	Commerical	48.8	0
6922043	10512349		-79.3837807	43.9543115	margin of error : 3 - 10 m	8/19/1992	0					0
6922051	10512357		-79.3821765	43.9550991	margin of error : 30 m - 100 m	8/4/1992	59.4	SAND		Commerical	56.7	0
6922330	10512635		-79.3829274	43.9549837	margin of error : 30 m - 100 m	7/30/1993	50.3	SAND	Water Supply	Commerical	48.5	0
6922584	10512887		-79.3903235	43.9524771	margin of error : 30 m - 100 m	5/6/1994	36.3	CLAY	Water Supply	Commerical	30.5	0
6923371	10513673		-79.3839988	43.9540805	margin of error : 30 m - 100 m	3/20/1985	24.7	SAND	Water Supply	Commerical	21.6	0
6924696	10514974		-79.3819388	43.9546725	margin of error : 3 - 10 m	11/11/1998	61	SAND	Water Supply	Domestic	57.9	0
6924849	10515127		-79.3829019	43.9476545	margin of error : 30 m - 100 m	4/14/1999	53.3	SAND	Water Supply	Commerical	51.5	0
6925584	10515862		-79.3925117	43.9485554	UTM very unreliable	10/5/2000	44.8	FINE SAND	Water Supply	Domestic	42.7	0
6925586	10515864		-79.3877179	43.9534307	margin of error : 3 - 10 m	6/6/2000	54.3	MEDIUM SAND	Water Supply	Industrial	45.1	0
6925939	10523246		-79.3932977	43.9522219	UTM very unreliable	6/11/2001	51.2	SAND	Water Supply	Commerical	48.2	0
6929141	11328110	A005480	-79.3890932	43.9532701	margin of error : 30 m - 100 m	1/28/2005	6		Observation Wells	Not Used		0
7118380	1001966973	A081404	-79.3896364	43.9534578	margin of error : 30 m - 100 m	12/2/2008	27.4	SAND	Water Supply	Industrial	27.4	0
7154913	1003412496	A102851	-79.3855676	43.9435506	margin of error : 10 - 30 m	11/8/2010	64		Water Supply	Industrial	64.0	0
7175991	1003641515	A123949	-79.3807499	43.9534762	margin of error : 30 m - 100 m	12/12/2011	9.2	SILT		Monitoring	3.1	0
7188927	1004198333	A117994	-79.3789453	43.9451315	margin of error : 30 m - 100 m	4/18/2012	0					0
7191829	1004208081		-79.3786322	43.94519	margin of error : 30 m - 100 m	10/31/2012	3.7	FILL	Abandoned-Other			0
7246914	1005630336	A186301	-79.3888925	43.9523939	margin of error : 30 m - 100 m	7/22/2015	4.9	SILT	Test Hole	Monitoring and Test Hole		0
7246915	1005630548	A186515	-79.3887574	43.95232	margin of error : 30 m - 100 m	7/22/2015	4	SILT	Test Hole	Monitoring and Test Hole		0
7248525	1005693604	A170303	-79.3825208	43.9451641	margin of error : 30 m - 100 m	5/6/2015	29.9	MEDIUM SAND	Water Supply	Public	29.9	0
7254219	1005836916	A185241	-79.3849583	43.9536259	margin of error : 30 m - 100 m	11/18/2015	33.2	FINE SAND	Water Supply	Commerical		0
7264916	1006053258	A184871	-79.3868696	43.9543821	margin of error : 30 m - 100 m	5/16/2016	12.2	CLAY	Monitoring and Test Hole	Monitoring and Test Hole		0
7264917	1006053261	A197829	-79.3870443	43.9543756	margin of error : 30 m - 100 m	5/16/2016	12.2	CLAY	Monitoring and Test Hole	Monitoring and Test Hole		0
7276742	1006303746	A188984	-79.38046	43.9494656	margin of error : 30 m - 100 m	10/12/2016	52.4	SAND	Water Supply	Domestic	52.4	0
7288792	1006572821	A223613	-79.3805207	43.9453969	margin of error : 30 m - 100 m	2/28/2017	0					0
7289685	1006596699	A222110	-79.3788112	43.9454807	margin of error : 10 - 30 m	6/15/2017	24.4	SAND	Water Supply	Commerical	24.4	0
7290420	1006628798		-79.3787457	43.9455968	margin of error : 30 m - 100 m	6/22/2017	0		Abandoned-Other			0
7301071	1006865581	A222225	-79.3805713	43.9540859	margin of error : 30 m - 100 m	11/28/2017	27.4	SAND	Water Supply	Domestic	27.4	0
7334690	1007447387	A192421	-79.3869101	43.9538065	margin of error : 30 m - 100 m	1/17/2019	6.7	SILT	Monitoring and Test Hole	Monitoring and Test Hole		0
7334691	1007447390	A192420	-79.3875853	43.953726	margin of error : 30 m - 100 m	1/17/2019	7.6	SILT	Monitoring and Test Hole	Monitoring and Test Hole		0
7336474	1007499701	A231166	-79.3915989	43.9527832	margin of error : 30 m - 100 m	6/17/2019	71.9	COARSE SAND	Water Supply	Domestic	63.1	0
7342352	1007678493	A268048	-79.3855885	43.9524463	margin of error : 30 m - 100 m	5/29/2019	6.1	SILT	Monitoring and Test Hole	Monitoring and Test Hole		0
7342353	1007678496	A268049	-79.3857761	43.9528811	margin of error : 30 m - 100 m	5/29/2019	6.1	SILT	Monitoring and Test Hole	Monitoring and Test Hole		0
7342354	1007678499	A268050	-79.3859759	43.9533251	margin of error : 30 m - 100 m	5/28/2019	6.1	SILT	Monitoring and Test Hole	Monitoring and Test Hole		0
7344508	1007686399	A275632	-79.3854984	43.9530122	margin of error : 30 m - 100 m		6.1	CLAY				0
7345112	1007690082	A271723	-79.3900777	43.9468105	margin of error : 30 m - 100 m	9/9/2019	6.1	SILT	Test Hole	Test Hole	4.7	0
7345113	1007690085	A271722	-79.3884036	43.9474261	margin of error : 30 m - 100 m	9/6/2019	6.1	SILT	Test Hole	Test Hole		0
7345114	1007690091	A265094	-79.3898902	43.9459075	margin of error : 30 m - 100 m	9/9/2019	6.1	CLAY	Monitoring and Test Hole	Monitoring and Test Hole		0
7345115	1007690094	A277424	-79.3881979	43.9462798	margin of error : 30 m - 100 m	9/9/2019	6.1	SILT	Test Hole	Test Hole		0
7345116	1007690097	A277426	-79.3884581	43.9454101	margin of error : 30 m - 100 m	9/9/2019	6.1	CLAY	Monitoring and Test Hole	Monitoring and Test Hole		0
7345117	1007690100	A277425	-79.3877676	43.9446801	margin of error : 30 m - 100 m	9/9/2019	6.1	SILT	Test Hole	Test Hole	3.6	0

7345428	1007691423		-79.3916228	43.9528195	margin of error : 30 m - 100 m	10/11/2019	0		Abandoned-Supply			0
7351273	1007871073	A275857	-79.3915854	43.952819	margin of error : 30 m - 100 m	11/28/2019	4.6	TILL	Observation Wells	Monitoring		0
7351274	1007871076	A282851	-79.3907874	43.9528348	margin of error : 30 m - 100 m	11/28/2019	6.1	TILL	Observation Wells	Monitoring and Test Hole		0
7351275	1007871079	A275856	-79.3912574	43.9529675	margin of error : 30 m - 100 m	11/28/2019	4.6	TILL	Observation Wells	Monitoring and Test Hole		0
7352626	1008046122	A277486	-79.3811656	43.9528519	margin of error : 30 m - 100 m	11/15/2019	6.1	CLAY	Monitoring and Test Hole	Test Hole		0
7353409	1008115868	A289213	-79.3797796	43.9451523	margin of error : 30 m - 100 m		6.1		Observation Wells	Monitoring		0
7354933	1008192443	A277519	-79.391394	43.9502143	margin of error : 30 m - 100 m	1/21/2020	6.1	SILT	Observation Wells	Monitoring and Test Hole		0
7354934	1008192446	A277521	-79.3856057	43.9513481	margin of error : 30 m - 100 m	1/21/2020	6.1	SILT		Monitoring and Test Hole		0
7354935	1008192449	A277522	-79.381875	43.9510523	margin of error : 30 m - 100 m	1/21/2020	6.1	SILT	Observation Wells	Monitoring and Test Hole	2.0	0
7354936	1008192452	A277520	-79.3873477	43.9500672	margin of error : 30 m - 100 m	1/21/2020	6.1	SILT	Observation Wells	Monitoring and Test Hole	5.8	0
7354937	1008192455	A277515	-79.3896019	43.9510444	margin of error : 30 m - 100 m	1/9/2020	4.6	SILT	Observation Wells	Monitoring and Test Hole	4.5	0
7354938	1008192458	A277514	-79.3827424	43.9526131	margin of error : 30 m - 100 m	1/9/2020	4.6	SILT	Observation Wells	Monitoring and Test Hole	0.6	0
7354939	1008192461	A277517	-79.3862169	43.9517889	margin of error : 30 m - 100 m	1/9/2020	4.6	SILT	Observation Wells	Monitoring and Test Hole	0.3	0
7371162	1008497780	A223613	-79.3805207	43.9453969	margin of error : 30 m - 100 m	9/30/2020	0		Abandoned-Other	Monitoring		0
7381526	1008634939	A313991	-79.3835574	43.9533539	margin of error : 30 m - 100 m	2/4/2021	6.1	CLAY	Observation Wells	Monitoring		0
7381527	1008634942	A314045	-79.3834848	43.9532719	margin of error : 30 m - 100 m	2/4/2021	5.5	CLAY	Observation Wells	Monitoring		0
7381528	1008634945	A314042	-79.3835215	43.9537586	margin of error : 30 m - 100 m	2/4/2021	6.1	CLAY	Observation Wells	Monitoring		0
7382509	1008638524	A199018	-79.3797337	43.9454668	margin of error : 30 m - 100 m	2/23/2021	35.7	SAND	Water Supply	Domestic	33.5	0
7395439	1008775071	A327229	-79.3797778	43.9493479	margin of error : 30 m - 100 m	6/21/2021	6.1	CLAY	Observation Wells	Test Hole	3.7	0
7395440	1008775074	A327281	-79.3783848	43.9492471	margin of error : 30 m - 100 m	6/21/2021	6.1	CLAY	Observation Wells	Monitoring and Test Hole	3.7	0
7395441	1008775077	A327283	-79.3785768	43.9495199	margin of error : 30 m - 100 m	6/21/2021	6.1	CLAY	Observation Wells	Monitoring and Test Hole	3.7	0
7395442	1008775080	A327282	-79.3795489	43.9490565	margin of error : 30 m - 100 m	6/21/2021	6.1	CLAY	Observation Wells	Monitoring and Test Hole	3.7	0
7403923	1008860697	A334439	-79.3790479	43.9450249	margin of error : 30 m - 100 m	11/12/2021	0					0
7417135	1009022562	A229328	-79.3859769	43.9523708	margin of error : 30 m - 100 m	4/1/2022	0					0
7436217	1009308697	A366887	-79.384641	43.9529191	margin of error : 30 m - 100 m	11/30/2022	0					0
7436218	1009308700	A366860	-79.3851332	43.9531511	margin of error : 30 m - 100 m	11/30/2022	0					0
7436219	1009308703	A366859	-79.3851026	43.9533578	margin of error : 30 m - 100 m	11/17/2022	0					0
7436220	1009308706	A366858	-79.3850997	43.9534658	margin of error : 30 m - 100 m	11/17/2022	0					0
7441027	1009368904	A164238	-79.3886106	43.9526781	margin of error : 30 m - 100 m	1/12/2023	0					0
7445700	1009400347	A373298	-79.3806045	43.9537803	margin of error : 30 m - 100 m	2/24/2023	0					0
7445701	1009400350	A373299	-79.3803698	43.9537049	margin of error : 30 m - 100 m	2/24/2023	0					0
7445702	1009400353	A373300	-79.3807399	43.9533861	margin of error : 30 m - 100 m	2/24/2023	0					0
7450923	1009455239	A265094	-79.3898763	43.9459613	margin of error : 30 m - 100 m	5/30/2023	0		Abandoned-Other			0
7450924	1009455242	A271722	-79.3884507	43.9470666	margin of error : 30 m - 100 m	5/30/2023	0		Abandoned-Other			0
7450925	1009455245	A277424	-79.3880735	43.946269	margin of error : 30 m - 100 m	5/30/2023	0		Abandoned-Other			0
7450965	1009455851	A277426	-79.3884596	43.9453561	margin of error : 30 m - 100 m	5/30/2023	0		Abandoned-Other			0
7450966	1009455854	_NO_TAG	-79.3878328	43.944573	margin of error : 30 m - 100 m	5/30/2023	0		Abandoned-Other			0
7463961	1009626505	A382610	-79.3859706	43.9530639	margin of error : 30 m - 100 m	8/22/2023	0					0
7463962	1009626531	A382601	-79.38563	43.952753	margin of error : 30 m - 100 m	8/22/2023	0					0
7463964	1009626574	A382672	-79.3857377	43.9529166	margin of error : 30 m - 100 m	8/23/2023	0					0
7485740	1010419715	A403954	-79.3850604	43.9535373	margin of error : 30 m - 100 m	8/21/2024	0					0

