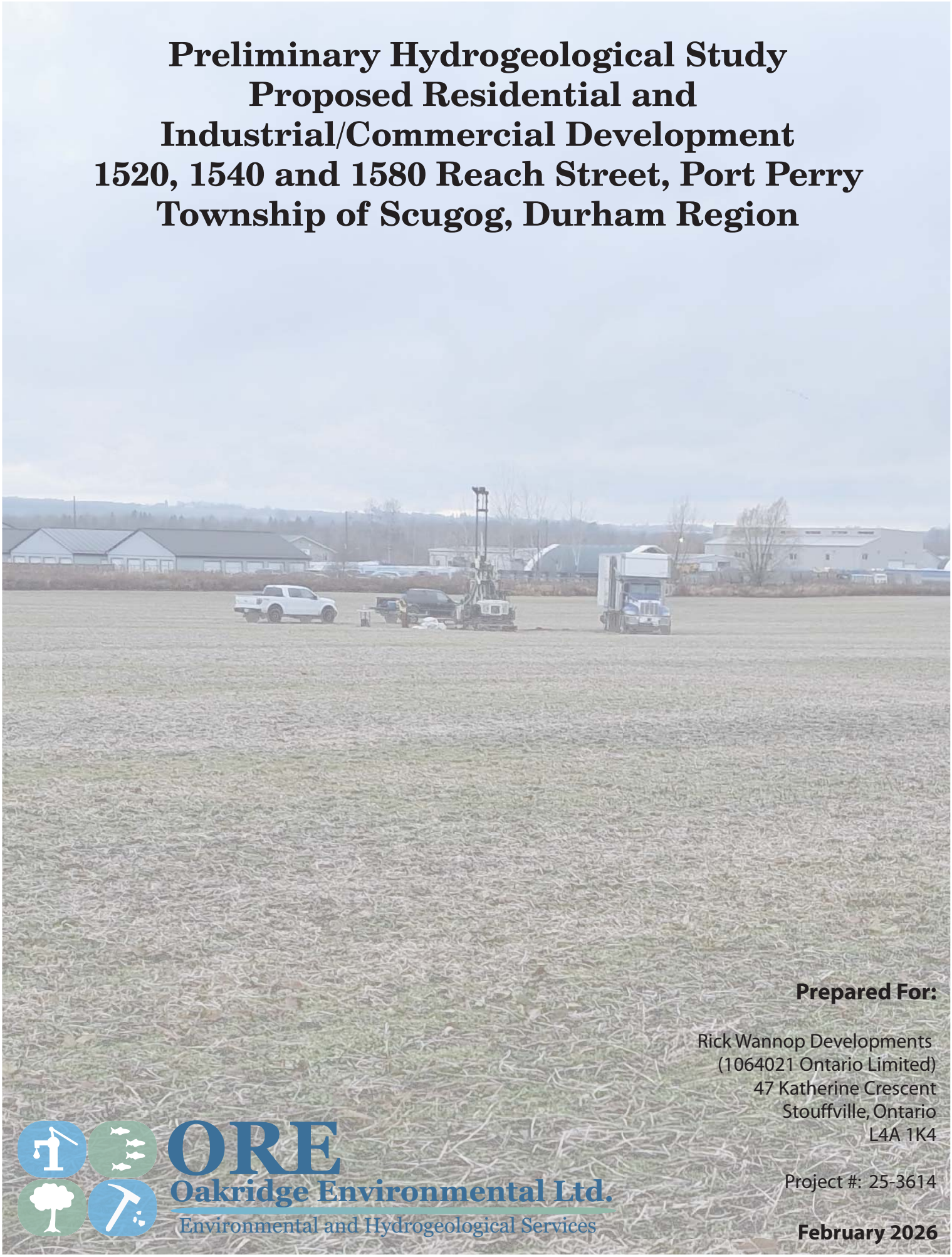
Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry
Township of Scugog, Durham Region



Prepared For:

Rick Wannop Developments
(1064021 Ontario Limited)
47 Katherine Crescent
Stouffville, Ontario
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Project #: 25-3614

February 2026

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

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February 12, 2026

Rick Wannop Developments (1064021 Ontario Limited)
47 Katherine Crescent
Stouffville, Ontario
L4A 1K4

Attention: **Richard (Rick) Wannop**, Owner

Re: Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry
Township of Scugog, Durham Region
ORE File No. 25-3614

Dear Mr. Wannop:

In accordance with our revised proposal October 30, 2025, we are pleased to present our report in support of the above-referenced development project.

As you will see, our investigations have not identified any hydrogeological constraints that would significantly limit the proposed development. Recommendations are provided herein with respect to construction dewatering, maintaining the site's natural water balance, stormwater management, and legacy servicing.

Should you have any questions, please contact our office.

Yours truly
Oakrige Environmental Ltd.

Brian R. King, P. Geo.

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Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry
Township of Scugog, Durham Region

1.0 Introduction

1.1 General

Oakridge Environmental Ltd. (ORE), was retained by the Applicant, Rick Wannop Developments (1064021 Ontario Limited), to conduct a hydrogeological study of the above referenced development site in Port Perry, in accordance with the requirements outlined by the Township of Scugog's Pre-consultation letter of March 4, 2025 (Appendix A). The letter includes the requirements of other agencies consulted.

From the Township's list of requirements, our hydrogeological report is intended to address the following, to support the application:

- All existing private sewage systems be properly abandoned as per best management practices (requested by Durham Region Health Dept.);
- All existing private water wells be abandoned as per Ministry of the Environment's Regulation 903: Water wells (requested by Durham Region Health Dept.), and
- Preliminary Hydrological Study and Water Balance Report (requested by Township of Scugog - Engineering).

In addition, our hydrogeological study presents information that may be useful to other Project Team members in their assessments, including stormwater management.

We are also providing (under separate cover), reports that address the following related matters:

- D-4 Land Use on or Near Landfills and Dumps Study (requested by Township of Scugog - Planning);
- Excess Soil Management (requested by Township of Scugog - Planning), and
- A Site Screening Questionnaire (SSQ) or an RSC compliance Phase 1 Environmental Site Assessment Report.

The location of the proposed development site is illustrated on Figure 1.

1.2 Scope of Work

In conducting the hydrogeological study, the following general tasks were completed:

- Compilation and review of background information;
- Preparation of a geo-referenced base plan;
- Arrange public and private subsurface utility locates;
- Conduct site inspections and shallow (manual) soils investigations and permeameter tests;
- Mobilization of auger drill rig to advance a series of boreholes and construct monitoring wells about the site (data shared with geotechnical engineer);
- Selection of soil samples for grain size distribution and other physical tests;
- Mapping of site features (including borehole and well locations) utilizing a Stonex S900A GPS, capable of achieving a relative accuracy of 1 cm in ideal conditions;
- Collection of combustible gas measurements in all accessible subsurface locations (boreholes, wells, standpipes, etc.);
- Collection of groundwater samples for laboratory analyses (to assess Sewer-Use By-law compliance);
- Development and single well (falling or rising head) testing to determine hydraulic conductivities;
- Preparation of borehole/well logs;
- Programming and installation of data logging pressure transducers ("dataloggers") to record water level variations in the monitoring wells;
- Preparation of technical illustrations;
- Data interpretation, and report preparation.

1.3 Proposed Development

The proposed development site comprises a total of ~63.88 ha (~157.8 acres), situated within three parcels with civic addresses 1520, 1540 and 1580 Reach Street (Port Perry), on Part of Lots 15 & 16, Concession 8, Township of Scugog. The development site fronts onto Reach Street which follows the northern property boundary.

The Site is proposed to be developed in two (2) parts, consisting of a 42.3 ha residential ("Community") area in the eastern approximately two thirds and a 21.58 ha industrial/ commercial ("Employment") area to the west.

Based on the preliminary conceptual plan as provided by Malone Given Parsons, dated September 24, 2024[1], the residential component will include approximately 777 units of various densities. The industrial/commercial area will have about 15.46 ha available for those uses (by Plan of Subdivision) and will also include a stormwater management facility. Both development areas include some set-aside areas to accommodate natural heritage features.

It is understood that the proposed developments will be serviced for potable water and wastewater by connecting to the municipal systems. As such, this study does not include any assessment of water supply or wastewater treatment/disposal.

A copy of the preliminary Conceptual Development Plan is presented in Appendix B. In addition, the grading plan provided by Sabourin Kimble & Associates Ltd. (SKA) has been included in Appendix B.

1.4 Previous Work

In late 1990[2], a large part of the current subject Site (i.e., 41.4 ha), comprising roughly the lands currently proposed for the industrial/commercial development plus the western half of the proposed residential development, was the subject of an initial, preliminary review of hydrogeological conditions by Gibson & Associates Ltd. (GAL). In the absence of municipal services (at that time), the investigation was intended to assess private groundwater supply and private sewage treatment to support development. However, the initial report focussed on the potential for groundwater impact associated with septic effluent, as this was viewed as the principal constraint on development density. The water supply component of the investigation was to be completed at a later time.

It should be noted that the impact assessment completed in 1990/1991 pre-dates the currently applicable Ministry of the Environment, Conservation and Parks' (MECP's) Procedure D-5-4 which came into effect in 1996. Moreover, private servicing is no longer contemplated. As such, the impact assessment is not applicable to the current development application, which will be municipally serviced. Regardless, the geological descriptions provided by GAL have been incorporated into our assessment and outlined in a later section of this report.

In addition to the above, a report by RWDI Air Inc. (2024) includes historical borehole and well data from an investigation of the former municipal landfill site situated northeast of

[1] While the pre-consultation documents include a conceptual development plan dated February 11, 2025, the resolution is poor and appears to be nearly identical to the referenced plan.

[2] report dated January 16, 1991.

the Site. Boreholes and wells from those investigations cover the former landfill and lands to the west, which are opposite the Site, on the north side of Reach Street. While none of their boreholes occur on the subject Site, the stratigraphic and groundwater data are relevant to our investigations.

2.0 Physical Setting

2.1 Topography, Drainage and Surrounding Use

As illustrated by Figure 2, the Site exhibits approximately 19 m of topographic relief, with the uplands situated in the eastern third, consisting of a drumlin ridge, elongated along its roughly north-south axis. The apex of the drumlin occurs in the south-central part of the Site, extending across the southern boundary.

From the apex, the eastern flank declines about 17 m to a small meandering watercourse feature (referred to as Cawkers Creek) situated on the adjacent property. The watercourse conveys flows northward, eventually to Lake Scugog. In contrast, the western flank of the drumlin exhibits a more gentle decline of approximately 19 m across the rest of the Site, toward the adjacent property, which consists of an existing commercial development, accessed by North Port Road. The axis of the drumlin ridge is a local drainage divide, with flows on the west side eventually reaching the Nonquon River Wetland #7, approximately 400 m to the west of the Site.