Appendix C – Borehole Logs

Explanation of Terms Used in the Record of Borehole

Sample Type

AS	Auger sample
BS	Block sample
CS	Chunk sample
DO	Drive open
DS	Dimension type sample
FS	Foil sample
RC	Rock core
SC	Soil core
SS	Spoon sample
ST	Slotted tube
TO	Thin-walled, open
TP	Thin-walled, piston
WS	Wash sample

Penetration Resistance

Standard Penetration Resistance (SPT), N:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in) required to drive a 50 mm (2 in) drive open sampler for a distance of 300 mm (12 in).

Dynamic Cone Penetration Resistance, N_d:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in) to drive uncased a 50 mm (2 in) diameter, 60° cone attached to "A" size drill rods for a distance of 300 mm (12 in).

Textural Classification of Soils

Classification	Particle Size
Boulders	>300 mm
Cobbles	75 mm-300 mm
Gravel (Gr)	4.75 mm-75 mm
Sand (Sa)	0.075 mm-4.75 mm
Silt (Si)	0.002 mm-0.075 mm
Clay (Cl)	<0.002 mm

Coarse Grain Soil Description (50% greater than 0.075 mm)

Terminology	Proportion
Trace	0-10%
Some	10-20%
Adjective (e.g. silty or sandy)	20-35%
And (e.g. sand and gravel)	>35%

Soil Description

a) Cohesive Soils

Consistency	Undrained Shear Strength (kPa)	SPT "N" Value
Very soft	<12	0-2
Soft	12-25	2-4
Firm	25-50	4-8
Stiff	50-100	8-15
Very stiff	100-200	15-30
Hard	>200	>30

b) Cohesionless Soils

Density Index (Relative Density)	SPT "N" Value
Very loose	<4
Loose	4-10
Compact	10-30
Dense	30-50
Very dense	>50

Soil Tests

w	Water content
w_p	Plastic limit
w_l	Liquid limit
C	Consolidation (oedometer) test
CID	Consolidated isotropically drained triaxial test
CIU	consolidated isotropically undrained triaxial test with porewater pressure measurement
D_R	Relative density (specific gravity, Gs)
DS	Direct shear test
ENV	Environmental/ chemical analysis
M	Sieve analysis for particle size
MH	Combined sieve and hydrometer (H) analysis
MPC	Modified proctor compaction test
SPC	Standard proctor compaction test
OC	Organic content test
V	Field vane (LV-laboratory vane test)
γ	Unit weight

LOG OF BOREHOLE BH26-01

PROJECT: Geotechnical Investigation - 12612 Woodbine Ave

CLIENT: 12612 Woodbine (KD) Corp.

PROJECT LOCATION: Gormley, ON

DATUM: Geodetic

BH LOCATION: See Borehole Location Plan N 4867373.54 E 629183.86

Method: Hollow Stem Augers

Diameter: 200 mm

Date: May 22, 2026

REF. NO.: 243.024905.00001

ENCL NO.: 1

(m) ELEV / DEPTH	DESCRIPTION	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEV	DYNAMIC CONE PENETRATION RESISTANCE PLOT	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) (fines) GR SA SI CL
270.8	Ground Surface										
270.8 / 0.0	**TOPSOIL:** 150mm										
0.2	**CLAYEY SILT (DISTURBED):** sandy, trace gravel, trace organics, brown, moist, firm to very stiff.	1	SS	8		270					
		2	SS	16							
269.1											
1.7	**SILTY CLAY TILL:** some sand to sandy, trace gravel, oxidised, brown to grey, moist to wet, stiff to very stiff.	3	SS	17		269					
	grey below 2.3m	4	SS	16		268					
		5	SS	14		267			125		
	wet below 4.6m	6	SS	15		266			75		
		7	SS	11		265					
	contains silt seams/layers	8	SS	28		264					7 29 46 18
						263					

W. L. 271.4 m May 27, 2026
W. L. 271.2 m Jun 4, 2026

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 40 60 80 100

SHEAR STRENGTH (kPa): UNCONFINED + FIELD VANE & Sensitivity; QUICK TRIAXIAL × LAB VANE; 20 40 60 80 100

WATER CONTENT (%): w_P PLASTIC LIMIT; w NATURAL MOISTURE CONTENT; w_L LIQUID LIMIT; 10 20 30

Continued Next Page

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; ε_f=3% Strain at Failure

LOG OF BOREHOLE BH26-01

PROJECT: Geotechnical Investigation - 12612 Woodbine Ave

CLIENT: 12612 Woodbine (KD) Corp.

PROJECT LOCATION: Gormley, ON

DATUM: Geodetic

BH LOCATION: See Borehole Location Plan N 4867373.54 E 629183.86

Method: Hollow Stem Augers

Diameter: 200 mm

Date: May 22, 2026

REF. NO.: 243.024905.00001

ENCL NO.: 1

SOIL PROFILE			SAMPLES											
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100; SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L; WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) (fines) GR SA SI CL
	Continued											
262.1	**SILTY CLAY TILL:** some sand to sandy, trace gravel, oxidised, brown to grey, moist to wet, stiff to very stiff.(Continued)											
8.7	**SILTY CLAY TILL:** some sand, trace gravel, contains dilatant wet sandy silt layers, grey, moist to wet, hard.						262					
9			9	SS	32				○			
10							261					
259.9	contains wet sand and gravel layers		10	SS	50/ 75mm		260		○			
10.9	**END OF BOREHOLE** Notes: 1) A 50mm diameter monitoring well was installed upon completion of drilling. 2) Water Level Readings: Date W. L. Depth (mBGS) 2026-05-27 -0.68 2026-06-04 -0.46 (negative means above ground surface)											

GROUNDWATER ELEVATIONS

Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

GRAPH NOTES + 3, × 3: Numbers refer to Sensitivity ○ ε=3% Strain at Failure

SLR

LOG OF BOREHOLE BH26-02

PROJECT: Geotechnical Investigation - 12612 Woodbine Ave

CLIENT: 12612 Woodbine (KD) Corp.

Method: Hollow Stem Augers

PROJECT LOCATION: Gormley, ON

Diameter: 200 mm

REF. NO.: 243.024905.00001

DATUM: Geodetic

Date: May 21, 2026

ENCL NO.: 2

BH LOCATION: See Borehole Location Plan N 4867523.03 E 629637.17

SOIL PROFILE			SAMPLES										
(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	BLOWS / 0.3 m "N"	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) (fines) GR SA SI CL
273.0 Ground Surface												
272.8 0.2	**TOPSOIL:** 150mm											
	SILTY CLAY (DISTURBED): sandy, trace gravel, trace organics, grey, moist to wet, firm to stiff.		1	SS	5							
1			2	SS	14		272					
271.8 1.2	**SILTY CLAY TILL:** some sand to sandy, trace gravel, contains silt seams, oxidised, brown, moist, hard to very stiff.		3	SS	20	▽						
2							W. L. 271.1 m May 27, 2026					
			4	SS	31		W. L. 270.9 m Jun 4, 2026					
3	sandy		5	SS	25		270					
4							269					
	contains wet sand and gravel and sandy silt layers, grey		6	SS	39							8 33 41 18
5							268					
6							267					
	contains silty sand seams, grey, moist to wet		7	SS	22							
266.3 6.7	**END OF BOREHOLE**											

Notes:
1) A 50mm diameter monitoring well was installed upon completion of drilling.

2) Water Level Readings:

Date	W. L. Depth (mBGS)
2026-05-27	1.88
2026-06-04	2.12

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

SLR

LOG OF BOREHOLE BH26-03

PROJECT: Geotechnical Investigation - 12612 Woodbine Ave

CLIENT: 12612 Woodbine (KD) Corp.

Method: Hollow Stem Augers

PROJECT LOCATION: Gormley, ON

Diameter: 200 mm

REF. NO.: 243.024905.00001

DATUM: Geodetic

Date: May 21, 2026

ENCL NO.: 3

BH LOCATION: See Borehole Location Plan N 4867676.94 E 629838.87

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 10 20 30	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) (fines) GR SA SI CL
268.3	Ground Surface											
268.2 / 0.0	**TOPSOIL:** 150mm											
0.2	**CLAYEY SILT (DISTURBED):** sandy, trace gravel, trace organics, brown, moist, firm to very stiff.		1	SS	7							
			2	SS	17		W. L. 268.1 m Jun 4, 2026					
267.1 / 1.2	**SILTY CLAY TILL:** some sand to sandy, trace gravel, oxidised, contains cobbles, brown, moist, hard to very stiff.		3	SS	20		W. L. 267.2 m May 27, 2026					
	grey below 2.3m contains sandy silt seams		4	SS	44		266					
			5	SS	29		265					
			6	SS	32		264			75		
							263					
	contains sandy silt layers		7	SS	23		262					Wet spoon 5 34 43 18
261.6 / 6.7	**END OF BOREHOLE** Notes: 1) A 50mm diameter monitoring well was installed upon completion of drilling. 2) Water Level Readings: Date W. L. Depth (mBGS) 2026-05-27 1.13 2026-06-04 0.27											

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

GRAPH NOTES + 3, × 3: Numbers refer to Sensitivity ○ ε=3% Strain at Failure

SLR

LOG OF BOREHOLE BH26-04

PROJECT: Geotechnical Investigation - 12612 Woodbine Ave

CLIENT: 12612 Woodbine (KD) Corp.

Method: Hollow Stem Augers

PROJECT LOCATION: Gormley, ON

Diameter: 200 mm

REF. NO.: 243.024905.00001

DATUM: Geodetic

Date: May 22, 2026

ENCL NO.: 4

BH LOCATION: See Borehole Location Plan N 4867508.5 E 629341.64

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH (kPa) ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE & Sensitivity × LAB VANE (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) (fines) GR SA SI CL
269.1	Ground Surface											
269.0	**TOPSOIL:** 110mm						269					
0.1												
268.8	**FILL:** clayey silt, trace gravel, contains rootlets, brow, moist, very stiff.		1	SS	4				○			
0.3	**CLAYEY SILT (DISTURBED):** sandy, trace gravel, trace organics, brown, moist to wet, soft to very stiff.											
1			2	SS	18		W. L. 268.2 m Jun 4, 2026		○			
267.6												
1.5	**SILTY CLAY TILL:** some sand to sandy, trace gravel, oxidised, brown, moist, very stiff to stiff.		3	SS	18				○			
2							267					
			4	SS	18				○			
3	grey, moist to wet		5	SS	17		266		○			
4							265					
	wet below 4.6m											
	contains silty sand seams		6	SS	9		W. L. 264.4 m May 27, 2026		⊢○	25		3 32 41 24
							264					
6							263					
			7	SS	10				○	38		
262.4												
6.7	**END OF BOREHOLE**											

Notes:

1) A 50mm diameter monitoring well was installed upon completion of drilling.