There are no *mapped* (channelized) watercourses or wetlands on the subject Site. The closest watercourse is a small tributary feature (Cawkers Creek) that occurs immediately to the east, separating the Site from the nearby residential subdivision along Roseborough Crescent. The watercourse is contained within a dedicated Natural Heritage area, likely preserved as part of the nearby subdivision development, as part of its stormwater management.

A variety of uses surround the subject Site. To the east, land uses are predominantly urban residential (i.e., east of the watercourse and green space). To the south, uses are agricultural opposite the eastern two thirds of the Site, with active farming. To the west and south of the western third of the Site, uses include an industrial/commercial subdivision (employment lands) that are largely built-out. North of the Site (i.e., north of Reach Street), uses include agricultural, a possible small pit operation (to the northwest) and a municipal waste transfer facility (to the northeast).[3] The waste transfer location was formerly a ~7.2 ha landfill site which was closed in 1992. The former landfill is the subject of a separate study accompanying this report.

[3] Scugog Waste Management Facility - 1623 Reach Street.

The subject Site is associated with three (3) addresses. These are 1520, 1540 and 1580 Reach Street. At 1520 and 1580, existing residences and old farm structures (e.g., abandoned silos and/or stone foundations) are present. A residence and a farm shop are located at 1540 Reach Street. A single residential dwelling located at 1552 Reach Street is bordered by the subject Site, but is not included in the proposed development.

2.2 Regional Geology

2.2.1 Bedrock

Published mapping (not illustrated) indicates the Site and surrounding area is underlain by shales of the Whitby Formation. This deeply buried formation consists of a dark grey to black, hard and fissile shale, which has been subdivided into three members (upper, middle and lower) although all members are dominantly shale. The shale is highly fossiliferous, carbonaceous (organic-rich) and can exhibit some hydrocarbon content. The Whitby Shale has been studied for its potential as an oil shale resource in Ontario.

Local well records (e.g., No. 7108816) and associated drift thickness mapping from the Ontario Geological Survey (OGS) suggest that the bedrock occurs below a depth of at least 76 m below the Site. Given that depth, the bedrock is not overly important to the Site's hydrogeology for this study.

2.2.2 Surficial Geology

As illustrated by Figure 3, the Site and surrounding area's surficial geology is dominated by glaciolacustrine deposits, consisting largely of layered sand in the west and layered silt and clay in the east, according to the mapping. These deposits represent the remnants of an ancient period of post-glacial inundation. It is unlikely that there is a sharp contact between the two types, but rather a transitional change from one to the other across the area.

In the centre of the Site and sporadically to the east, elevated areas are comprised of stone-poor, sand and silt till, in drumlinized ridges that are typically oriented with north-south axes. The drumlins are composed of Newmarket Till, a widely recognized regional aquitard. During the post-glacial inundation, some of the drumlins were likely small islands or shoals. The on-site drumlin is mapped as having fluvial terracing around its northern flanks, suggesting a remnant beach or shoreline. Other drumlins in the area appear to be less topographically pronounced, suggesting they were water-covered and eroded at one time.

The soil types described above (as mapped) indicate that there could be a considerable

contrast in permeability, with the more permeable glaciolacustrine soils occupying the eastern part of the site and less permeable soils to the west. In the central part of the site, associated with the main ridge and below the glaciolacustrine deposits, the till forms a low-permeability substrate.

The regional mapping is generally consistent with the findings of GAL (1990/1991), although GAL did not differentiate between the two types of glaciolacustrine deposits, and interpreted some of the sandy (surficial) soils to be aeolian in origin.

2.3 Shallow Soil Conditions

2.3.1 Previous On-Site Shallow Soil Investigations

Briefly, the GAL report presented data representing fifteen test pits excavated about the western two-thirds of the Site, revealing a variable shallow soil stratigraphy.[4] The easternmost part (roughly comprising about half of the current proposed residential area) was described as being dominated by a large drumlin exhibiting a total relief on the order of 20 m. In that part of the site, the uplands consist of a thick deposit of sand and silt till, likely Newmarket Till.

In contrast, the western part of the area explored occurs in a broad, post-glacial lake plain.

The till was found to be overlain by an approximately 1.2 m thick, discontinuous layer of silty sand that covered the western half of the explored area, roughly corresponding to the western side of the now proposed residential development. Several pockets of silt and clay, representing glaciolacustrine deposits were also identified above the till, presumably where the sand was absent, suggesting that the glaciolacustrine silt and clay underlies most, if not all, of the areas of the site with low topographic relief.

For the portion of the Site explored in 1990, GAL conservatively estimated the average infiltration rate to be on the order of 155 mm/yr, which is a moderate rate. This was based on 50.8 mm/yr for those areas exhibiting clay-rich soils at the surface and 203.2 mm/yr for area with sandy soils.

2.3.2 Current Soil Investigations

To explore the subsurface conditions and facilitate groundwater level monitoring, ten (10) small diameter boreholes were advanced (by mechanized drilling) about the site, at the

[4] Although test pit logs were not available, the report provides a description and map of the soils encountered.

locations illustrated by Figure 4.

While the number of boreholes and their locations were determined primarily to satisfy the requirements of the hydrogeological study, the locations and drilling protocols were shared with the project geotechnical engineer in advance of the drilling to ensure the resulting data would be useful for the preliminary geotechnical assessment. It is understood that additional borehole explorations could be required as part of future stages of the geotechnical study, should the subsurface data be insufficient.

Borehole drilling and well construction services were provided by Ace Drilling Services Limited, of Stouffville. Prior to commencing any subsurface investigations, borehole locations were mapped in the field and buried utilities were cleared by Ontario One-Call (public) and a private utility locating service (OnSite Locates Inc.).

The drilling was conducted with a Geoprobe 3126GT rig with a 63.5 kg automatic drop hammer for conducting standard penetration tests (SPTs). The SPTs were completed by driving a 50 mm diameter split-barrel, with the ability to recovery approximately 610 mm of soil. The SPT sampling was completed at pre-determined intervals provided by the geotechnical engineer or at the discretion of the drilling contractor due to the prevailing subsurface conditions. Between SPT samples, both 6.25 inch diameter hollow stem augers and 4.5 inch diameter solid stem augers were utilized to advance the boreholes. Hollow stem augers were typically preferred when installing monitoring wells to screen the depth interval. Additional samples were collected from the auger bit for field identification and to supplement for SPT samples that recovered minimal or no sample.

In addition to the borehole drilling, a series of manual auger probes were advanced about the site to explore the near surface soil conditions between the boreholes and where access was limited. The location of the manual boreholes are plotted on Figure 4.

During the drilling, a continuous log of the formations encountered was maintained in the field. Representative samples were collected for grain size distribution testing and follow-up identification/classification. Headspace combustible gas testing of soil samples was also completed with the test data presented in a summary table included in Appendix D. Representative boreholes were completed as 2" PVC monitoring wells to facilitate groundwater level monitoring, sampling and hydraulic testing (as discussed in a following section).

Borehole/monitoring well, manual auger soil probe logs and historical on-site well records (discussed below) have been presented in Appendix C. Headspace combustible gas measurements have been compiled and are presented in Appendix D.

2.3.3 Shallow Soil Stratigraphy

The subsurface explorations have revealed that the shallow soil stratigraphy is generally consistent with the published geological mapping and is comprised of the following soil types.

i) *Newmarket Till* (ML - SM Type). The till unit occurs as a mixture of silt, sand and clay, with minor fine (angular) gravel and occasional cobbles. Based on tactile examination and the grain size distribution test data, this unit is mostly considered an ML type soil under the Unified Soil Classification System (USCS). However, the upper approximately 3 m (~10 ft) of the till can appear slightly sandier and varies between an SM and ML type soil. The upper till can be differentiated from the lower till by a distinct change in colour from light brown (upper) to grey (lower). Due to the heterogeneity of the till, the hydraulic conductivity of the till can be highly variable, typically occurring between 10^{-3} cm/s and 10^{-6} cm/s[5].

As illustrated by Figure 4, the till is exposed primarily along the central drumlin ridge and sporadically on either side of the feature, where the overlying glaciolacustrine deposits are absent, possibly due to erosion or a greater thickness of the till. This distribution is generally consistent with the findings of GAL (1990/1991) and the published geological mapping (Figure 3).

Near the surface, the manual boreholes revealed that the till exhibits some fissuring, which will enhance its hydraulic conductivity or "*K* value". With depth, the till may exhibit very thin (braided) sand deposits that can also enhance the *K* value and can host an inter-till aquifer.

Along the eastern slope of the drumlin ridge, four (4) prominent erosional scars were noted to occur where the gradient was relatively steep. In these locations there was an abundance of gravel and cobble strewn on the ground surface. It is expected that elevated areas of the ridge that contain a larger percentage of coarser grained materials (within the weathered till) transmit recharge quickly, resulting in a perched water table condition. Where the gradient is steep enough and where there is sufficient coarse grained soils, this results in very brief periods of seasonal discharge (i.e., during the spring freshet period) forming the erosional features.

While some erosion of the slope was noted on the western flank of the drumlin ridge, these appeared to be mostly related to seasonal runoff flows.

[5] As provided by Supplementary Standard SB-6 of the Code and Guide for Sewage Systems (2020).

ii) *Glaciolacustrine sand and silt* (SM-SP Type). This unit occurs on both sides of the drumlin ridge, where the gradient is more subdued. The sand and silt on the site mostly mantles glaciolacustrine silt and clay (discussed below). However, manual auger boreholes in the southeastern corner of the site suggests the sand and silt may directly mantle the Newmarket Till between the drumlin ridge that occurs on the site and another that occurs to the southeast. As a result, the sand and silt southeast of the drumlin ridge occurs within a valley-like feature and may represent the remnants of a post-glacial watercourse or spillway. This valley-like feature now contains Cawkers Creek.

The glaciolacustrine sand and silt occurring east of the drumlin ridge was observed to be up to 1.78 m thick (BH25-6) and varied between an SM and SP type soil, occasionally containing subrounded coarse sand and gravel, especially in the southeastern extent of the site. Lamination (i.e., layering) of the sand and silt was observed, with the percentage of fine grained soils typically increasing with depth (i.e., "fining down").