2) Water Level Readings:

Date	W. L. Depth (mBGS)
2026-05-27	4.76
2026-06-04	0.95

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

SLR

LOG OF BOREHOLE BH26-05

PROJECT: Geotechnical Investigation - 12612 Woodbine Ave

CLIENT: 12612 Woodbine (KD) Corp.

Method: Hollow Stem Augers

PROJECT LOCATION: Gormley, ON

Diameter: 200 mm

REF. NO.: 243.024905.00001

DATUM: Geodetic

Date: May 21, 2026

ENCL NO.: 5

BH LOCATION: See Borehole Location Plan N 4867626.47 E 629855.77

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS / 0.3 m	GROUND WATER CONDITIONS	ELEVATION	REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL (fines)
267.4	Ground Surface							
267.0	**TOPSOIL:** 120mm							
0.1	**SILTY CLAY (DISTURBED):** sandy, trace gravel, trace organics, brown, moist, firm to very stiff.		1	SS	6		267	
1			2	SS	18		266	
265.7								
1.7	**SILTY CLAY TILL:** some sand to sandy, contains organics, oxidised, brown, moist, hard to stiff.		3	SS	19			
2			4	SS	57		265	
3	contains rock fragments, grey below 3.05m		5	SS	23		264	Spoon bouncing Auger grinding
4							263	
5			6	SS	13			
6	contains silty sand seams/pockets, moist to wet						262	
260.7			7	SS	32		261	
6.7	**END OF BOREHOLE**							

DYNAMIC CONE PENETRATION RESISTANCE PLOT
20 40 60 80 100

SHEAR STRENGTH (kPa)
○ UNCONFINED + FIELD VANE & Sensitivity
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%)
10 20 30

POCKET PEN. (Cu) (kPa)

NATURAL UNIT WT (kN/m³)

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+3, ×3: Numbers refer to Sensitivity
○ε=3% Strain at Failure

SLR

LOG OF BOREHOLE BH26-06

PROJECT: Geotechnical Investigation - 12612 Woodbine Ave

CLIENT: 12612 Woodbine (KD) Corp.

PROJECT LOCATION: Gormley, ON

DATUM: Geodetic

BH LOCATION: See Borehole Location Plan N 4867343.93 E 629345.34

Method: Hollow Stem Augers

Diameter: 200 mm

Date: May 22, 2026

REF. NO.: 243.024905.00001

ENCL NO.: 6

(m) ELEV / DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m	GROUND WATER CONDITIONS	ELEVATION
266.2	Ground Surface						
266.2 / 0.0	**TOPSOIL:** 50mm						
266.1 / 0.1	**SILTY CLAY (DISTURBED):** some sand, trace gravel, trace organics, brown, moist, firm to very stiff.		1	SS	6		266
			2	SS	8		265
264.6 / 1.7	**CLAYEY SILT TILL:** sandy, trace gravel, oxidised, brown, moist to wet, very stiff.		3	SS	26		
264.0 / 2.2	**SILTY CLAY TILL:** some sand, trace gravel, brownish grey, moist, very stiff to firm.		4	SS	16		264
			5	SS	17		263
	some sand to sandy, grey, wet						262
			6	SS	6		
260.6 / 5.6	**CLAYEY SILT TILL:** sandy, trace gravel, grey, wet, stiff.						261
			7	SS	15		260
259.5 / 6.7	**END OF BOREHOLE** Note: 1) Borehole was open with no groundwater accumulated.						

DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100)

SHEAR STRENGTH (kPa) (20 40 60 80 100)
- ○ UNCONFINED
- ● QUICK TRIAXIAL
- + FIELD VANE & Sensitivity
- × LAB VANE

PLASTIC LIMIT w_P — NATURAL MOISTURE CONTENT w — LIQUID LIMIT w_L

WATER CONTENT (%) (10 20 30)

POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m³)	REMARKS AND GRAIN SIZE DISTRIBUTION (%) (fines) GR SA SI CL
25		

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ε=3% Strain at Failure

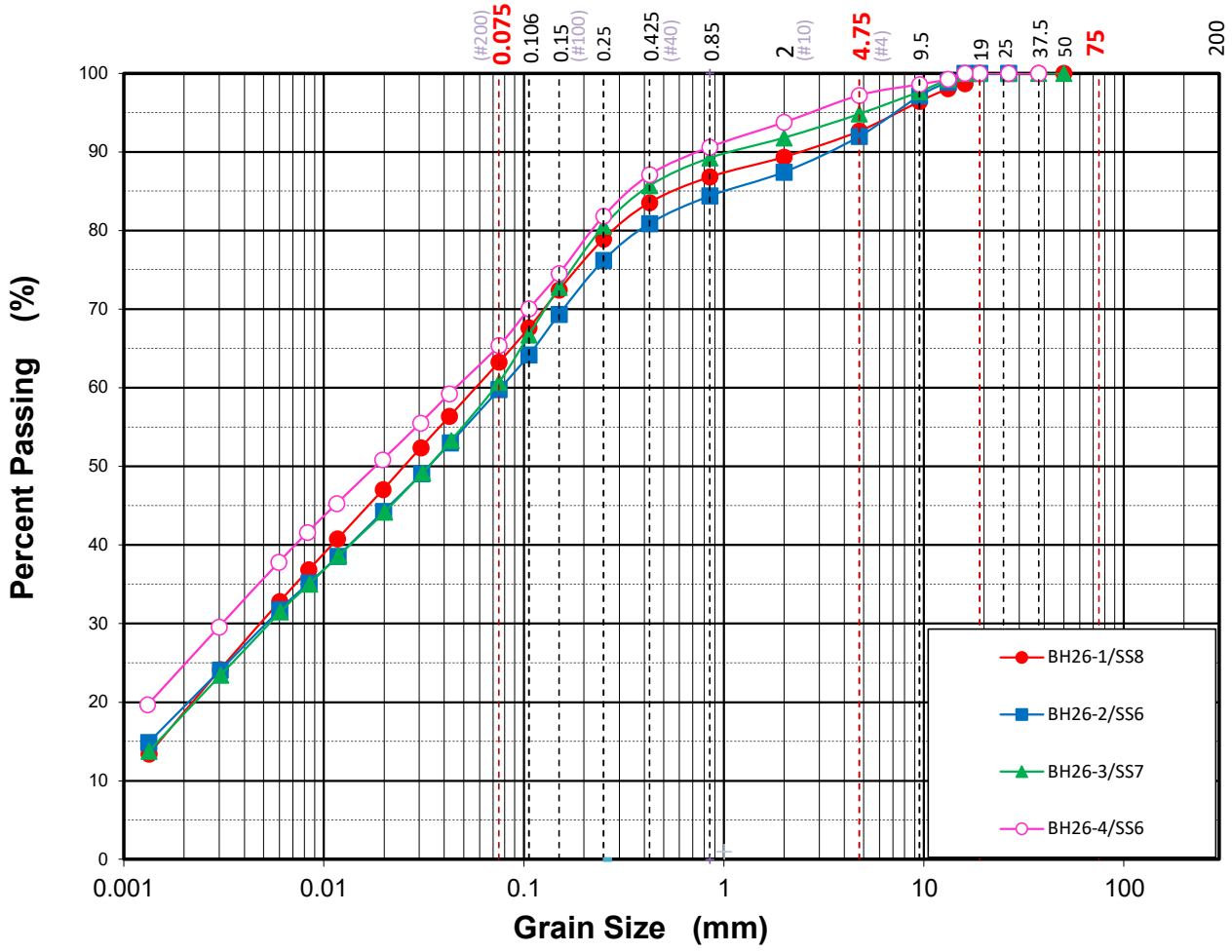
SLR Consulting (Canada) Ltd.
871 Equestrain Ct, Unit 1
Oakville, ON L6L 6L7

Particle Size Distribution Report
(ASTM D421/422)

Project No.:	243.024905.00001	Lab No.:	R26-022
Project Name:	12612 Woodbine Ave	Tested By:	BW
Client:	12612 Woodbine (KD) Corp.	Checked By:	TO
Location:	Gromley, Ontario	Date:	5/26/2026

Test Results

Test No	Sample No.	Clay	Silt	Sand			Gravel		Cobble+	Remarks
				Fine	Medium	Coarse	Fine	Coarse		
1	BH26-1/SS8	18	46	20	6	3	7			
2	BH26-2/SS6	18	41	21	7	5	8			
3	BH26-3/SS7	18	43	25	6	3	5			
4	BH26-4/SS6	24	41	22	7	3	3			
5										
6										
7										
8										



SLR

SLR Consulting (Canada) Ltd.
871 Equestrain Ct, Unit 1
Oakville, ON L6L 6L7

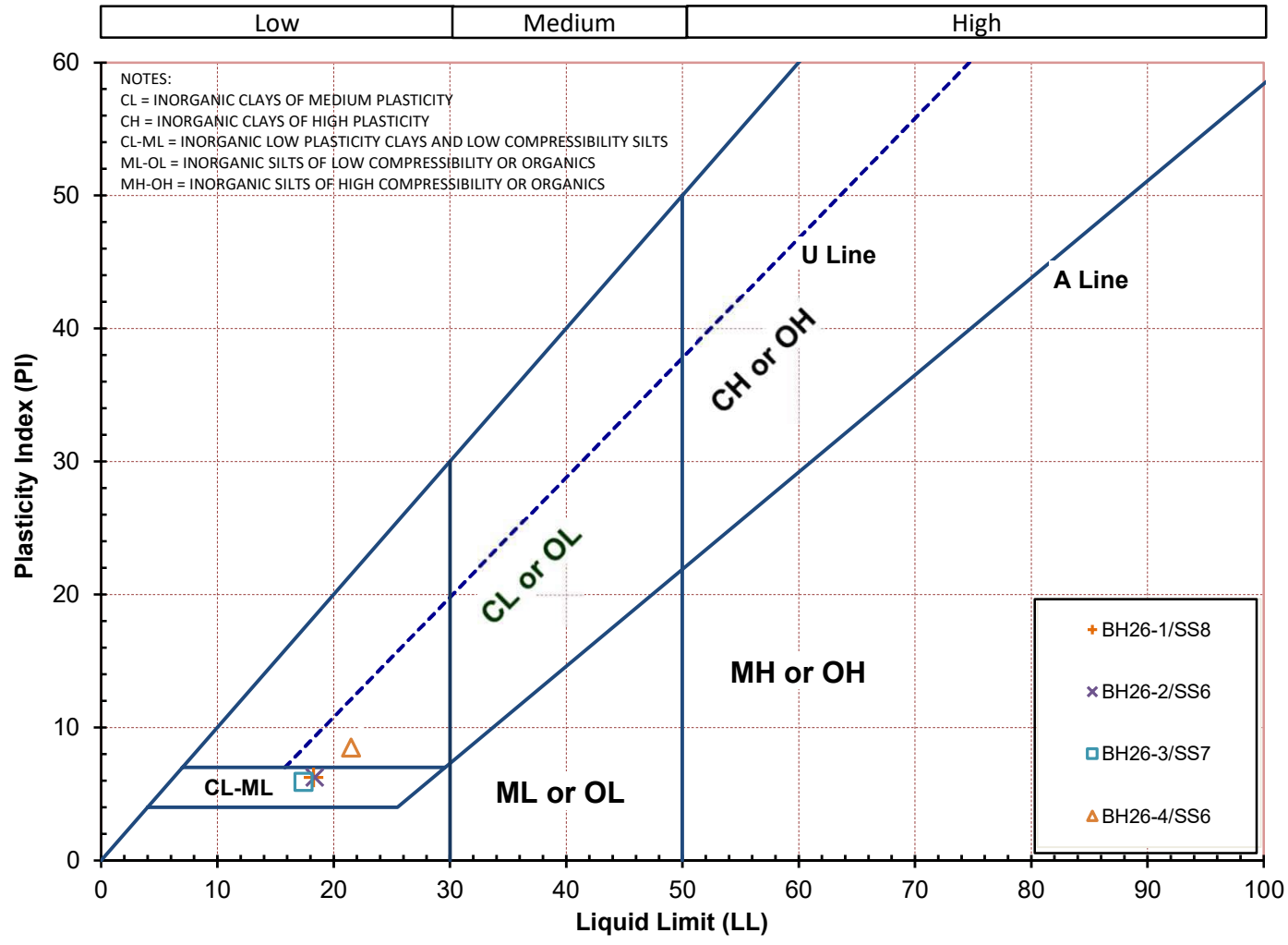
Plasticity Chart

(ASTM D4318-17)

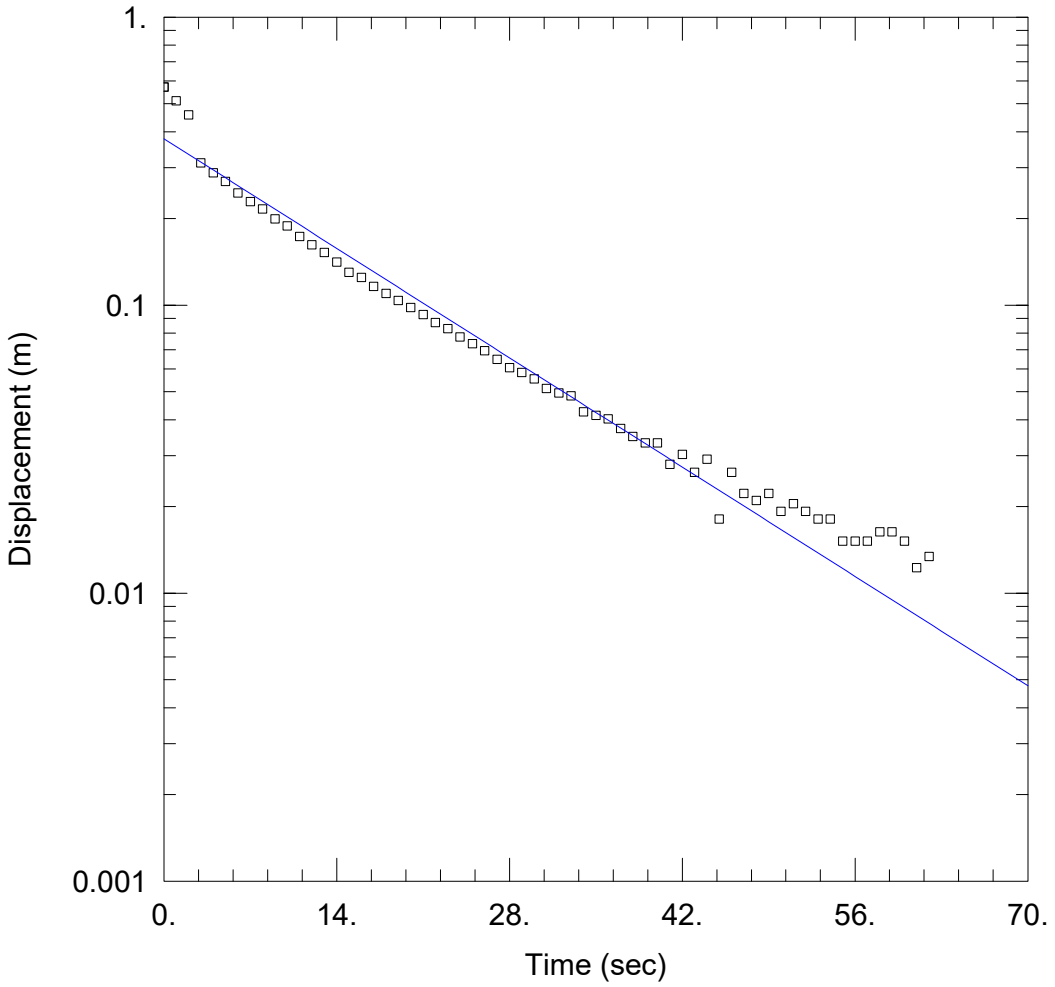
Project No.:	243.024905.00001	Lab No.:	R26-022
Project Name:	12612 Woodbine Ave	Tested By:	BW
Client:	12612 Woodbine (KD) Corp.	Checked By:	OT
Location:	Gromley, Ontario	Date:	5/26/2026

Test Results

Test No	Sample No	LL	PL	PI	Fines	W%	Description	USCS
1	BH26-1/SS8	18	12	6				CL-ML
2	BH26-2/SS6	18	12	6				CL-ML
3	BH26-3/SS7	17	11	6				CL-ML
4	BH26-4/SS6	22	13	9				CL
5								
6								
7								
8								



Appendix D – Slug Test Analysis



WELL TEST ANALYSIS

Data Set: C:\Users\cole_\Desktop\BH26-1 (1of2).aqt
Date: 06/08/26 Time: 12:07:01

PROJECT INFORMATION

Company: SLR
Project: 243.024905.00002
Location: 12612 Woodbine Ave
Test Well: BH26-1
Test Date: 27 May 2026

AQUIFER DATA

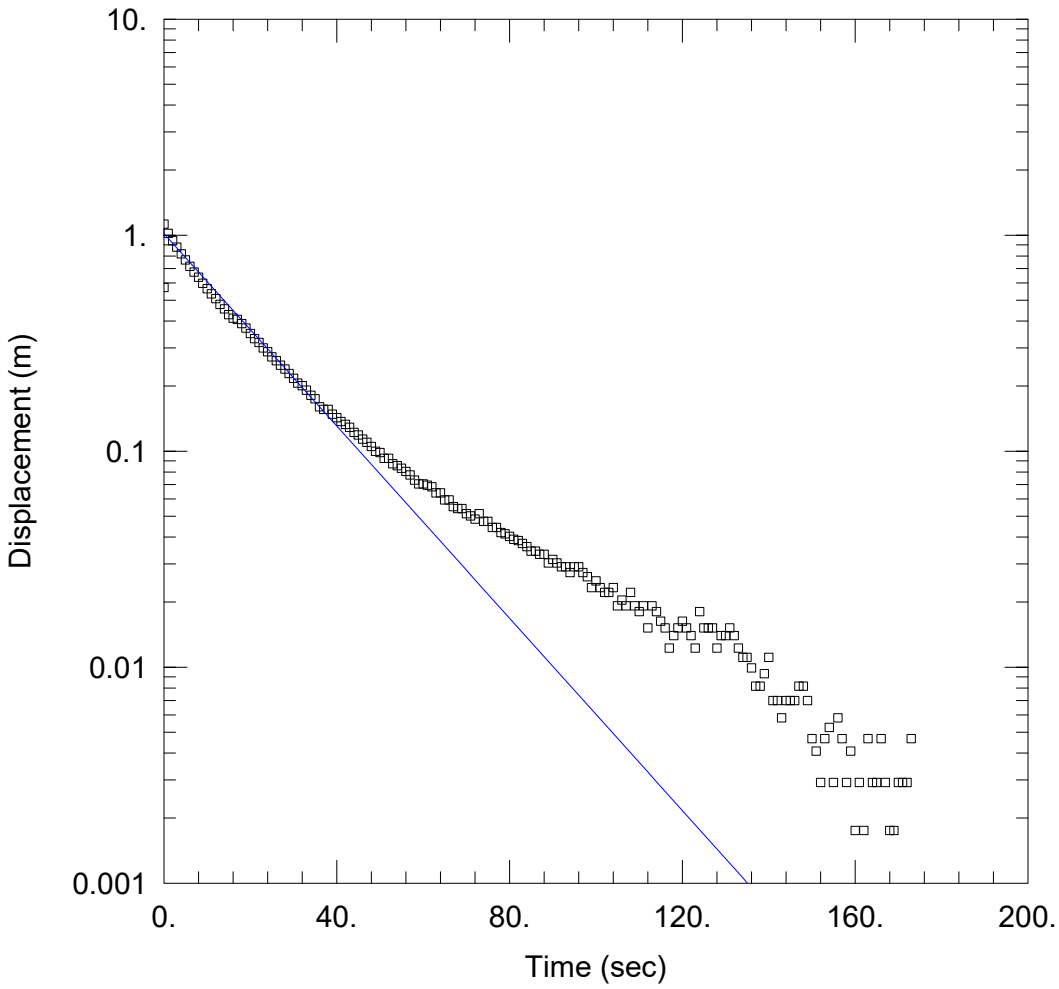
Saturated Thickness: 2.2 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH26-1)

Initial Displacement: 0.5723 m
Total Well Penetration Depth: 10.9 m
Casing Radius: 0.0254 m
Static Water Column Height: 9.81 m
Screen Length: 3. m
Well Radius: 0.0254 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 4.046E-5 m/sec
y0 = 0.378 m



WELL TEST ANALYSIS

Data Set: C:\Users\cole_\Desktop\BH26-1 (2of2).aqt
Date: 06/08/26 Time: 12:13:29

PROJECT INFORMATION

Company: SLR
Project: 243.024905.00002
Location: 12612 Woodbine Ave
Test Well: BH26-1
Test Date: 27 May 2026

AQUIFER DATA

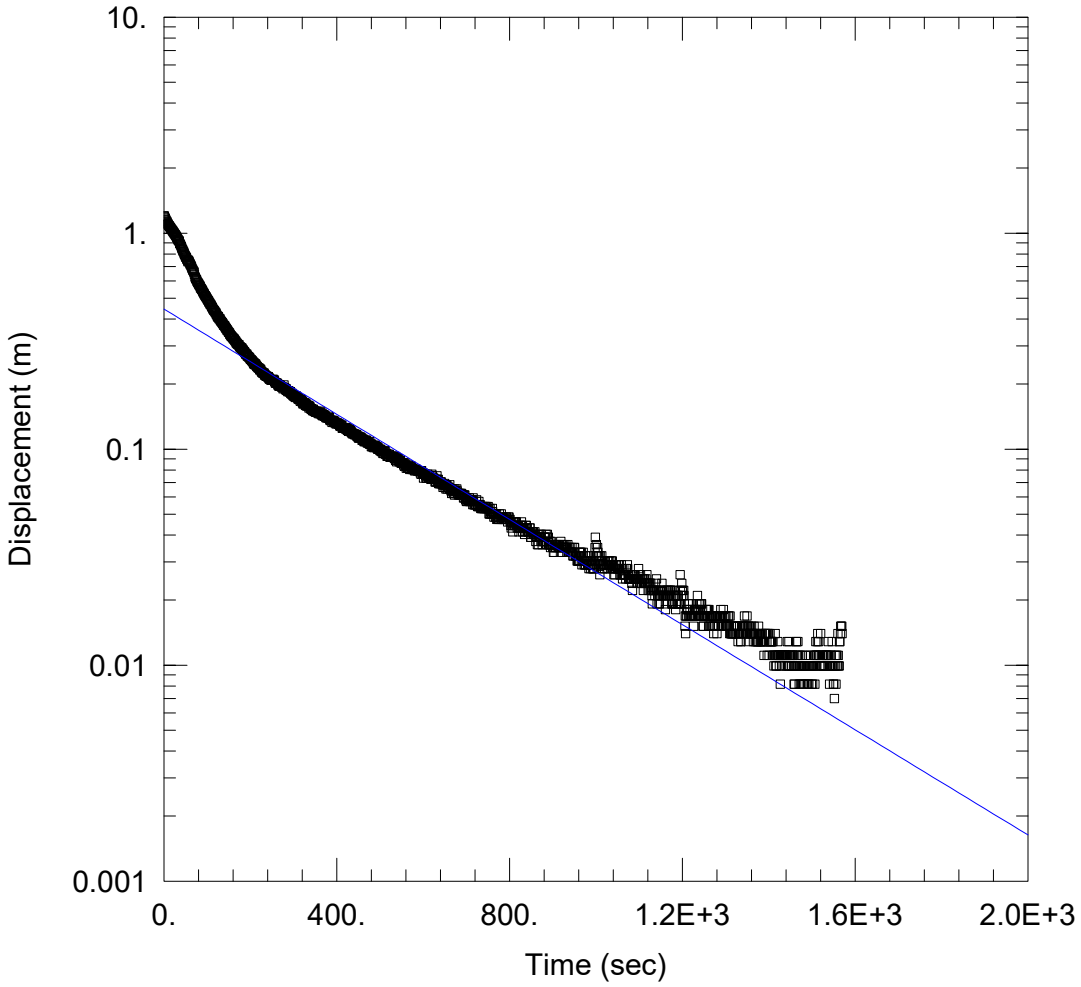
Saturated Thickness: 2.2 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH26-1)