Similar glaciolacustrine sand and silt was observed to occur west of the drumlin ridge. However, these soils were observed to be somewhat discontinuous west of the ridge, likely due to post-glacial erosion when the area was inundated with glacial meltwater. Regardless, BH25-9 intersected a 1.48 m thick sequence. Grain size distribution analyses (described below) confirmed that the soils are best characterized as an SM-SP type. The resulting hydraulic conductivity of the glaciolacustrine sand and silt is expected to be on the order of 10^{-3} cm/s.

iii) *Glaciolacustrine silt and clay* (CL-ML Type). Similar to the glaciolacustrine soils described above, this unit occurs on both sides of the drumlin ridge and overlies the Newmarket Till. The unit is highly layered and exhibits occasional, very thin, fine sand seams, with very occasional gravel clasts (possible drop-stones). These deposits would have formed when the area was covered by stagnant or slowly moving glacial meltwater.

Grain size distribution analysis of a sample obtained from BH25-6 suggests the soils are best described as an ML type. However, field observations suggest the soils may vary between CL and ML types. The hydraulic conductivity of the clay and silt is expected to be on the order of 10^{-6} cm/s, or less.

Where saturated, these soils were observed to become very soft and were easily penetrated by the drill. While some sand was noted to occur where these soils were saturated, it was difficult to recover the liquified materials.

In addition to our on-site exploration data, borehole logs are available from work completed between 1986 and 2021 on the former landfill site and adjacent lands situated immediately to the north and northeast the subject Site. Logs of those boreholes are consistent with the overall soil stratigraphy observed during our investigations, and provide additional context. In particular, the two closest boreholes/monitoring wells (i.e., "6-1" and "11-1") are helpful for extending stratigraphic relationships northward.

Logs of off-site boreholes/monitoring wells 6-1 and 11-1 are presented in Appendix E. Their locations are included on Figure 4.

In addition, historical monitoring wells were identified in the northwestern extent of the subject site. It is understood (anecdotally) that the wells were constructed to investigate the area for the installation of a potential municipal pumping station. These wells are referred to as MW-1, MW-2, MW-3 and MW-4 and are also illustrated on Figure 4. Limited data about the soils encountered are available on the well record forms obtained from the Ministry of the Environment, Conservation and Parks (MECP) water well information system (WWIS). Copies of the well records were obtained from the well tag numbers and have been included in Appendix C.

Utilizing the on-site borehole data and the interpreted location of boreholes on the neighbouring former landfill site to the north, we have prepared West-to-East and North-to-South cross sections through the Site, as presented in Figures 5 and 6. The localized cross sections illustrate the relationships between the various soil units observed during the explorations.

2.3.4 Grain Size Distribution Analysis

All collected soil samples from the mechanized drilling program were submitted to Doughty Aggregates in Lakefield, Ontario for soil moisture analysis. The results of the analysis have been summarized on the borehole logs presented in Appendix C. Four (4) samples, representing the glaciolacustrine sand/silt, glaciolacustrine silt/clay, sandy till and silt-rich till were also selected for grain size distribution analysis. The data provided by the soils laboratory have been presented in Appendix F.

From the grain size distribution data, the hydraulic conductivity (K) of the native soils was estimated utilizing HydrogeoSieveXL v.2.3 (Devlin, 2015). The HydrogeoSieveXL tool calculates the K from grain size distribution curves using 16 different well established and accepted methods. The tool also provides a ranking system to highlight which methods are most applicable, based on the provided input parameters.

Although the determined K values, especially for heterogeneous mixtures such as till, are considered preliminary, this method provides a valuable and convenient starting point.

The resulting K value calculations are presented in Appendix F and are summarized in a following section.

2.3.5 Permeameter Testing

Field saturated hydraulic conductivity (K_{fs}) testing was conducted utilizing an ETC Pask Permeameter (infiltrometer) unit. The infiltrometer utilizes a constant head pressure to determine the K_{fs} by measuring the rate of fall of the water level in the permeameter reservoir and using the reservoir cross-sectional area to determine the quasi steady water flow rate into the soil. The K_{fs} is derived from equations that relate the measurements to soil texture and other factors that can be estimated visually. The soil percolation rate can be estimated from the K_{fs}.

The in-situ testing of the shallow soils was conducted at the locations indicated on Figure 4. The summary sheets for each test are presented in Appendix F. Where feasible, multiple tests were completed at each location to ensure representative conditions.

The average K_{fs} values determined from the permeameter tests are listed in the following section.

2.3.6 Summary of Shallow Soil Hydraulic Properties

The preceding soil types have been assessed with regard to their interpreted (theoretical) hydraulic conductivity (K) values, percolation rates ("T-times") and infiltration rates, in general accordance with the relationships provided by the Supplementary Guidelines to the Ontario Building Code (Code and Guide for Sewage Systems). Shallow permeameter testing was also conducted to field-measure the infiltration rate at representative locations throughout the Site (Figure 4). The average values for each soil unit are included in Table 1.

Additionally, single-well "slug" tests (falling/rising head) were also conducted on all of the on-site boreholes completed as monitoring wells (following development) and one (1) of the historical monitoring wells, to estimate the hydraulic conductivity of the deeper soils (i.e., typically >3 m depth). The tests were undertaken by measuring the resulting water level changes during and after purging the well, utilizing a small diameter sampling pump. Where feasible, the testing was repeated at each well. The water level changes were recorded by a programmable pressure transducer (datalogger) and the data were analysed.

The test curves and analyses plots are presented in Appendix G. Table 1 (below) provides a summary of the representative hydraulic conductivity (K) values obtained from the

compiled data. Where the pumping test and/or hydraulic test data provided an anomalous response, the estimated *K* value has been omitted.

Table 1 - Summary of Hydraulic Conductivity Estimates

Location	Depth (m)	Method	Hydraulic Conductivity - *K* (cm/s)	Infiltration Rate (mm/hr)
HA25-6	0.53 (Glaciolacustrine Sand)	Permeameter	1.34×10^{-4}	50.0
BH25-9	0.76 to 1.37 (Glaciolacustrine Sand)	Grain Size	5.37×10^{-4}	62.1
HA25-9	0.53 (Glaciolacustrine Sand)	Permeameter	2.79×10^{-4}	55.0
HA25-11	0.53 (Glaciolacustrine Sand)	Permeameter	6.96×10^{-4}	66.5
Glaciolacustrine Sand (Geometric mean):			**3.44×10^{-4}**	**56.8**
MW-1	4.57 to 7.62 (Glaciolacustrine Silt)	Pumping Test (Theis Recovery)	7.18×10^{-3}	126.5
MW-1	4.57 to 7.62 (Glaciolacustrine Silt)	Rising Head (Hvorslev)	1.50×10^{-4}	51.4
MW-1	4.57 to 7.62 (Glaciolacustrine Silt)	Rising Head (Bouwer & Rice)	1.27×10^{-4}	49.3
BH25-6	1.52 to 2.13 (Glaciolacustrine Silt)	Grain Size	2.77×10^{-7}	< 12
BH25-7	3.05 to 3.84 (Glaciolacustrine Silt)	Rising Head (Hvorslev)	5.90×10^{-6}	21.7
BH25-7	3.05 to 3.84 (Glaciolacustrine Silt)	Rising Head (Bouwer & Rice)	4.51×10^{-6}	19.0
BH25-7	3.05 to 3.84 (Glaciolacustrine Silt)	Rising Head (Hvorslev)	1.5×10^{-6}	13.0
BH25-7	3.05 to 3.84 (Glaciolacustrine Silt)	Rising Head (Bouwer & Rice)	1.15×10^{-6}	12.3
Glaciolacustrine Silt (Geometric mean):			**1.43×10^{-5}**	**27.5**
HA25-1	0.50 (Upper Till)	Permeameter	2.03×10^{-4}	52.9
HA25-1	0.56 (Upper Till)	Permeameter	8.45×10^{-5}	44.2
BH25-1	1.52 to 2.13 (Upper Till)	Grain Size	1.81×10^{-3}	81.8
Upper Unsaturated Newmarket Till (Geometric mean):			**3.14×10^{-4}**	**55.9**

Table 1 - Summary of Hydraulic Conductivity Estimates				
Location	**Depth (m)**	**Method**	**Hydraulic Conductivity - *K* (cm/s)**	**Infiltration Rate (mm/hr)**
BH25-2	3.05 to 3.66 (Lower Till)	Grain Size	1.29×10^{-5}	26.7
HA25-3	0.69 (Lower Till)	Permeameter	5.62×10^{-5}	39.7
Lower Unsaturated Newmarket Till (Geometric mean):			**2.69×10^{-5}**	**32.6**
BH25-1	6.32 to 9.37 (Inter-Till Aquifer)	Pumping Test (Cooper-Jacob)	1.37×10^{-5}	27.2
BH25-1	6.32 to 9.37 (Inter-Till Aquifer)	Pumping Test (Theis Recovery)	1.16×10^{-4}	48.1
BH25-1	6.32 to 9.37 (Inter-Till Aquifer)	Rising Head (Hvorslev)	2.43×10^{-4}	54.0
BH25-1	6.32 to 9.37 (Inter-Till Aquifer)	Rising Head (Bouwer & Rice)	2.08×10^{-4}	53.0
BH25-3	2.72 to 5.77 (Inter-Till Aquifer)	Pumping Test (Cooper-Jacob)	7.21×10^{-4}	67.3
BH25-3	2.72 to 5.77 (Inter-Till Aquifer)	Pumping Test (Theis Recovery)	7.51×10^{-3}	129.3
BH25-3	2.72 to 5.77 (Inter-Till Aquifer)	Rising Head (Hvorslev)	8.33×10^{-4}	70.4
BH25-3	2.72 to 5.77 (Inter-Till Aquifer)	Rising Head (Bouwer & Rice)	6.02×10^{-4}	63.9
BH25-4	4.01 to 5.99 (Inter-Till Aquifer)	Pumping Test (Cooper-Jacob)	1.02×10^{-2}	150.3
BH25-4	4.01 to 5.99 (Inter-Till Aquifer)	Pumping Test (Theis Recovery)	2.40×10^{-2}	173.3
BH25-4	4.01 to 5.99 (Inter-Till Aquifer)	Rising Head (Hvorslev)	2.43×10^{-5}	31.7
BH25-5	3.20 to 6.25 (Inter-Till Aquifer)	Pumping Test (Cooper-Jacob)	7.19×10^{-4}	67.2
BH25-5	3.20 to 6.25 (Inter-Till Aquifer)	Pumping Test (Theis Recovery)	2.25×10^{-2}	170.8
BH25-5	3.20 to 6.25 (Inter-Till Aquifer)	Rising Head (Hvorslev)	2.55×10^{-5}	32.1
BH25-5	3.20 to 6.25 (Inter-Till Aquifer)	Rising Head (Bouwer & Rice)	7.29×10^{-5}	42.5
Inter-Till Aquifer (Geometric mean):			**5.0×10^{-4}**	**61.1**

Based on the preceding, it is clear that the hydraulic properties of the soils are variable across the site, generally varying by an order of magnitude (on average), which is not unusual for earth materials.

The estimated bulk hydraulic conductivity of the site (based on a geometric mean of all measured values) is expected to be on the order of 1.52×10^{-4} cm/s, corresponding to an equivalent average infiltration rate of approximately 51.4 mm/hr. As sandy soils dominate the site, it is likely that most of the development will exhibit a slightly higher hydraulic conductivity (K) of about 3×10^{-4} cm/s with a corresponding infiltration rate of about 55 mm/hr.

2.3.7 Combustible Gas Measurements

Following the drilling program, all soil samples were screened for the presence of combustible (headspace) gas utilizing an RKI Eagle Gastector with methane cancelling. The results from the combustible gas readings are summarized in Appendix D.

Generally, the combustible gas concentrations were found to be low (i.e., <200 ppm). Only one (1) sample (from BH25-5) was found to have a slightly elevated concentration, at 310 ppm. Subsequently, that sample (referred to as BH25-5 ~18 ft) was forwarded to an accredited environmental laboratory for analysis of volatile organic compounds (VOCs), as briefly discussed below.

In addition, upon completion of the monitoring wells, headspace testing for combustible gases was conducted in each. The testing was completed with and without methane cancelling. The test data are also presented in Appendix D.

2.3.8 Shallow Soil Quality

During the borehole and auger probe drilling, a total of nine (9) representative in-situ soil samples were collected for chemical laboratory analyses, as part of the Preliminary Excess Soils Site Characterization investigation, prepared under separate cover.

The selection of analytical parameters was informed by the Site's past uses (as per the Rules for Soil Management under O. Reg 406/19, as amended), and included analyses of inorganics, metals, BTEX, Petroleum Hydrocarbons (PHCs, F1-F4), Volatile Organic Compounds (VOCs) and pesticides. All samples were forwarded to Caduceon Environmental Laboratories for analyses. The laboratory certificates are presented in Appendix H.

Briefly, the initial soil quality results indicated that Methylene Chloride

(Dichloromethane) was present in concentrations that exceed the O. Reg. 406/19 Table 1 standard at two (2) separate locations on the site (at BH25-1 and BH25-9). Methylene Chloride is a colourless, odourless solvent that quickly volatilizes in the presence of oxygen. It is also utilized by environmental laboratories in the preparation (chemical extraction) of samples.

Given the distance between boreholes and the absence of any known contaminating activity on the site that could be contributed to the Methylene Chloride occurrence, follow-up soil samples were collected from the general area of BH25-1 and BH25-9 by excavating a test pit and using a manual auger probe. Composite samples were forwarded to Caduceon Environmental Laboratories and were found to have a Methylene Chloride concentration below the laboratory's method detection limit (MDL). As a result, it is expected that the initially reported exceedance was anomalous and not representative.

Despite the elevated combustible headspace gas measurements at BH25-5, all other tested parameters in all samples were found to be below the O. Reg. 406/19 Table 1 limits. As a result, it is expected that excess soils generated by the site will generally be able to meet the O. Reg. 406/19 requirements.

For a more detailed review of excess soil quality (including a detailed examination of the laboratory data), the reader is referred to our accompanying Preliminary Excess Soils Management report.

3.0 Hydrogeology

3.1 Source Water Protection

The subject site falls within the Kawartha-Haliburton Source Water Protection Area. The nearest community water supply and source water protection zone occurs approximately 4.7 km southeast of the subject site, associated with the groundwater supply wells for Port Perry.

From the MECP Source Protection atlas, the site is described as follows:

Source Protection Area:	Kawartha-Haliburton
Wellhead Protection Area:	No
Wellhead Protection Area E (GUDI):	No
Intake Protection Zone:	No
Issue Contributing Area:	No
Significant Groundwater Recharge Area:	Yes, score is 2
Highly Vulnerable Aquifer:	No
Event Based Area:	No

Wellhead Protection Area Q1:	No
Wellhead Protection Area Q2:	No
Intake Protection Zone Q:	No
Information is current as of:	January 30, 2026

The atlas also provides that the nearest PTTW occurs approximately 2.7 km to the southwest, where water is taken from a series of wells for commercial agriculture use.

As a portion of the site is considered to be Significant Recharge Area, Policy Z-1 (2) of the Source Protection Plan provides that development applications comply with the following:

> "*a) maintain pre-development recharge to the greatest extent feasible through best management practices such as LID, minimizing impervious surfaces, and lot level infiltration;*
>
> *b) where pre-development recharge cannot be maintained on site, implement and maximize off-site recharge enhancement (within the same WHPA-Q2) to compensate for any predicted loss of recharge from the development*"

Based on the preceding, this report provides the approximate pre-development water balance. The post-development stormwater management controls should strive to maintain that water balance.

3.2 Historical On-Site Wells

In accordance with the Township of Scugog's Pre-consultation letter of March 4, 2025 (Appendix A), all legacy wells in the Site are to be identified and properly abandoned, as per the requirements of O. Reg 903, as amended. As such, a review of Ministry of the Environment, Conservation and Parks' (MECP's) well record database was conducted to determine whether any legacy wells (remainders from past uses) might be present on the subject Site, or in close proximity.

From the Ministry's on-line portal, nine (9) recorded wells were identified as occurring within the Site's boundaries. These include a variety of historical drilled and bored (domestic) wells, plus a number of more recent geo-environmental/monitoring wells, as summarized in Table 2, below. Although plotting within the Site, one of the wells (No. 7108816) is associated with a property along North Port Drive and is not on-site.

Table 2 - MECP Recorded On-Site Wells				
Well No.	**Type**	**Date Constructed**	**Depth (m)**	**Description**
1908196	Drilled	1986	88.4	Domestic well, identified on-site
4602235	Drilled	1956	54.3	Dry well, not identified on-site
1905186	Bored	1978	4.0	36" diameter well, identified on-site
7473390	Geo	2024	19.8	Tag A394697, 2" Test Hole, NW corner of Site
7473392	Geo	2024	7.6	Tag A394700, 2" Test Hole, NW corner of Site
7473391	Geo	2024	7.6	Tag A394699, 2" Test Hole, NW corner of Site
7481818	n/a	2024	n/a	Tag A391773, NW corner of Site
7473389	Geo	2024	7.6	Tag A394688, 2" Test Hole, NW corner of Site
7108816*	Drilled	2008	78.6	Tag A060346, on North Port Dr (off-site)

* off-site well.

The Site was also thoroughly searched (in the field) for evidence of historical wells. Four (4) legacy (domestic) wells were physically identified on the Site, including one (1) small diameter drilled well and three (3) large diameter (dug/bored) wells. The locations of the observed legacy wells is illustrated on Figure 4.

The identified legacy domestic wells are referred to herein as W-1, W-2, W-3 and W-4, respectively. We interpret W-1 to be MECP (well) No. 1905186 and W-3 to be No. 1908196. W-2 and W-4 do not appear to have corresponding well records that plot on the site and there were no well tags on the wells when they were inspected. It is not uncommon for historical (especially dug) wells to have not been reported, as they often pre-date modern reporting requirements.

In addition to the on-site wells, MECP No. 4602235 is interpreted to belong to a neighbouring residence, at 1552 Reach Street. A well (referred to as W-5) was observed from Reach Street to be in the approximate location indicated on the driller's well record.

As each of the wells are currently being utilized by the residents and were observed to exhibit signs of deterioration, it was not possible to gain access to the wells to obtain measurements.

Among the recorded wells and as provided above, four (4) 2-inch diameter PVC monitoring wells were identified near the Site's northwest corner. It is understood that these were constructed in 2024 as part of an investigation in support of a proposed pumping station. While these wells will eventually need to be properly abandoned in accordance with the Wells Regulation, they are presumably still useful for their original purpose and have also been utilized for our study. As such, these wells should remain in place and be property

maintained until deemed that they are no longer useful.

Recommendations are provided in a following section for the proper decommissioning of the identified wells.

3.3 Regional Aquifer Stratigraphy

As the proposed development will be municipally serviced, there is no need to explore groundwater as a supply source for the development. However, recorded local wells are still of interest to help identify any neighbouring groundwater users who could be affected by the proposed development, identify on-site legacy wells (as discussed above) and to assist in determining the deeper stratigraphy. As such, a review of local MECP Well Records for recorded wells within 1 km of the site has identified a total of 180 wells (Figure 7). A summary of the well record data is provided in Appendix I.

From the recorded well logs and our borehole data (see above), a generalized West-East cross section of the deeper stratigraphy has been prepared (Figure 8). As illustrated, there are three main aquifer systems below the Site. These are:

i) *Shallow Aquifer*. The Shallow Aquifer (SA) occurs mostly within the glaciolacustrine deposits that mantle the Newmarket Till in the study area. On-site, the SA was observed to be present both within the glaciolacustrine deposits and as an inter-till aquifer. The inter-till aquifer was primarily observed on or in close proximity to the drumlin ridge.

   As provided by the well testing outlined above, the hydraulic conductivity (K) of the aquifer can vary depending on the aquifer materials encountered. Similarly, the recharge through these same sediments can also be variable and can strongly influence access to and quality of groundwater available for private wells constructed in the SA. As a result, any private wells that utilize the SA may be sensitive to localized changes in soil/recharge conditions in the upgradient direction. As the bored well (MECP No. 1905186) identified on-site is expected to be abandoned prior to development of the property and in the absence of any other private shallow (dug/bored) wells in close proximity to the subject property, potential *direct* impacts to private wells utilizing the SA are not anticipated.

   Despite the preceding, it is important to recognize that the SA is considered the principal receiver of infiltration/recharge on the Site and is of greatest interest with regard to water balance, potential contaminant transport and construction dewatering. While direct impacts are not anticipated, long-term changes in the recharge conditions can potentially have more far-reaching effects. These subjects are discussed in more detail in subsequent sections of this report.

ii) *Intermediate Aquifer*. The Intermediate Aquifer (IA) is a deeply buried sand (and gravel) layer that occurs in the lower (drift) deposits. These deposits can include interbedded till sheets, glaciolacustrine silts and clays, and glaciofluvial sands and gravels. While the lower drift typically occurs below the Newmarket Till, deep inter-till aquifers appear to be relatively consistent throughout the study area, possibly suggesting periods of glacial retreat and re-advancement. Regardless of the origin, the "lower drift" can contain important regional aquifer systems.