Initial Displacement: 0.5723 m
Total Well Penetration Depth: 10.9 m
Casing Radius: 0.0254 m
Static Water Column Height: 9.81 m
Screen Length: 3. m
Well Radius: 0.0254 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 3.318E-5 m/sec
y0 = 1.016 m



WELL TEST ANALYSIS

Data Set: C:\Users\cole_\Desktop\Woodbine SWRT\BH26-3.aqt
Date: 06/08/26 Time: 12:16:53

PROJECT INFORMATION

Company: SLR
Project: 243.024905.00002
Location: 12612 Woodbine Ave
Test Well: BH26-3
Test Date: 04 June 2026

AQUIFER DATA

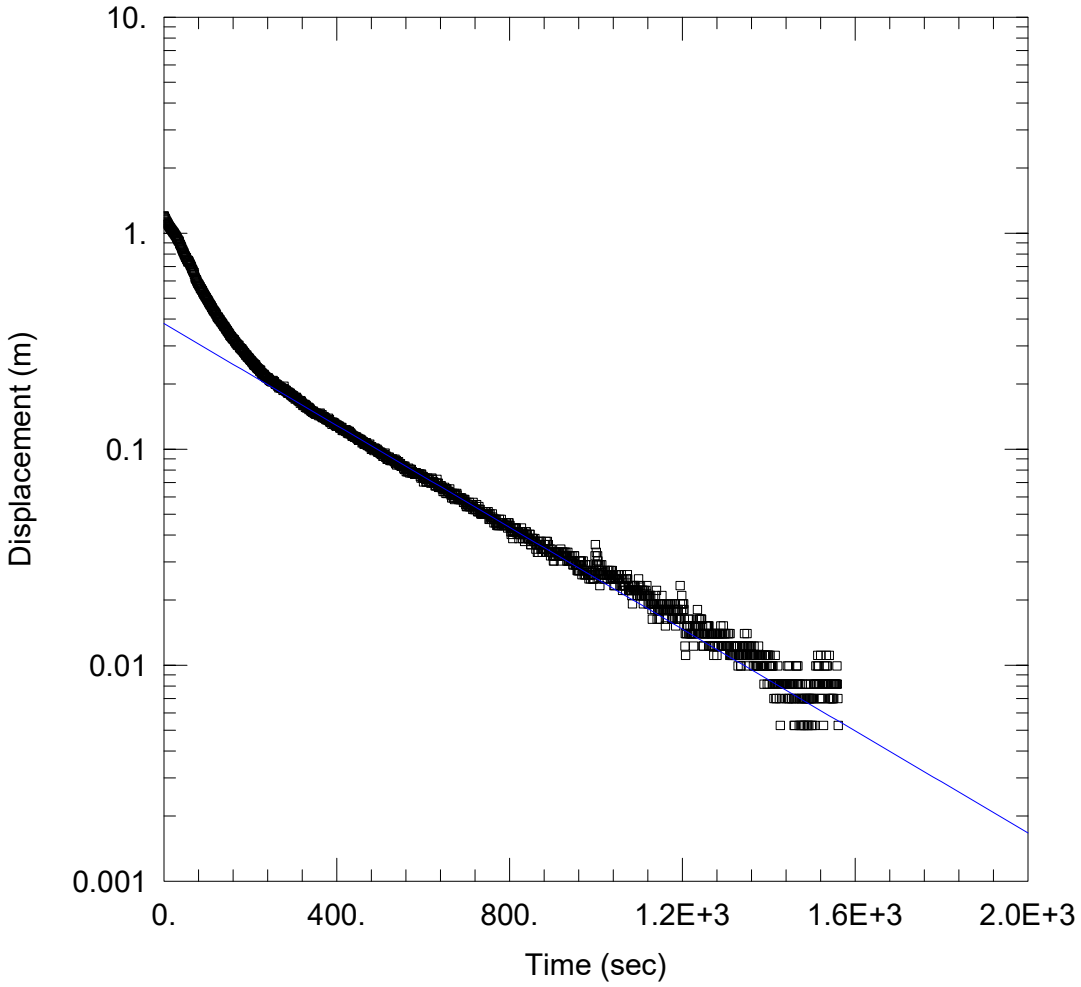
Saturated Thickness: 5.04 m
Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH26-3)

Initial Displacement: 1.202 m
Total Well Penetration Depth: 5.04 m
Casing Radius: 0.0254 m
Static Water Column Height: 5.04 m
Screen Length: 1.5 m
Well Radius: 0.254 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.71E-6 m/sec
y0 = 0.4447 m



WELL TEST ANALYSIS

Data Set: C:\Users\cole_\Desktop\BH26-4.aqt
Date: 06/08/26 Time: 13:02:19

PROJECT INFORMATION

Company: SLR
Project: 243.024905.00002
Location: 12612 Woodbine Ave
Test Well: BH26-4
Test Date: 04 June 2026

AQUIFER DATA

Saturated Thickness: 5.17 m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH26-4)

Initial Displacement: 1.199 m
Total Well Penetration Depth: 5.17 m
Casing Radius: 0.0254 m
Static Water Column Height: 5.17 m
Screen Length: 3. m
Well Radius: 0.0254 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.493E-6 m/sec y0 = 0.3812 m

Appendix E – Groundwater Chemistry

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	:	**WT2614139**			
Amendment	:	**1**			
Client	:	**SLR Consulting (Canada) Ltd.**	Laboratory	:	ALS Environmental - Waterloo
Contact	:	Cole Thompson	Account Manager	:	Andrew Martin
Address	:	871 Equestrian Ct Unit 1 Oakville Ontario Canada L6L 6L7	Address	:	60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	:	----	Telephone	:	+1 519 886 6910
Project	:	243.024905.00002	Date Samples Received	:	27-May-2026 17:45
PO	:	----	Date Analysis Commenced	:	31-May-2026
C-O-C number	:	23-1176907	Issue Date	:	04-Jun-2026 15:35
Sampler	:	----			
Site	:	----			
Quote number	:	Ontario - Palmer/SLR 2025/2026 SOA			
No. of samples received	:	1			
No. of samples analysed	:	1			

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
BH/MW 4 ----	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	352 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	263 mg/L	80 - 100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	107 NTU	5 NTU
	Water	Aluminum, dissolved	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans. The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.	ONDWS	AO/OG	1.05 mg/L	0.1 mg/L
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	1.32 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.0863 mg/L	0.05 mg/L

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key: LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre

>: greater than.
<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).
For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.

Workorder Comments

Amendment (04/June/2026): This report has been amended to include requested guideline(s). All analysis results are as per the previous report.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLUI	Detection Limit Raised: Unknown interference generated an apparent false positive test result.

Analytical Results Evaluation

Matrix: Water			Client sample ID	BH/MW 4 ----	----	----	----	----	----	----
			Client sampling date / time	27-May-2026 00:00	----	----	----	----	----	----
			Sub-Matrix	Groundwater	----	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	WT2614139-001	----	----	----	----	----	----
				Result	----	----	----	----	----	----
Physical Tests										
Alkalinity, total (as CaCO3)	----	E290/WT	mg/L	254	----	----	----	----	----	----
Colour, apparent	----	E330/WT	CU	352	----	----	----	----	----	----
Conductivity	----	E100/WT	µS/cm	419	----	----	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/WT	mg/L	263	----	----	----	----	----	----
pH	----	E108/WT	pH units	8.31	----	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/WT	mg/L	284 DLDS	----	----	----	----	----	----
Turbidity	----	E121/WT	NTU	107	----	----	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	mg/L	0.232	----	----	----	----	----	----
Chloride	16887-00-6	E235.Cl/WT	mg/L	5.20	----	----	----	----	----	----
Fluoride	16984-48-8	E235.F/WT	mg/L	0.173	----	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	mg/L	0.127	----	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	mg/L	<0.010	----	----	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	mg/L	<0.0010	----	----	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	mg/L	14.9	----	----	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	mg/L	1.05	----	----	----	----	----	----
Antimony, dissolved	7440-36-0	E421/WT	mg/L	0.00040	----	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/WT	mg/L	0.00141	----	----	----	----	----	----

Matrix: Water				Client sample ID	BH/MW 4 ----	----	----	----	----	----	----
				Client sampling date / time	27-May-2026 00:00	----	----	----	----	----	----
				Sub-Matrix	Groundwater	----	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit		WT2614139-001	----	----	----	----	----	----
					Result	----	----	----	----	----	----
Dissolved Metals											
Barium, dissolved	7440-39-3	E421/WT	mg/L		0.153	----	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/WT	mg/L		0.000054	----	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/WT	mg/L		<0.000050	----	----	----	----	----	----
Boron, dissolved	7440-42-8	E421/WT	mg/L		0.048	----	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/WT	mg/L		0.0000932	----	----	----	----	----	----
Calcium, dissolved	7440-70-2	E421/WT	mg/L		68.2	----	----	----	----	----	----
Cesium, dissolved	7440-46-2	E421/WT	mg/L		0.000094	----	----	----	----	----	----
Chromium, dissolved	7440-47-3	E421/WT	mg/L		0.00197	----	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/WT	mg/L		0.00088	----	----	----	----	----	----
Copper, dissolved	7440-50-8	E421/WT	mg/L		0.00917	----	----	----	----	----	----
Iron, dissolved	7439-89-6	E421/WT	mg/L		1.32	----	----	----	----	----	----
Lead, dissolved	7439-92-1	E421/WT	mg/L		0.00172	----	----	----	----	----	----
Lithium, dissolved	7439-93-2	E421/WT	mg/L		0.0158	----	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/WT	mg/L		22.6	----	----	----	----	----	----
Manganese, dissolved	7439-96-5	E421/WT	mg/L		0.0863	----	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/WT	mg/L		0.00609	----	----	----	----	----	----
Nickel, dissolved	7440-02-0	E421/WT	mg/L		0.00283	----	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/WT	mg/L		0.106	----	----	----	----	----	----
Potassium, dissolved	7440-09-7	E421/WT	mg/L		5.65	----	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/WT	mg/L		0.00370	----	----	----	----	----	----