An example well that taps this aquifer is No. 1914157, situated along North Port Drive. This well intersected a sand aquifer at a depth of 23.1 m, below the till and an underlying clay layer. As the lower drift can be present as a thick layered sequence, other aquifers are also likely to occur at varying depths, from place to place.

Below the subject site, the IA is anticipated to occur at a depth of approximately 40 m (~130 ft). Unless deep excavations and/or deeply driven support structures are required, the IA is not expected to pose a significant constraint on the proposed development.

iii) Basal/Upper Bedrock Aquifer. A deeply buried aquifer occurs consistently across the study area, at the base of the overburden sequence and/or within the upper (often weathered and fractured) portion of the limestone bedrock. The aquifer can consist of a sand and gravel-rich (basal) zone that occurs just above the contact with the underlying bedrock. This may represent the principal regional aquifer for water supply wells in the study area.

Example wells include Nos. 1908196 (88.4 m deep) and 7108816 (78.6 m deep). Similar to the IA (above), the Basal/Upper Bedrock Aquifer is not expected to be a constraint on the proposed development.

3.4 Shallow Groundwater Monitoring

Of the ten (10) boreholes, six (6) were completed as monitoring wells. In addition, the four (4) historical monitoring wells in the northwest corner of the site were utilized for the study. The locations of the monitoring wells are presented on Figure 4.

Following the completion of the drilling program, complete rounds of static water level measurements were obtained from the wells on two (2) separate occasions. The compiled water level data have been presented in Appendix J. Elevations for the wells were obtained from the (LiDAR-derived) Ontario Digital Terrain Model (DTM) available through Ontario GeoHub, which utilizes the Kawartha Lakes 2023 DTM package. This

dataset has generally been utilized by Conservation Authorities for the purposes of flood-mapping and is generally expected to provide a reasonable representation of the topography. However, these data may be refined with the completion of a topographic survey.

For ease of reference, a summary of the manual water level measurements is presented in Table 3, below:

Table 3 - Manual Water Level Summary

Well No.	Screened Interval (mbgs)	Depth to Saturated Soils (mbgs)	Water Level (12/03/2025)		Water Level (12/17/2025)	
			mbgs	masl	mbgs	masl
BH25-1	6.32 to 9.37	8.53	5.65	275.98	5.60	276.03
BH25-3	2.72 to 5.77	4.27	1.99	268.64	1.92	268.71
BH25-4	2.94 to 5.99	3.96	4.00	268.35	3.94	268.41
BH25-5	3.20 to 6.25	1.83 (upper sand seam)	1.07	267.50	1.11	267.47
BH25-7	2.64 to 5.69	4.57	3.84	256.16	1.72	258.28
BH25-8	2.81 to 5.86	4.57	1.18	259.27	0.90	259.54
MW-1	4.57 to 7.62	~4.57 (from BH25-9)	0.24	255.85	0.09	255.99
MW-2*	16.76 to 19.81	n/a	0.48	255.51	0.28	255.71
MW-3	4.57 to 7.62	n/a	0.28	255.71	0.23	255.76
MW-4	4.57 to 7.62	n/a	0.64	255.43	0.48	255.59

Notes: mgbs - metres below ground surface, masl - metres above sea level, *indicates Intermediate Aquifer well.

To preliminarily assess the variability of the water levels presented above, data logging pressure transducers ("dataloggers") were installed in four (4) monitoring wells to record the water levels in these wells between December 3, 2025 and December 8, 2025. A compiled hydrograph of the data obtained from the wells is presented in Appendix J.

During the monitoring period, ambient air temperatures nearly reached zero degrees, as measured by Environment Canada - Uxbridge West, however, there were no significant precipitation or snow melt events. This is reflected in the water level data, which exhibits a gentle increase of approximately 0.1 m in most of the wells, likely as a result of persistent recharge under the snow pack.

While BH25-7 exhibits a significant increase in water level between December 3, 2025 and December 17, 2025 (Table 3), this is believed to be due a very slow recovery in the water

level following the borehole drilling activities. The very low *K* values estimated from the hydraulic testing (Table 1) supports this interpretation.

3.5 Shallow Groundwater Flow Pattern

Based on the December 17, 2025 groundwater elevations obtained from the monitoring wells, a plot of the groundwater flow pattern about the Site has been prepared (Figure 9). The plot illustrates the presence of a central groundwater flow divide that follows the axis of the drumlin ridge, with flows split into eastern and western regimes.

To the *east*, shallow flow is interpreted to migrate to a small watercourse (Cawkers Creek) situated in the green space immediately adjacent to the Site, where shallow groundwater discharge likely occurs from time to time. Discharge is not expected to be perennial, as observed flows in the watercourse during the investigation were minimal and manual auger probes in proximity to the creek suggested saturated conditions occurred below the bed of the creek.

To the *west*, shallow flow migrates through the site to the off-site Nonquon #7 Wetland, situated approximately 124 m to the west/northwest. Saturated ground conditions were noted in the extreme southwest corner of the Site that could be related to a minor amount of groundwater discharge in that area. However, this could also be related to runoff being impounded in that area, not able to reach a constructed swale to the west. While the small swale along the western boundary likely directs flows north towards Reach Street in the spring, this swale was observed to be dry during our site inspections.

3.6 Shallow Groundwater Quality

Following well development and hydraulic testing, two (2) representative groundwater samples were obtained from the monitoring wells for laboratory analyses. The samples were analysed by Caduceon Environmental Laboratories for parameters listed in the Regional Municipality of Durham's Sewer-Use By-law, in the event that future dewatering results in the need to dispose of the groundwater to/through municipal infrastructure.

In addition, field-measured groundwater quality data were obtained and recorded utilizing an InSitu AquaTroll 400 multiparameter water quality instrument. The measurements were obtained directly from the water column inside the monitoring wells. The field water quality data are summarized in Table 4 below:

Table 4 - Field Water Quality					
Location	**Conductivity (μS/cm)**	**pH (pH Units)**	**Temperature (°C)**	**ORP (mV)**	**TDS (ppm)**
BH25-1	353	8.22	8.99	-596	194
BH25-3	782	7.80	11.10	489	430
BH25-4	497	7.81	9.99	395	274
BH25-5	442	8.03	8.56	480	244
BH25-7	275	8.44	9.23	464	151
BH25-8	409	8.12	7.22	-563	225
MW-1	289	8.29	5.76	345	159
Cawkers Creek	1,074	8.40	0.75	535	590

Table 4 Notes: TDS - Total Dissolved Solids; ORP - (Relative) Oxidation Reduction Potential

As provided above, the groundwater across the site typically exhibits a moderate concentration of dissolved solids and neutral pH. BH25-3 appears to exhibit an elevated concentration of dissolved solids (at 430 ppm), potentially related to historical salting (de-icing) of the driveway and parking area associated with 1540 Reach Street that occurs immediately upgradient of the well. More profound effects from road salt applications can be observed within Cawkers Creek, approximately 10 m south of the Reach Street road crossing, where the TDS measurement yielded 590 ppm.

As presented in Appendix K, the laboratory water quality results for MW-1 indicate generally acceptable conditions with respect to the Sewer-Use By-Law criteria. Although the sample submitted to the laboratory exceeded the Total Suspended Solids (TSS) and manganese stormwater discharge criteria, it is anticipated that mitigating the discharge of sediment during any such dewatering operations would reduce these parameters to acceptable concentrations.

In contrast, groundwater from BH25-5 exhibited an elevated concentration of BTEX (benzene/toluene/ethylbenzene/xylene) compounds, with toluene occurring above the Sewer-Use By-Law criteria. This appears to be anomalous with no known source and contrasts the laboratory results obtained from the saturated soil samples collected at BH25-5. This suggests the BTEX may be relatively recently introduced into the subsurface, possibly from the drilling activities (e.g., incidental leaks, use of petroleum-based lubricants).

Based on the anomalous water quality results obtained from BH25-5, the well was subsequently purged of over five (5) well volumes and re-sampled. The laboratory results included in Appendix K indicate that the same BTEX compounds were found to be below

the laboratory's method detection limit and the Sewer-Use By-Law criteria.

As BH25-5 exhibited a slow recovery following purging activities, it is possible that a residue of drilling-related fluids remained within the well casing prior to the initial sample collection, despite withdrawing at least three (3) well volumes prior to sampling. The presence of mineral oil and grease in the initial water quality results would support this interpretation. As a result, it is believed the initial results were impacted by incidental release of a petroleum-based product during drilling activities, possibly related to the contractor's use of a petroleum-based lubricant (WD-40) on certain components of the drill rig.

4.0 Future Development Considerations

4.1 Construction Dewatering

4.1.1 General

This preliminary hydrogeological study has revealed that the proposed development Site is dominated by three (3) types of shallow soils: layered glaciolacustrine sand/silt, glaciolacustrine silt/clay and a substrate of Newmarket Till. Due to their low hydraulic conductivities (*K*s), any required construction dewatering of excavations in the till and/or in the glaciolacustrine silt/clay is expected to yield minimal groundwater that should be easily manageable. In contrast, the glaciolacustrine sand/silt deposits are generally more permeable, and likely capable of yielding greater groundwater flows into excavations. As such, it is worthwhile to examine theoretical excavations into the glaciolacustrine deposits to determine whether dewatering could be problematic in this setting.

The observed water table depth varies considerably across the site, with the deepest occurrences being within the central drumlin (till) and the shallowest occurrences being along the drumlin's flanks, to the east and west, within the glaciolacustrine deposits, as illustrated by Figure 9. Based on the Grading Plan provided by SKA (Appendix B), we anticipate that significant excavations into the drumlin feature may be required (as would be expected), with the low-lying lands areas of the site being mostly infilled. As a result, the need for dewatering may be isolated to the elevated areas of the site and/or where servicing trenches are required.

While the depth to the water table is an indication of whether dewatering will be necessary, it is important to recognize that some of the saturated (aquifer) materials encountered on the site occur below weakly confining layers. As a result, the water levels in some of the monitoring wells will be influenced by upward pressure caused by the weight of the overlying materials, creating a "potentiometric surface" rather than a true water table. As a result, excavations below the potentiometric surface may not require

significant dewatering if the depth of the excavation remains above the depth of the saturated soils and/or above any confining layer. Despite the preceding and as a conservative approach, the following assessments assume any excavation below the water table/potentiometric surface indicated on Figure 9 would result in the need to control/remove groundwater inflows.