Matrix: Water

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	BH/MW 4 ----	----	----	----	----	----	----
				Client sampling date / time	27-May-2026 00:00	----	----	----	----	----	----
				Sub-Matrix	Groundwater	----	----	----	----	----	----
					WT2614139-001	----	----	----	----	----	----
					Result	----	----	----	----	----	----
Dissolved Metals											
Selenium, dissolved	7782-49-2	E421/WT	mg/L		0.000074	----	----	----	----	----	----
Silicon, dissolved	7440-21-3	E421/WT	mg/L		15.9	----	----	----	----	----	----
Silver, dissolved	7440-22-4	E421/WT	mg/L		<0.000010	----	----	----	----	----	----
Sodium, dissolved	7440-23-5	E421/WT	mg/L		10.1	----	----	----	----	----	----
Strontium, dissolved	7440-24-6	E421/WT	mg/L		0.369	----	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/WT	mg/L		5.27	----	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/WT	mg/L		<0.00020	----	----	----	----	----	----
Thallium, dissolved	7440-28-0	E421/WT	mg/L		0.000015	----	----	----	----	----	----
Thorium, dissolved	7440-29-1	E421/WT	mg/L		<0.00020 DLUI	----	----	----	----	----	----
Tin, dissolved	7440-31-5	E421/WT	mg/L		0.00407	----	----	----	----	----	----
Titanium, dissolved	7440-32-6	E421/WT	mg/L		0.0505	----	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/WT	mg/L		0.00017	----	----	----	----	----	----
Uranium, dissolved	7440-61-1	E421/WT	mg/L		0.000324	----	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/WT	mg/L		0.00254	----	----	----	----	----	----
Zinc, dissolved	7440-66-6	E421/WT	mg/L		0.0240	----	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/WT	mg/L		0.00060	----	----	----	----	----	----
Dissolved metals filtration location	----	EP421/WT	-		Field	----	----	----	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Summary of Guideline Limits

Analyte	CAS Number	Unit	ONDWS AO/OG	ONDWS MAC					
Physical Tests									
Alkalinity, total (as CaCO3)		mg/L	**30 - 500 mg/L**	----	----	----	----	----	----
Colour, apparent		CU	**5 CU**	----	----	----	----	----	----
Conductivity	----	µS/cm	----	----	----	----	----	----	----
Hardness (as CaCO3), dissolved	----	mg/L	**80 - 100 mg/L**	----	----	----	----	----	----
pH	----	pH units	**6.5 - 8.5 pH units**	----	----	----	----	----	----
Solids, total dissolved [TDS]		mg/L	**500 mg/L**	----	----	----	----	----	----
Turbidity	----	NTU	**5 NTU**	----	----	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	mg/L	----	----	----	----	----	----	----
Chloride	16887-00-6	mg/L	**250 mg/L**	----	----	----	----	----	----
Fluoride	16984-48-8	mg/L	----	**1.5 mg/L**	----	----	----	----	----
Nitrate (as N)	14797-55-8	mg/L	----	**10 mg/L**	----	----	----	----	----
Nitrite (as N)	14797-65-0	mg/L	----	**1 mg/L**	----	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	mg/L	----	----	----	----	----	----	----
Sulfate (as SO4)	14808-79-8	mg/L	**500 mg/L**	----	----	----	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	mg/L	**0.1 mg/L**	----	----	----	----	----	----
Antimony, dissolved	7440-36-0	mg/L	----	**0.006 mg/L**	----	----	----	----	----
Arsenic, dissolved	7440-38-2	mg/L	----	**0.01 mg/L**	----	----	----	----	----
Barium, dissolved	7440-39-3	mg/L	----	**1 mg/L**	----	----	----	----	----
Beryllium, dissolved	7440-41-7	mg/L	----	----	----	----	----	----	----
Bismuth, dissolved	7440-69-9	mg/L	----	----	----	----	----	----	----
Boron, dissolved	7440-42-8	mg/L	----	**5 mg/L**	----	----	----	----	----

Cadmium, dissolved	7440-43-9	mg/L	----	**0.005 mg/L**	----	----	----	----	----
Calcium, dissolved	7440-70-2	mg/L	----	----	----	----	----	----	----
Cesium, dissolved	7440-46-2	mg/L	----	----	----	----	----	----	----
Chromium, dissolved	7440-47-3	mg/L	----	**0.05 mg/L**	----	----	----	----	----
Cobalt, dissolved	7440-48-4	mg/L	----	----	----	----	----	----	----
Copper, dissolved	7440-50-8	mg/L	**1 mg/L**	----	----	----	----	----	----
Iron, dissolved	7439-89-6	mg/L	**0.3 mg/L**	----	----	----	----	----	----
Lead, dissolved	7439-92-1	mg/L	----	**0.01 mg/L**	----	----	----	----	----
Lithium, dissolved	7439-93-2	mg/L	----	----	----	----	----	----	----
Magnesium, dissolved	7439-95-4	mg/L	----	----	----	----	----	----	----
Manganese, dissolved	7439-96-5	mg/L	**0.05 mg/L**	----	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	mg/L	----	----	----	----	----	----	----
Nickel, dissolved	7440-02-0	mg/L	----	----	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	mg/L	----	----	----	----	----	----	----
Potassium, dissolved	7440-09-7	mg/L	----	----	----	----	----	----	----
Rubidium, dissolved	7440-17-7	mg/L	----	----	----	----	----	----	----
Selenium, dissolved	7782-49-2	mg/L	----	**0.05 mg/L**	----	----	----	----	----
Silicon, dissolved	7440-21-3	mg/L	----	----	----	----	----	----	----
Silver, dissolved	7440-22-4	mg/L	----	----	----	----	----	----	----
Sodium, dissolved	7440-23-5	mg/L	**200 mg/L**	**20 mg/L**	----	----	----	----	----
Strontium, dissolved	7440-24-6	mg/L	----	----	----	----	----	----	----
Sulfur, dissolved	7704-34-9	mg/L	----	----	----	----	----	----	----
Tellurium, dissolved	13494-80-9	mg/L	----	----	----	----	----	----	----
Thallium, dissolved	7440-28-0	mg/L	----	----	----	----	----	----	----
Thorium, dissolved	7440-29-1	mg/L	----	----	----	----	----	----	----
Tin, dissolved	7440-31-5	mg/L	----	----	----	----	----	----	----
Titanium, dissolved	7440-32-6	mg/L	----	----	----	----	----	----	----

Tungsten, dissolved	7440-33-7	mg/L	----	----	----	----	----	----	----
Uranium, dissolved	7440-61-1	mg/L	----	**0.02 mg/L**	----	----	----	----	----
Vanadium, dissolved	7440-62-2	mg/L	----	----	----	----	----	----	----
Zinc, dissolved	7440-66-6	mg/L	**5 mg/L**	----	----	----	----	----	----
Zirconium, dissolved	7440-67-7	mg/L	----	----	----	----	----	----	----
Dissolved metals filtration location	----	-	----	----	----	----	----	----	----

Key:

ONDWS		Ontario Drinking Water Regulation (JAN, 2020)
	AO/OG	Aesthetic Objective/Operational Guideline (2006)
	MAC	Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)

ALS Canada Ltd.

right solutions.
right partner.

Quality Control Interpretive Report

Work Order	: **WT2614139**			
Amendment	: **1**			
Client	: SLR Consulting (Canada) Ltd.	Laboratory	:	ALS Environmental - Waterloo
Contact	: Cole Thompson	Account Manager	:	Andrew Martin
Address	: 871 Equestrian Ct Unit 1 Oakville ON Canada L6L 6L7	Address	:	60 Northland Road, Unit 1 Waterloo Ontario Canada N2V 2B8
Telephone	: ----	Telephone	:	+1 519 886 6910
Project	: 243.024905.00002	Date Samples Received	:	27-May-2026 17:45
PO	: ----	Issue Date	:	04-Jun-2026 15:35
C-O-C number	: 23-1176907			
Sampler	: ----			
Site	: ----			
Quote number	: Ontario - Palmer/SLR 2025/2026 SOA			
No. of samples received	: 1			
No. of samples analysed	: 1			

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- Method Blank value outliers occur - please see following pages for full details.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Laboratory Control Sample Duplicate (LCSD) outliers occur
- No Matrix Spike outliers occur.
- No Matrix Spike Duplicate (MSD) outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix :**Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result		Limits	Comment
Method Blank (MB) Values									
Physical Tests	QC-MRG2-2621948-001	----	Conductivity	----	E100	2.0 µS/cm	B	2 µS/cm	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and/or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Water

Evaluation: × = Holding time exceedance; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
						Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence												
Amber glass total (sulfuric acid) [ON MECP]												
BH/MW 4	001	2621295	E298	27-May-2026	31-May-2026	28 days	5 days	✓	01-Jun-2026	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC												
HDPE [ON MECP]												
BH/MW 4	001	2621946	E235.Cl	27-May-2026	01-Jun-2026	28 days	6 days	✓	02-Jun-2026	28 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)												
HDPE [ON MECP]												
BH/MW 4	001	2621951	E378-U	27-May-2026	01-Jun-2026	7 days	6 days	✓	02-Jun-2026	7 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC												
HDPE [ON MECP]												
BH/MW 4	001	2621943	E235.F	27-May-2026	01-Jun-2026	28 days	6 days	✓	02-Jun-2026	28 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC												
HDPE [ON MECP]												
BH/MW 4	001	2621944	E235.NO3	27-May-2026	01-Jun-2026	7 days	6 days	✓	02-Jun-2026	7 days	6 days	✓

Matrix: Water

Evaluation: × = Holding time exceedance; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
						Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC												
HDPE [ON MECP]												
BH/MW 4	001	2621945	E235.NO2	27-May-2026	01-Jun-2026	7 days	6 days	✓	02-Jun-2026	7 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC												
HDPE [ON MECP]												
BH/MW 4	001	2621947	E235.SO4	27-May-2026	01-Jun-2026	28 days	6 days	✓	02-Jun-2026	28 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS												
HDPE dissolved (nitric acid)												
BH/MW 4	001	2622943	E421	27-May-2026	01-Jun-2026	180 days	6 days	✓	02-Jun-2026	180 days	6 days	✓
Physical Tests : Alkalinity Species by Titration												
HDPE [ON MECP]												
BH/MW 4	001	2621948	E290	27-May-2026	01-Jun-2026	14 days	6 days	✓	02-Jun-2026	14 days	7 days	✓
Physical Tests : Colour (Apparent) by Spectrometer												
HDPE [ON MECP]												
BH/MW 4	001	2622272	E330	27-May-2026	----	----	----		01-Jun-2026	48 hrs	130 hrs	× EHT
Physical Tests : Conductivity in Water												
HDPE [ON MECP]												
BH/MW 4	001	2621949	E100	27-May-2026	01-Jun-2026	28 days	6 days	✓	02-Jun-2026	28 days	7 days	✓
Physical Tests : pH by Meter												
HDPE [ON MECP]												
BH/MW 4	001	2621950	E108	27-May-2026	01-Jun-2026	14 days	6 days	✓	02-Jun-2026	14 days	7 days	✓

Matrix: Water

Evaluation: × = Holding time exceedance; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
						Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry												
HDPE [ON MECP]												
BH/MW 4	001	2626988	E162	27-May-2026	----	----	----		03-Jun-2026	7 days	8 days	✓
Physical Tests : Turbidity by Nephelometry												
HDPE [ON MECP]												
BH/MW 4	001	2621925	E121	27-May-2026	----	----	----		01-Jun-2026	48 hrs	128 hrs	× EHT

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: Water

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method / Lab	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Conductivity in Water	E100 / WT	2621949	1	20	5.0	5.0	✓
pH by Meter	E108 / WT	2621950	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121 / WT	2621925	1	20	5.0	5.0	✓
TDS by Gravimetry	E162 / WT	2626988	1	19	5.3	5.0	✓
Chloride in Water by IC	E235.Cl / WT	2621946	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F / WT	2621943	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2 / WT	2621945	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3 / WT	2621944	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4 / WT	2621947	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290 / WT	2621948	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298 / WT	2621295	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330 / WT	2622272	1	19	5.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U / WT	2621951	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421 / WT	2622943	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Conductivity in Water	E100 / WT	2621949	1	20	5.0	5.0	✓
pH by Meter	E108 / WT	2621950	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121 / WT	2621925	1	20	5.0	5.0	✓
TDS by Gravimetry	E162 / WT	2626988	1	19	5.3	5.0	✓
Chloride in Water by IC	E235.Cl / WT	2621946	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F / WT	2621943	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2 / WT	2621945	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3 / WT	2621944	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4 / WT	2621947	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290 / WT	2621948	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298 / WT	2621295	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330 / WT	2622272	1	19	5.3	5.0	✓