As very little is known about the extent and depth of excavations needed to install the various infrastructure on the site (i.e., footings, basements, sewer mains, drains, etc.), the following assessment attempts to provide some guidance based on theoretical excavations that may or may not reflect the final layout. Recognizing these limitations, we can provide rough calculations for dewatering for an assumed excavation of a conceptual service trench (50 m long to a depth of 4 m) and a conceptual residential basement (assumed to be a 12 m x 9 m x 4 m excavation), as examples. Detailed design of individual components of the development may need to be assessed on a case-by-case basis depending on whether intersecting shallow groundwater is anticipated.

For the analytical method to be valid and as a buffer, it is assumed that both examples can be dewatered to a depth of 1 m below the bottom of the excavation to maintain reasonably dry working conditions. Additional flows from runoff/precipitation events are not included in the preliminary estimates.

4.1.2 Example Residential Basement Excavation

Based on a widely utilized approach, Powers et al. (2007) provides analytical calculations to estimate dewatering rates into a simple excavation. The following formula is utilized for unconfined aquifers assuming the excavation is equivalent to a large diameter well:

$$Q = \frac{\pi K(H^2 - h^2)}{\ln R_o / r_w}$$

Where, Q represents the radial flow (to a well) in a water table aquifer (L/min), K is the hydraulic conductivity, H is the static height of the water table (m) above the limiting layer, h is the total height of the drawdown required above the limiting layer (m), R_o is the estimated radius of influence (m) and r_w is the excavations equivalent radius as if it were a circular well (m).

The radius of influence can be estimated from the Sichart relationship between the hydraulic conductivity (K) and the anticipated drawdown(s): $R_o \approx 3000$ x s x $K^{½}$ (for K in m/s). The equivalent radius (r_w) can be determined from the length (a) and width (b) of the proposed excavation.

To estimate the likely worst-case dewatering scenario, the limiting layer for this approach is considered to be the dense Newmarket Till substrate that occurs below the glaciolacustrine sediments and the upper (weathered) till deposits. The minimum elevation of the limiting layer is assumed to be 248 masl based on the data obtained from MW-1, on the western portion of the site. The mean estimated *K* for the aquifer materials determined from Table 1 (above), at 5.0 x 10^{-4} cm/s (4.32 x 10^{-2} m/day), was used for the calculation. Assuming the water level will need to be held 1 m below the floor of the excavation to maintain dry working conditions (corresponding to a minimum elevation of 251.0 masl at MW-1), the required drawdown would be 5.0 m, for this example. As the water level in MW-1 occurs within 10 cm of the ground surface, this example assumes the worst-case, with the full thickness of the soils within the excavation being saturated.

Based on the above, the estimated steady-state inflow through the side walls of an excavation (measuring 12 m x 9 m x 4 m) in the low lying western portion of the property is approximately 7,200 L/day (~5.0 L/min).

The data obtained from MW-1 and MW-2 provides that the vertical hydraulic gradient is negative (i.e., downward), suggesting inflows from the bottom of the excavation are expected to be minimal and can be neglected in the total calculations.

Provided the dewatering flows can be discharged a reasonable distance (downgradient) from the excavation or into a nearby ditch, management of temporary dewatering flows should not be problematic, neglecting inflows from surface water runoff.

Should more conductive aquifer materials be encountered on the site, such as the conditions indicated from BH25-4 (*K* = 2.4 x 10^{-4} cm/s), the inflows to the same theoretical excavation would increase to approximately 134,500 L/day (93.4 L/min). However, it is expected that the single well response test results obtained from BH25-4 may over-estimate the bulk *K* of the aquifer materials due to scale effects related to the variability of the aquifer materials and an increased hydraulic gradient on the eastern flank of the drumlin. Regardless, the above flows can be managed provided the activities are registered with the MECP (discussed below).

4.1.3 Example Service Trench

Similarly, Powers, et al. provides a modification to the flow equation presented above that approximates flows to a long narrow trench, as provided below:

$$Q = \frac{\pi K(H^2 - h^2)}{\ln R_o / r_w} + 2\left[\frac{xK(H^2 - h^2)}{2L_o}\right]$$

Where, x represents the length of the trench and L_o represents the linear distance to an

upgradient vertical line (recharge) source. In this instance, the distance to the vertical line source can be best approximated by the relationship provided by Powers, et al., being defined as $R_o = 2L_o$.

The above methodology to estimate the steady-state inflow of groundwater into a conceptual 50 m long, 4 m deep trench was applied to the expected worst-case scenario, whereby the shallow water table occurs at or near the ground surface, as observed at MW-1. Based on this approach, the expected inflows to the theoretical 50 m long trench would be 21,600 L/day (~15 L/min).

4.1.4 Proposed Grades

To preliminarily assess the potential risk of significant dewatering related to establishing the proposed grades illustrated on the grading plan provided by SKA, the following table summarizes the interpreted cut/fill with relation to the water levels and/or depth to saturated soils observed at each of the borehole locations:

Table 5 - Cut/Fill Preliminary Assessment

Location	Existing Grade (masl)	Proposed Grade (masl)	Amount of Cut/Fill (m)*	Depth to Saturated Soils (mbgs)	Water Level Depth (mbgs)
BH25-1	281.63	274.69	-6.51	8.53	5.60
BH25-2	276.50	272.04	-4.46	4.57	n/a
BH25-3	270.63	270.72	-0.03	4.27	1.92
BH25-4	272.35	269.69	-2.31	3.96	3.94
BH25-5	268.57	n/a	n/a	1.83	1.11
BH25-6	264.74	268.21	+3.71	4.88	n/a
BH25-7	260.00	263.50	+3.50	4.57	1.72
BH25-8	260.44	262.50	+2.00	4.57	0.90
BH25-9	257.39	n/a	+6.00	4.57	n/a
MW-1	256.10	n/a	n/a	n/a	0.09

Notes: *positive values indicate areas interpreted to be filled, whereas negative values represent cuts

Table 5 (above) utilizes our interpretation of the available elevation data and observations during the field work conducted between November 14 and December 17, 2025, and is only intended to provide an indication of where saturated soils are expected to be encountered with respect to the grades provided by SKA (Appendix B). It is important to recognize that the above table utilizes the publically available LiDAR data for the interpreted existing grades and will need to be updated with a topographic survey of the site.

Regardless, as presented in Table 5 above, proposed grading in the area of BH25-1 and BH25-2 has the potential to intersect the shallow water table, although should not intersect the main aquifer materials. While some groundwater flow through preferential pathways (e.g., sand seams) will likely be encountered above the aquifer materials, significant groundwater inflows are not expected unless the excavations penetrate into the aquifer materials. In addition, as BH25-1 and BH25-2 occur on the drumlin ridge, any groundwater inflows are expected to quickly subside due to the lack of any significant recharge source in the upgradient direction (i.e., likely to be limited by the amount of recharge through the drumlin materials to the south).

As the proposed depths of the stormwater management (SWM) facilities (i.e., ponds) have not been provided, it is not possible to provide detailed comments with respect to potential dewatering or whether the ponds will remain above the water table. Despite the preceding, recommendations with respect to the SWM pond and other SWM facilities are presented below.

Based on the available information provided by SKA (Appendix B), we do not expect any need for significant excavation dewatering (of groundwater) as a result of the proposed grades.

4.1.5 Discussion

Analytical methods that estimate dewatering rates are approximate at best and are intended for use in situations where the variables are well constrained and the basic assumptions of the methods are met. While we have some data to characterize the conditions, those conditions are variable. For example, K values vary across the site and with depth. Groundwater levels also exhibit variation over time. As such, the groundwater regime is influenced by factors that affect the accuracy of analytical calculations. Moreover, until the extents, depths and sequencing of future excavations are known, modelling of the total or maximum flows, rather than simply modelling example scenarios, cannot be conducted.

Regardless of the uncertainties, the preliminary dewatering flow rate estimates presented above are not considered unmanageable. While dewatering for residential basement excavations is now exempt from permitting requirements, registration may be needed for other excavations. In this instance, it should be possible to manage flows to remain within the 400,000 L/day limit of the Environmental Activity and Sector Registry (EASR). Should a future assessment indicate that the EASR limit might be exceeded, the flows could be reduced by limiting the extent of some excavations or altering the sequencing. If that cannot be achieved and the projected dewatering rates are expected to exceed the EASR limit, it may be necessary to obtain a Permit to Take Water (PTTW) from the MECP for the works.

To more accurately assess future dewatering conditions, a Dewatering Management Plan should be prepared for the development, at the detailed design stage. If extensive dewatering is contemplated, a numerical groundwater flow model should be prepared in order to address the complexities associated with this site. Example guidelines to assist in this regard as presented in Appendix L.

4.2 Water Balance

4.2.1 Previous Assessment

For the portion of the Site explored in 1990, GAL conservatively estimated the infiltration rate to be on the order of 155 mm/yr, which is a moderate rate. This was based on 50.8 mm/yr for those areas exhibiting clay-rich soils at the surface and 203.2 mm/yr for area with sandy soils.

As the proposed development Site now extends further to the east and additional data are available, the earlier infiltration rates have been re-assessed, as outlined below.

4.2.2 Current Assessment of Existing Conditions

To provide an estimate of the current natural recharge rate across the study area from precipitation, we have evaluated the following expression, after the methodology presented in "MOEE Hydrogeological Technical Information Requirements for Land Development Applications" (1995):

$$I_{rate} = A \times W_s \times I_f,$$

where,

I_{rate}= average infiltration rate (m^3/yr) A = Net contributing area (ha)
W_s= Water surplus (m/yr) I_f = Infiltration factor[6] (dimensionless).

While there are contrasting soil types across the site, the hydraulic conductivity (thus infiltration rate) of the surficial soils estimated in Table 1 do not vary significantly across the site. However, as the site contains a drainage divide and contrasting topography to the west, we have divided the Site into three (3) main infiltration regimes, as illustrated on Figure 10.

[6] Infiltration factor calculation method: From MOEE Hydrogeological Technical Information Requirements for Land Development Applications, April 1995 (MECP)

Briefly, "Area A" represents the western part of the property that exhibits a low topographic gradient and somewhat discontinuous glaciolacustrine sand interspersed with exposures of glaciolacustrine silt/clay. "Area B" consists primarily of the drumlin ridge, west of the local drainage divide. "Area C" consists of the drumlin ridge and glaciolacustrine sands observed toward the Cawkers Creek valley. These areas comprise 24.25 ha, 20.96 ha and 18.66 ha, respectively. The I_{rate} for each area is estimated below.