Matrix: Water

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method / Lab	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS)							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U / WT	2621951	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421 / WT	2622943	1	20	5.0	5.0	✓
Method Blanks (MB)							
Conductivity in Water	E100 / WT	2621949	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121 / WT	2621925	1	20	5.0	5.0	✓
TDS by Gravimetry	E162 / WT	2626988	1	19	5.3	5.0	✓
Chloride in Water by IC	E235.Cl / WT	2621946	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F / WT	2621943	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2 / WT	2621945	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3 / WT	2621944	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4 / WT	2621947	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290 / WT	2621948	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298 / WT	2621295	1	20	5.0	5.0	✓
Colour (Apparent) by Spectrometer	E330 / WT	2622272	1	19	5.3	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U / WT	2621951	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421 / WT	2622943	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Chloride in Water by IC	E235.Cl / WT	2621946	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F / WT	2621943	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2 / WT	2621945	1	20	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3 / WT	2621944	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4 / WT	2621947	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298 / WT	2621295	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U / WT	2621951	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421 / WT	2622943	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 ALS Environmental - Waterloo	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Chloride in Water by IC	E235.Cl ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Colour (Apparent) by Spectrometer	E330 ALS Environmental - Waterloo	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Conductivity in Water	E100 ALS Environmental - Waterloo	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
Conductivity Screen (Internal Use Only)	ES100 ALS Environmental - Waterloo	Water	APHA 2510 (mod)	Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Waterloo	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Fluoride in Water by IC	E235.F ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Nitrite in Water by IC	E235.NO2 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
TDS by Gravimetry	E162 ALS Environmental - Waterloo	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Turbidity by Nephelometry	E121 ALS Environmental - Waterloo	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
Preparation Methods	***Method / Lab***	***Matrix***	***Method Reference***	***Method Descriptions***
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Autotitrator	EP108-TITR ALS Environmental - Waterloo	Water		Sample preparation for parameters analysed by Autotitrator
Preparation for Ion Chromatography	EP235-IC ALS Environmental - Waterloo	Water		Sample preparation for ion chromatography
Preparation for Orthophosphate	EP378-PO4 ALS Environmental - Waterloo	Water	APHA 4500-P E (mod)	Sample preparation for orthophosphate analysis

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **WT2614139**		
Amendment	: **1**		
Client	: SLR Consulting (Canada) Ltd.	Laboratory	: ALS Environmental - Waterloo
Contact	: Cole Thompson	Account Manager	: Andrew Martin
Address	: 871 Equestrian Ct Unit 1 Oakville ON Canada L6L 6L7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: 243.024905.00002	Date Samples Received	: 27-May-2026 17:45
PO	: ----	Date Analysis Commenced	: 01-Jun-2026
C-O-C number	: 23-1176907	Issue Date	: 04-Jun-2026 15:35
Sampler	: ----		
Site	: ----		
Quote number	: Ontario - Palmer/SLR 2025/2026 SOA		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key: Anonymous=Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number=Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO=Data Quality Objective.
LOR=Limit of Reporting (detection limit).
RPD=Relative Percent Difference
# =Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Drinking Water

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests(QC Lot: 2621948)											
WT2614019-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	212	213	0.141 %	20%	---
Physical Tests(QC Lot: 2621949)											
WT2614019-001	Anonymous	Conductivity	----	E100	1.0	µS/cm	572	568	0.702 %	10%	---
Physical Tests(QC Lot: 2621950)											
WT2614019-001	Anonymous	pH	----	E108	0.10	pH units	8.49	8.51	0.235 %	4%	---
Anions and Nutrients(QC Lot: 2621943)											
WT2614019-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.826	0.815	1.32 %	20%	---
Anions and Nutrients(QC Lot: 2621944)											
WT2614019-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.218	0.217	0.504 %	20%	---
Anions and Nutrients(QC Lot: 2621945)											
WT2614019-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	---
Anions and Nutrients(QC Lot: 2621946)											
WT2614019-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	47.6	47.5	0.159 %	20%	---
Anions and Nutrients(QC Lot: 2621947)											
WT2614019-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	33.9	34.0	0.111 %	20%	---
Anions and Nutrients(QC Lot: 2621951)											
WT2614019-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0015	0.0010	0.0004	Diff <2x LOR	---

Sub-Matrix: Groundwater

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests(QC Lot: 2622272)											
CG2606789-014	Anonymous	Colour, apparent	----	E330	2.0	CU	28.9	27.3	5.59 %	20%	---

Sub-Matrix: Water

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests(QC Lot: 2621925)											
WT2613665-001	Anonymous	Turbidity	----	E121	0.10	NTU	2.21	2.41	8.65 %	15%	---

Sub-Matrix: Water

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests(QC Lot: 2626988)											
WT2611425-017	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	434	445	2.39 %	20%	---
Anions and Nutrients(QC Lot: 2621295)											
WT2613908-008	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0223	0.0140	0.0083	Diff <2x LOR	---
Dissolved Metals(QC Lot: 2622943)											
WT2610320-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0012	0.0014	0.0002	Diff <2x LOR	---
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00021	0.00022	0.00001	Diff <2x LOR	---
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.104	0.104	0.197 %	20%	---
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	---
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.680	0.675	0.826 %	20%	---
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000102	0.0000104	0.0000002	Diff <2x LOR	---
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	68.0	68.0	0.0687 %	20%	---
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00026	0.00026	0.000006	Diff <2x LOR	---
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	---
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0209	0.0205	2.17 %	20%	---
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	28.6	28.2	1.27 %	20%	---
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0617	0.0620	0.523 %	20%	---
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0126	0.0126	0.681 %	20%	---
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00069	0.00070	0.000010	Diff <2x LOR	---
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.44	3.43	0.497 %	20%	---
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00104	0.00098	0.00006	Diff <2x LOR	---
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	6.89	6.91	0.359 %	20%	---
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	48.0	47.5	0.971 %	20%	---
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	1.11	1.12	0.936 %	20%	---
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	15.6	15.7	0.647 %	20%	---
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000015	0.000012	0.000002	Diff <2x LOR	---
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---

Sub-Matrix: Water

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals(QC Lot: 2622943)											
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	---
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00164	0.00162	1.57 %	20%	---
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	---
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	---

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests(QC Lot: 2621925)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests(QC Lot: 2621948)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests(QC Lot: 2621949)						
Conductivity	----	E100	1	µS/cm	# 2.0	B
Physical Tests(QC Lot: 2621950)						
pH	----	E108	----	pH units	----	----
Physical Tests(QC Lot: 2622272)						
Colour, apparent	----	E330	2	CU	<2.0	----
Physical Tests(QC Lot: 2626988)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients(QC Lot: 2621295)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients(QC Lot: 2621943)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients(QC Lot: 2621944)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients(QC Lot: 2621945)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients(QC Lot: 2621946)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients(QC Lot: 2621947)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients(QC Lot: 2621951)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Dissolved Metals(QC Lot: 2622943)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals(QC Lot: 2622943)						
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----

Qualifiers

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests(QC Lot: 2621925)									
Turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Physical Tests(QC Lot: 2621948)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	114	85.0	115	----
Physical Tests(QC Lot: 2621949)									
Conductivity	----	E100	1	µS/cm	1409 µS/cm	101	90.0	110	----
Physical Tests(QC Lot: 2621950)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests(QC Lot: 2622272)									
Colour, apparent	----	E330	2	CU	25 CU	95.9	85.0	115	----
Physical Tests(QC Lot: 2626988)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	101	85.0	115	----

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients(QC Lot: 2621295)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.8	85.0	115	----
Anions and Nutrients(QC Lot: 2621943)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	104	90.0	110	----
Anions and Nutrients(QC Lot: 2621944)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients(QC Lot: 2621945)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients(QC Lot: 2621946)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients(QC Lot: 2621947)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients(QC Lot: 2621951)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	100	80.0	120	----
Dissolved Metals(QC Lot: 2622943)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	104	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	102	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	106	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	102	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	103	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	99.1	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	101	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	100	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	102	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	102	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	100	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	100	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	103	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	99.4	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	108	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	103	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	101	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	111	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	99.5	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	99.1	80.0	120	----

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals(QC Lot: 2622943)									
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	104	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	105	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	101	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	97.6	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	95.5	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	99.7	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	101	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	99.6	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	102	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.0002 mg/L	99.5	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	101	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	98.4	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for

Sub-Matrix: Drinking Water

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery (%)		Qualifier
					Concentration	Target	MS	Low	High	
Anions and Nutrients(QC Lot: 2621295)										
WT2613908-008	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.101 mg/L	0.1 mg/L	101	75.0	125	---
Anions and Nutrients(QC Lot: 2621943)										
WT2614019-001	Anonymous	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	---
Anions and Nutrients(QC Lot: 2621944)										
WT2614019-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.61 mg/L	2.5 mg/L	105	75.0	125	---
Anions and Nutrients(QC Lot: 2621945)										
WT2614019-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.541 mg/L	0.5 mg/L	108	75.0	125	---
Anions and Nutrients(QC Lot: 2621946)										
WT2614019-001	Anonymous	Chloride	16887-00-6	E235.Cl	105 mg/L	100 mg/L	105	75.0	125	---

Sub-Matrix: Drinking Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Anions and Nutrients(QC Lot: 2621947)										
WT2614019-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	105 mg/L	100 mg/L	105	75.0	125	---
Anions and Nutrients(QC Lot: 2621951)										
WT2614019-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0192 mg/L	0.0196 mg/L	97.7	70.0	130	---
Dissolved Metals(QC Lot: 2622943)										
WT2610320-007	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	---
		Antimony, dissolved	7440-36-0	E421	0.0552 mg/L	0.05 mg/L	110	70.0	130	---
		Arsenic, dissolved	7440-38-2	E421	0.0605 mg/L	0.05 mg/L	121	70.0	130	---
		Barium, dissolved	7440-39-3	E421	ND	----	ND	70.0	130	---
		Beryllium, dissolved	7440-41-7	E421	0.00533 mg/L	0.005 mg/L	107	70.0	130	---
		Bismuth, dissolved	7440-69-9	E421	0.0451 mg/L	0.05 mg/L	90.3	70.0	130	---
		Boron, dissolved	7440-42-8	E421	ND	----	ND	70.0	130	---
		Cadmium, dissolved	7440-43-9	E421	0.00533 mg/L	0.005 mg/L	107	70.0	130	---
		Calcium, dissolved	7440-70-2	E421	ND	----	ND	70.0	130	---
		Cesium, dissolved	7440-46-2	E421	0.00268 mg/L	0.0025 mg/L	107	70.0	130	---
		Chromium, dissolved	7440-47-3	E421	0.0131 mg/L	0.0125 mg/L	105	70.0	130	---
		Cobalt, dissolved	7440-48-4	E421	0.0125 mg/L	0.0125 mg/L	99.8	70.0	130	---
		Copper, dissolved	7440-50-8	E421	0.0121 mg/L	0.0125 mg/L	97.0	70.0	130	---
		Iron, dissolved	7439-89-6	E421	0.050 mg/L	0.05 mg/L	100	70.0	130	---
		Lead, dissolved	7439-92-1	E421	0.0253 mg/L	0.025 mg/L	101	70.0	130	---
		Lithium, dissolved	7439-93-2	E421	0.0121 mg/L	0.0125 mg/L	96.6	70.0	130	---
		Magnesium, dissolved	7439-95-4	E421	ND	----	ND	70.0	130	---
		Manganese, dissolved	7439-96-5	E421	0.0122 mg/L	0.0125 mg/L	97.9	70.0	130	---
		Molybdenum, dissolved	7439-98-7	E421	ND	----	ND	70.0	130	---
		Nickel, dissolved	7440-02-0	E421	0.0244 mg/L	0.025 mg/L	97.5	70.0	130	---
		Phosphorus, dissolved	7723-14-0	E421	0.600 mg/L	0.5 mg/L	120	70.0	130	---
		Potassium, dissolved	7440-09-7	E421	2.54 mg/L	2.5 mg/L	102	70.0	130	---
		Rubidium, dissolved	7440-17-7	E421	0.00495 mg/L	0.005 mg/L	99.0	70.0	130	---
		Selenium, dissolved	7782-49-2	E421	0.0641 mg/L	0.05 mg/L	128	70.0	130	---
		Silicon, dissolved	7440-21-3	E421	ND	----	ND	70.0	130	---
		Silver, dissolved	7440-22-4	E421	0.00383 mg/L	0.005 mg/L	76.5	70.0	130	---
		Sodium, dissolved	7440-23-5	E421	ND	----	ND	70.0	130	---
		Strontium, dissolved	7440-24-6	E421	ND	----	ND	70.0	130	---
		Sulfur, dissolved	7704-34-9	E421	ND	----	ND	70.0	130	---
		Tellurium, dissolved	13494-80-9	E421	0.00568 mg/L	0.005 mg/L	114	70.0	130	---
		Thallium, dissolved	7440-28-0	E421	0.0509 mg/L	0.05 mg/L	102	70.0	130	---
		Thorium, dissolved	7440-29-1	E421	0.00491 mg/L	0.005 mg/L	98.2	70.0	130	---
		Tin, dissolved	7440-31-5	E421	0.0261 mg/L	0.025 mg/L	104	70.0	130	---