Area A:

The dominant surficial soil type in Area A is an SM type (glaciolacustrine silty sand) matrix with an elevated permeability but is interspersed by occasional exposures of the underlying glaciolacustrine silt/clay. The average slope of Area A is minimal, at approximately 0.02 m/m and land cover is primarily open, agricultural lands with some fencerow and a small woodlot. Therefore, I_f is estimated from the following:

Soil factor	=	0.20 (mostly SM type soils)
Slope factor	=	0.20 (flat terrain)
Cover factor	=	0.10 (minimal)
Infiltration factor	=	*0.50 (combination of above)*

The average annual precipitation rate for the closest Environment Canada meteorological station (Udora, 1991 to 2020 norms), is 883.4 mm/yr. From the climate data, the Thornthwaite adjusted potential evapotranspiration rate is 590 mm/yr, yielding a theoretical Water Surplus (W_s) of 293.4 mm/yr, or 0.2934 m/yr (Appendix M).

By applying the above infiltration factor (I_f) to the water surplus value, the current net incident (natural) infiltration/recharge rate is estimated to be 146.7 mm/yr (0.147 m/yr). Based on the total area, the annual infiltration rate is 0.147 m/yr x 24.25 ha x 10,000 m/ha = 35,575 m^3/yr.

Area B:

The dominant surficial soil type in Area B is an SM type matrix associated with the upper (weathered) portion of the Newmarket Till that forms the central drumlin ridge. While the soils across the drumlin ridge are slightly more consistent, the till can vary between an SM and ML type soil locally. The average slope of Area B is substantial, at approximately 0.07 m/m and land cover is primarily open, agricultural lands with some fencerow. Therefore, I_f is estimated from the following:

Soil factor	=	0.20 (mostly SM matrix)
Slope factor	=	0.10 (hilly terrain)
Cover factor	=	0.10 (minimal)
Infiltration factor	=	*0.40 (combination of above)*

By applying the above infiltration factor (I_f) to the water surplus value (as above), the current net incident (natural) infiltration/recharge rate is estimated to be 117.4 mm/yr (0.117 m/yr). Based on the total area, the annual infiltration rate is 0.117 m/yr x 20.97 ha x 10,000 m/ha = 24,535 m^3/yr.

Area C:

The dominant surficial soil type in Area C is an SM type (glaciolacustrine silty sand) matrix with occasional areas that contain slightly coarser sand and sandy silt. The average slope of Area C is similar to Area A, as the site drops towards Cawkers Creek, at approximately 0.07 m/m and land cover is primarily open, agricultural lands with some fencerow. Therefore, the I_f is expected to be the same as Area C, providing a current net incident (natural) infiltration/recharge rate estimated to be 117.4 mm/yr (0.117 m/yr). Based on the total area, the annual infiltration rate is 0.117 m/yr x 18.66 ha x 10,000 m/ha = 21,832 m^3/yr.

Summary:

Based on the preceding, the current water balance of the site is summarized by Table 6, below:

Table 6 - Water Balance Summary

Infiltration Area	Area (ha)	Infiltration Rate (mm/yr)	Annual Infiltration Volume (m^3)	Runoff Rate (mm/yr)	Annual Runoff Volume (m^3)
Area A	24.25	146.7	35,575	146.7	35,575
Area B	20.97	116.6	24,535	174.8	36,698
Area C	18.66	116.6	21,832	174.8	32,655
Site	63.89	128.3	81,942	164.2	104,928

As stipulated by the methodology used for the above estimates, this is intended to provide "*a worst case scenario with respect to runoff and is conservative in estimating the amount of ground water recharge*". As a result, the above estimates may be modified through a stormwater management assessment in accordance with other proven methodologies.

4.2.3 Proposed Development

The proposed development will affect infiltration rates primarily by adding impermeable surfaces (roofs, paved areas, etc.), increasing runoff at the expense of infiltration. Given the preliminary nature of the currently available concept plan, meaningful estimates of impermeable surfaces are not available. Regardless, the development servicing will likely need to incorporate infiltration enhancement by implementing Low Impact Design (LID) facilities into the stormwater management system in an effort to maintain the natural water balance. This will need to be revisited at the time of detailed design.

Additional information regarding the design of LID facilities is provided in the following section.

4.3 Stormwater Management

Two (2) stormwater management pond locations have been identified on the preliminary concept plan within the northeastern and northwestern corners of the Site. Based on our investigations, we can characterize the conditions for each location as outlined below.

Northwest SWM Pond Area

Conditions in the northwest corner of the Site include a mantle of glaciolacustrine sand with silt overlying a substrate of galciolacustrine silt/clay. At BH25-9, the sand layer was observed to have a thickness of approximately 1.8 m. Below this depth, glaciolacustrine silt and clay was encountered. As the silt/clay became saturated with depth (below approximately 4 m from existing grade), the soils appeared to be extremely soft and loose.

The area also exhibits an elevated water table (potentiometric surface) condition, as observed at MW-1 where the observed water level approaches the ground surface. Translating the water level elevation from MW-1 to the approximate centre of the SWM pond at BH25-9, yields an approximate depth of 1.4 m to the water table.

Based on the above observations, it is recommended that the SWM facility be limited to a total depth of no more than approximately 1.0 m below the existing grade of BH25-9 to avoid exposing the underlying silt/clay while providing a small buffer with respect to the potentiometric surface.

Northeast SWM Pond Area

Conditions in the northeast corner of the Site include a thin mantle of sandy (weathered)

till overlying a substrate of dense Newmarket Till, as observed at BH25-5. In contrast, the lower topography in this area (immediately adjacent to Reach Street) exhibits surficial exposures of glaciolacustrine silt/clay. The mantle of sand and silt/clay is expected to be comparatively thin in this location (i.e., up to about 1 m thick). Based on the water level data obtained from BH25-5, the water table occurs approximately 1.11 m below the existing grade.

Utilizing the data obtained from BH25-5, the northeastern SWM pond should be limited to a maximum depth of 0.83 m below the existing grades to maintain a 1 m separation above the aquifer materials. While the observed depth to the saturated soils in this location was lower (at approximately 4 m below grade), a very moist sand seam observed at a depth of 1.83 m could potentially create a hydraulic connection with the aquifer, upward pressure from groundwater, resulting in the water level being only 1.11 m below the existing grade.

Low Impact Development (LID) Considerations

In an attempt to maintain the pre-development water balance, it will be necessary to infiltrate a significant amount of runoff generated by impermeable surfaces in the development. In addition to the SWM pond systems, LID facilities will likely need to be incorporated into the development design where possible, to reduce reliance on traditional SWM methods.

The main constraint with respect to LID design at the subject Site is the presence of a fairly shallow water table condition that can occur within the glaciolacustrine deposits and along the flanks of the drumlin ridge. In addition, the naturally low-permeability of the surficial soils encountered also represents a constraint.

As infiltration-based BMPs are generally required to remain 1.0 m above the water table, this may represent a constraint for portions of the subject site, especially where the grades will be lowered. As the water table (potentiometric surface) generally occurs between 0.5 m to 2 m below the existing ground surface and could rise to within 1 m of the ground surface seasonally, active infiltration-type BMPs are not likely to be practical in this setting, with the exception of those parts of the site that will be raised/filled. Provided fill materials of similar hydraulic conductivity are utilized, the site could be raised to accommodate these features. Passive infiltration facilities (e.g., swales) would likely be more effective at this site, given these constraints.

As the hydraulic properties of the glaciolacustrine sand and upper Newmarket Till deposits are similar, it is expected that any BMPs can be constructed in or on these materials. However, the glaciolacustrine silt/clay in the lower elevations of the site exhibit a much lower infiltration rate, providing a “limiting layer” that would negatively affect infiltration/recharge and could potentially result in the mounding of groundwater.

However, as the lower elevations of the site are expected to be raised using soil cut from the drumlin ridge (till) and/or imported fill materials, this is not expected to be a significant constraint, provided the systems are distributed over a large area.

As outlined in Table 1 (above), the estimated soil infiltration rate of the glaciolacustrine sand and upper (weathered) Newmarket Till materials found on-site is expected to be on the order of 50 mm/hr to 60 mm/hr. However, these values cannot be utilized directly for SWM design purposes. As outlined in the LID guidelines:

> *"...the infiltration rate used to design an infiltration BMP must incorporate a safety correction factor that compensates for potential reductions in soil permeability due to compaction or smearing during construction, gradual accumulation of fine sediments over the lifespan of the BMP and uncertainty in measured values when less permeable soil horizons exist within 1.5 metres below the proposed bottom elevation of the BMP.*
>
> *The measured infiltration rate (in millimetres per hour) at the proposed bottom elevation of the BMP must be divided by a safety correction factor selected from Table C2 to calculate the design infiltration rate. To select a safety correction factor from Table C2, calculate the ratio of the mean (geometric) measured infiltration rate at the proposed bottom elevation of the BMP to the rate in the least permeable soil horizon within 1.5 metres below the bottom of the BMP. Based on this ratio, a safety correction factor is selected from Table C2."*

In this instance, the measured mean shallow infiltration rate of the sandy materials is about 55 mm/hr, with the silt/clay exhibiting an infiltration rate below 12 mm/yr. As a result, the worst-case correction factor to be applied in this instance should be 4.5, resulting in a BMP *design* infiltration rate of 55 mm/hr / 4.5 = 12.2 mm/hr for the shallow sand soils. Where the sandy sediments are sufficiently thick (i.e. >1.5 m) above the glaciolacustrine silt/clay or where the underlying substrate is comprised of Newmarket Till, the factor can be reduced to 3.5, resulting in a *design* infiltration rate of 15.7 mm/hr.

The guidelines state that systems constructed in low permeability soils with a design infiltration rate of less than 15 mm/hr require incorporation of a perforated pipe underdrain.

It is expected that the above estimates may be refined based on site-specific scenarios during detailed design.

Groundwater Mounding

As infiltration-based LID systems can increase the infiltration capacity of the soil above the water table, groundwater mounding can occur below these features. While the degree

of mounding will depend on the infiltration characteristics of the soils used for the LID feature and the separation between the bottom of the LID and the water table, it may be appropriate to provide a simple analytical model of a conceptual infiltration trench/chamber system as a guide.

The following mounding calculation developed by Fielding (1981) provides a simplistic estimate of height of groundwater mounding ($\triangle h$) below a trenched system based on the modelled flow rate (Q), hydraulic conductivity (K) and aquifer thickness (b), as follows:

$$\Delta h = \frac{Q}{2\pi Kb}$$

Using the bulk K provided above (1.52 x 10^{-4} cm/s), an aquifer thickness (b) of 10 m (above a substrate or boundary) and assuming a 30 mm precipitation event that falls onto a 2,500 square foot (~232 m^2) impermeable area that is entirely infiltrated, the estimate mounding beneath the infiltration system is expected to be on the order of 0.85 m.