Sub-Matrix: **Drinking Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Dissolved Metals(QC Lot: 2622943)										
		Titanium, dissolved	7440-32-6	E421	0.0128 mg/L	0.0125 mg/L	102	70.0	130	---
		Tungsten, dissolved	7440-33-7	E421	0.00526 mg/L	0.005 mg/L	105	70.0	130	---
		Uranium, dissolved	7440-61-1	E421	ND	----	ND	70.0	130	---
		Vanadium, dissolved	7440-62-2	E421	0.0266 mg/L	0.025 mg/L	106	70.0	130	---
		Zinc, dissolved	7440-66-6	E421	0.0261 mg/L	0.025 mg/L	104	70.0	130	---
		Zirconium, dissolved	7440-67-7	E421	0.00530 mg/L	0.005 mg/L	106	70.0	130	---

MM-078 GC-202
N-936

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 23 - 117690

Page 1 of 1

Environmen... Waterloo

Work Order Referen...
WT2614139

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	SLR
Contact:	Cole Thompson
Phone:	905 717 7412
Company address below will appear on the final report	
Street:	927 Equitable Way
City/Province:	Etobicoke
Postal Code:	
Invoice To	Same as Report To ☐ YES ☒ NO
	Copy of Invoice with Report ☐ YES ☒ NO
Company:	SLR
Contact:	Accounting

Reports / Recipients	
Select Report Format:	☒ PDF ☒ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☐ YES ☒ NO ☐ N/A
☒ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	Cole.Thompson@SLRConsulting
Email 2	
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	Accounting@SLRConsulting
Email 2	

Turnaround Time (TAT) Requested
☒ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.
Additional fees may apply to rush requests on weekend
Date and Time Required for all E&P TATs:
For all tests with rush TATs requested, please

Project Information	
ALS Client Code / QUOTE #:	
Job / Project #:	243.024905.0000 2
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): WT2614139 09

ALS Contact: Accounting Martin

Sampler: Cole Thompson

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	P Gen Chem 1	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	BH/MW 4	27/05/2026	12:00	GW	3	x			

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☒ NO	PW QC - dissolved Metals
Are samples for human consumption/ use? ☐ YES ☒ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☑ ICE PACKS ☐ FROZEN ☑ COOLING INITIATED

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
28.9				20.8			

SHIPMENT RELEASE (client use)		
Released by: Cole Thom	Date: 27/05/2026	Time: 16:20

INITIAL SHIPMENT RECEPTION (ALS use only)		
Received by: DN	Date: May 27/26	Time: 19:20

FINAL SHIPMENT RECEPTION (ALS use only)		
Received by: BM	Date: 27/05/26	Time: 17:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

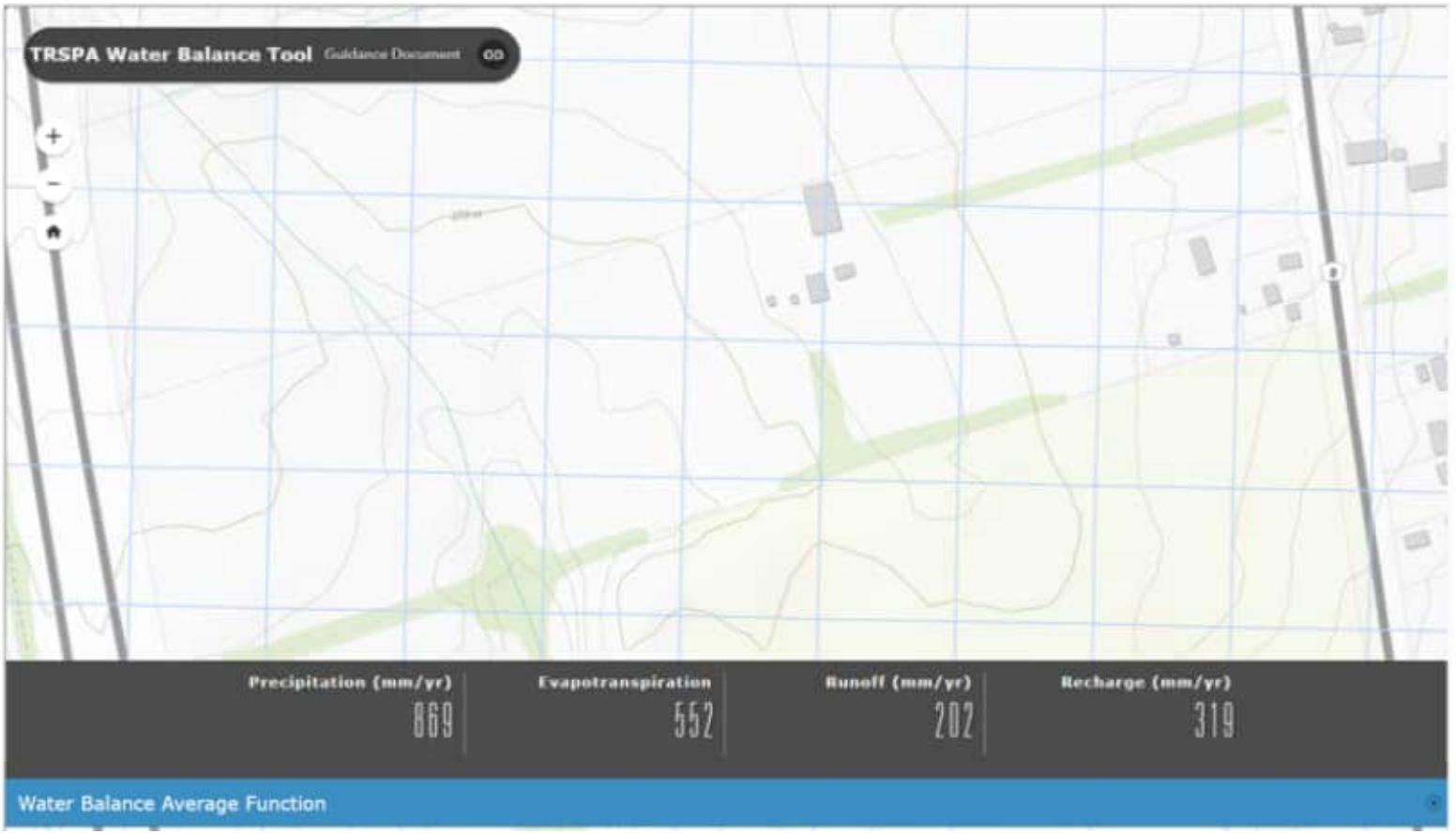
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

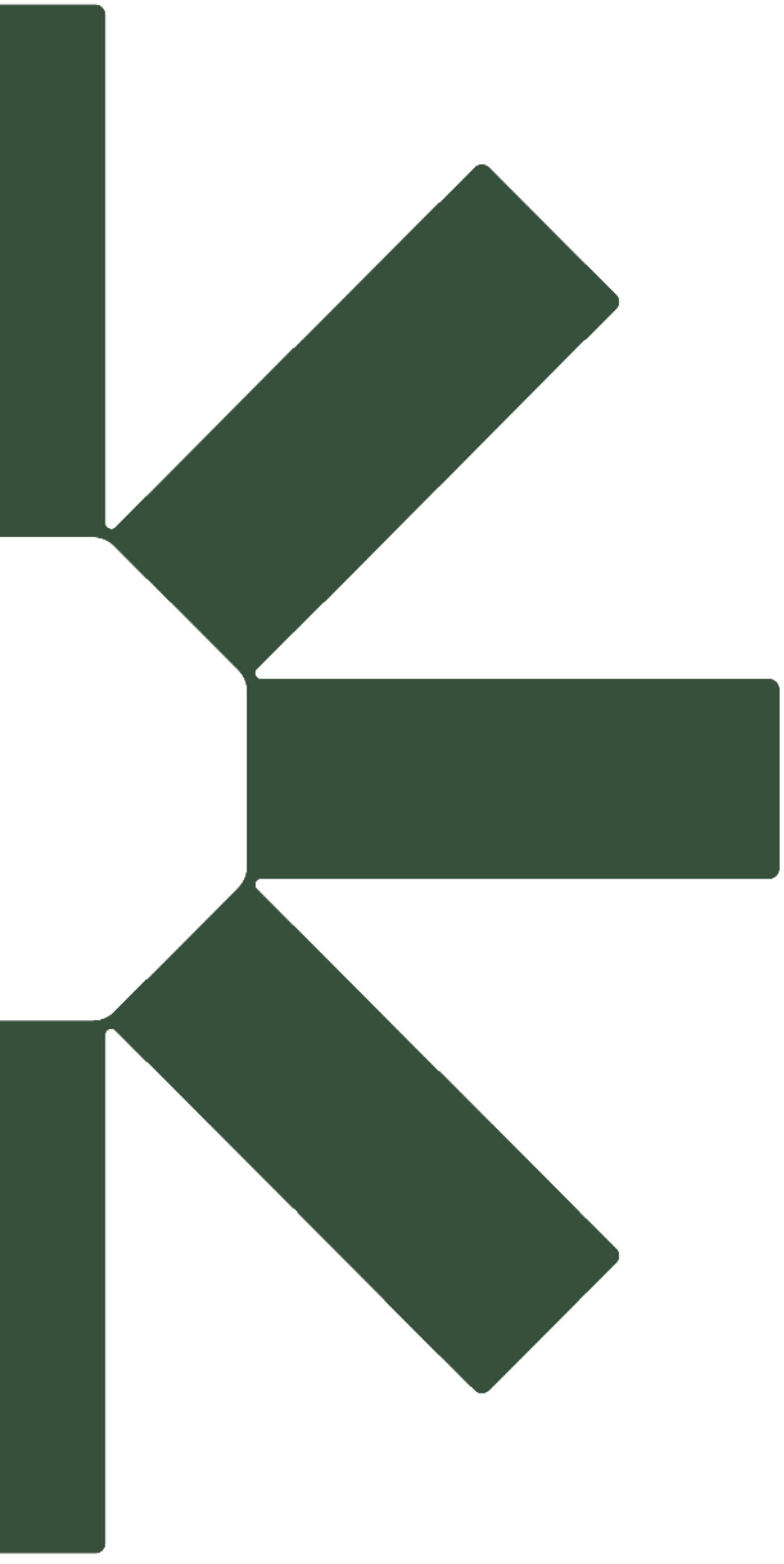
1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

MW 2023 FRONT

Appendix F – TRSPA Water Balance Tool Output


TRSPA Water Balance Tool
Guidance Document
Precipitation (mm/yr)
869
Evapotranspiration
552
Runoff (mm/yr)
202
Recharge (mm/yr)
319
Water Balance Average Function



Making Sustainability Happen