It is important to recognize that the above equation models a point-source and neglects the distribution area of the infiltration system.

The United States Geological Survey (USGS) has published a methodology based on Hantush (1967) for estimating the mounding beneath a infiltration basin, which is based on the size of the basin, recharge rate, specific yield, aquifer thickness and the hydraulic conductivity. Assuming a 9 m^2 basin, the mounding directly below the basin is estimated at approximately 0.2 m for a 100 mm recharge event over a single 24 hour period. A measurable (0.01 m) mounding effect is further predicted to extend 7.5 m from the infiltration system.

Based on the preceding, groundwater mounding is not expected to be a significant constraint to the use of LID infiltration systems on the Site. However, as the development will result in alterations and infilling, evaluation of the systems on a case-by-case basis may be required.

4.4 Legacy Servicing

4.4.1 Existing Supply Wells

During our field investigations, four (4) legacy (domestic) wells were physically identified on the Site at the locations illustrated on Figure 4 and in Appendix N. These include one (1) drilled well and three (3) bored/dug wells. These wells have historically serviced the residences at 1520, 1540 and 1580 Reach Street, all occurring within the proposed development Site.

Most of the identified legacy domestic wells continue to supply the existing residences. However, as the residences will be demolished as part of the development, it will be necessary to have these legacy wells properly abandoned, in accordance with O. Reg 903, as amended. The abandonments should be undertaken as part of the demolition process, such that the demolition work does not encounter or damage any residual part of the wells. The locations should also be clearly identified on all drawings.

Detailed recommendations regarding the decommissioning of the legacy supply wells are provided in a following section.

4.4.2 Existing Monitoring Wells

Among the recorded wells illustrated on Figure 4, a cluster of four (4) 2" PCV monitoring wells were identified near the Site's northwest corner. It is understood that these were constructed in 2024 as part of a previous investigation, possibly in support of a proposed pumping station. It is not known whether these 2024 monitoring wells are still in use (i.e., being monitored) by others. However, we have included the wells in our monitoring program and will continue to do so for the duration of our study.

In addition to the older monitoring wells, six (6) new monitoring wells were constructed as part of our investigations. While the main part of our study is complete, monitoring may continue or be re-started if needed. As such, it would be premature to abandon the monitoring wells at this time. As such, these wells should remain in place and be properly maintained until deemed that they are no longer useful. However, all of these wells will eventually need to be properly abandoned in accordance with the Wells Regulation. We expect that the monitoring wells could be decommissioned at the same time as the legacy domestic wells, unless long-term monitoring is required.

Detailed recommendations regarding the decommissioning of the monitoring wells are provided in a following section.

4.4.3 Domestic Sewage Systems

There are three (3) existing residences associated with the Site, one at each of 1520, 1540 and 1580 Reach Street. All have legacy private sewage (septic) systems which were approximately located during our investigations, as provided by Appendix N.

These systems will need to be properly decommissioned prior to commencing development construction in those areas. Prior to decommissioning the systems, it will be necessary to complete and submit an *Application for a Permit to Construct or Demolish* under the Ontario Building Code, to Durham Region. While the decommissioning requirements will

vary according to the individual circumstances, best practices will include the following:

- Obtain the required permit(s);
- Locate and expose the system components by excavating;
- Pump out contents of the septic tank (by licensed contractor) and disinfect (depending on time since last usage);
- Remove all equipment (e.g., pipes, electrical lines, pumps, etc.);
- Remove tank and backfill area with clean soil or granular (best approach), or make tank inoperable by breaking concrete prior to backfilling, if the remnants will not interfere with future use/construction;
- Unless acceptable to leave in-place, excavate/remove tile lines and media, sample and test any potentially contaminated fill/media/soil (depending on time since last use), followed by proper disposal of any contaminated material, and backfill with clean soil or granular.

Appendix O presents guidelines for decommissioning disused septic systems, from the Ontario Onsite Wastewater Association (OOWA). Further recommendations are provided in a following section.

5.0 Conclusions and Recommendations

5.1 Three (3) dominant shallow soil types were encountered on-site, represented by Newmarket Till (SM to ML type soils) associated with a drumlin ridge, glaciolacustrine silty sand (SM type soil) in the low-lying areas of the site on the flanks (east and west) of the drumlin ridge and glaciolacustrine silt/clay (ML to CL type) where the overlying sand is absent. The Newmarket Till can be further broken into two (2) components, consisting of an upper (weathered) portion that is predominantly present as a silty sand (SM type) and lower till unit that is predominantly a sandy silt (ML type). The depth of the weathering will vary across the drumlin ridge, but is generally expected to be limited to about 3 m. As a result, the sandy sediments across the site exhibit similar hydraulic properties with a bulk hydraulic conductivity of approximately 3×10^{-4} cm/s, corresponding to an infiltration rate of about 55 mm/hr.

5.2 In accordance with LID criteria, where sandy soils are encountered in sufficient thickness to support the LID feature (i.e., extends 1 m below the feature), the design infiltration rate for BMPs should be reduced by a safety factor of 3.5, yielding a design rate of 15.7 mm/hr. In all other circumstances, the safety factor of 4.5 should be applied, yielding a design infiltration rate of 12.2 mm/hr.

This would <u>not</u> apply to any imported granular fill materials. However, the design infiltration rate of the imported fill would need to be reduced according to the applicable safety factor provided in Table C2 of the Low Impact Development (LID) Stormwater Planning and Design Guide (TRCA, 2010), to accommodate the underlying till (limiting layer).

5.3 The depth to the shallow groundwater table was measured to be between 0.09 m (at MW-1) and 5.6 m (at BH25-1) below the existing grades, with the water levels occurring within 1 m of the ground surface below a topographic elevation of approximately 262.5 masl. As the water levels were collected in December 2025, these measurements should be used for preliminary design purposes only. Seasonal high water level measurements (typically in March-April) should be collected to assist with detailed design and these conclusions/recommendations updated accordingly.

5.4 As infiltration-based BMPs are generally required to remain 1.0 m above the water table and/or limiting layer (e.g., glaciolacustrine clay), implementation of most infiltration-based BMPs may be problematic in the low-lying areas of the site and along the periphery of the dumlin ridge, as they may be limited to the upper 0.5 m of current grades on the site. Similarly, areas of the site that are lowered may similarly be challenging with respect to BMP design/implementation.

Given the unknowns with respect to the proposed development, evaluation of infiltration-based BMPs should be examined on case-by-case basis by a qualified hydrogeologist (P. Geo. or P. Eng.). The hydrogeologist should examine whether the BMP will be suitable for the conditions and address any concerns regarding the mounding of groundwater and/or the creation of "perched" aquifer conditions.

5.5 To protect sensitive ecological features, it is also recommended that the SWM design incorporate quality control. Given the comparatively short distance between the area to be developed and the surface water features, we recommend that infiltration-based BMPs incorporate oil/grit separators and bio-retention.

5.6 As presented in the water balance provided above, the pre-development infiltration volume is expected to be on the order of 81,942 m^3/yr. This represents the target infiltration volume for the development. To maintain the current balance with respect to groundwater, the infiltration volume should be split based on the topographic drainage divide on the property, with the western portion of the site receiving 60,110 m^3/year and east of the divide receiving 21,832 m^3/yr.

5.7 Hydraulic testing of the monitoring wells installed on-site found that the mean hydraulic conductivity (*K*) of the aquifer materials is approximately 5 x 10^{-4} cm/s, representing average conditions across the site. Data from two (2) wells (BH25-4 and BH25-5) suggest a higher *K* could be encountered but it's believed these values were inflated due to scale effects and/or the testing not satisfying basic assumptions about the conditions.

Based on the preceding, a theoretical 12 m x 9 m x 4 m excavation and a 30 m long trench excavation was modelled using generally accepted analytical methodologies presented by Powers, et al. The analytical model suggests these excavations would not require significant dewatering, yielding approximately 7,200 L/day and 21,600 L/day, respectively. However, as the test data was obtained from widely spaced wells, any significant excavations (e.g., beyond what is typically needed for a single residence) that are expected to extend below the shallow water table/potentiometric surface should be subjected to review by a qualified hydrogeologist. The hydrogeologist should provide an opinion on whether detailed analysis is warranted on a case-by-case basis.

5.8 As dewatering in excess of 50,000 L/day and/or discharges of 10,000 L/day to the natural environment may be required, any activities that may exceed these rates will need to be registered with the Ministry of the Environment, Conservation and Parks (MECP). In most instances, these activities can be registered through the Environmental Activity and Sector Registry (EASR) on-line portal. If sequencing excavations to limit the amount of

water takings required is not feasible and the rates are expected to exceed the EASR limit, it may be necessary to obtain a Permit to Take Water (PTTW) from the MECP for the works. Similarly, any discharges to the natural environment over 10,000 L/day may only be permitted by obtaining an Environmental Compliance Approval (ECA)

5.9 It is important to recognize that this hydrogeological investigation has been limited to the shallow soils encountered on the Site. For all intents and purposes, the conclusions and recommendations provided in this report are limited to the depth of the boreholes presented herein.

5.10 Groundwater samples from the two (2) most downgradient wells (MW-1 and BH25-5) appear to satisfy the Regional Municipality of Durham's Sewer-Use By-Law water quality criteria, provided the dewatering activities can limit the amount of sediment in the water being discharged. It is expected that the groundwater below the site should be suitable to be discharged to the Region's infrastructure. However, confirmation of acceptable conditions may be needed prior to any dewatering activities.

5.11 The Site is partially mapped as occurring within a Significant Recharge Area, which is inconsistent with the geology found on-site. Regardless, post-development SWM controls should strive to maintain the pre-development water balance.

5.12 As the current development plan is purely conceptual, with limited details regarding infrastructure, this report has been prepared as a preliminary hydrogeological study to help with the planning and design components of the project. Details with respect to the need for construction and/or permanent dewatering (i.e., constructed drainage) and the suitability of site-specific SWM features would need to be provided under separate cover once those details become available.

As specific components of the development will likely be developed by others over an unknown number of years, it is expected that each component will require satisfactory completion of a site-specific hydrogeological study to address the specific condtions. Those studies should utilize this report for background and as a way to measure how conditions have changed over time (i.e., as the development progresses). As a result, the conclusions and recommendations provided by this report are expected to be modified accordingly.

5.13 The feasibility of open loop (groundwater source) heat pump use at this site has not been assessed and is not recommended. Any such heat pump installations should only be considered if a hydrogeologist has determined that such systems can be utilized without

compromising groundwater availability and quality.

* end of report *

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Principal

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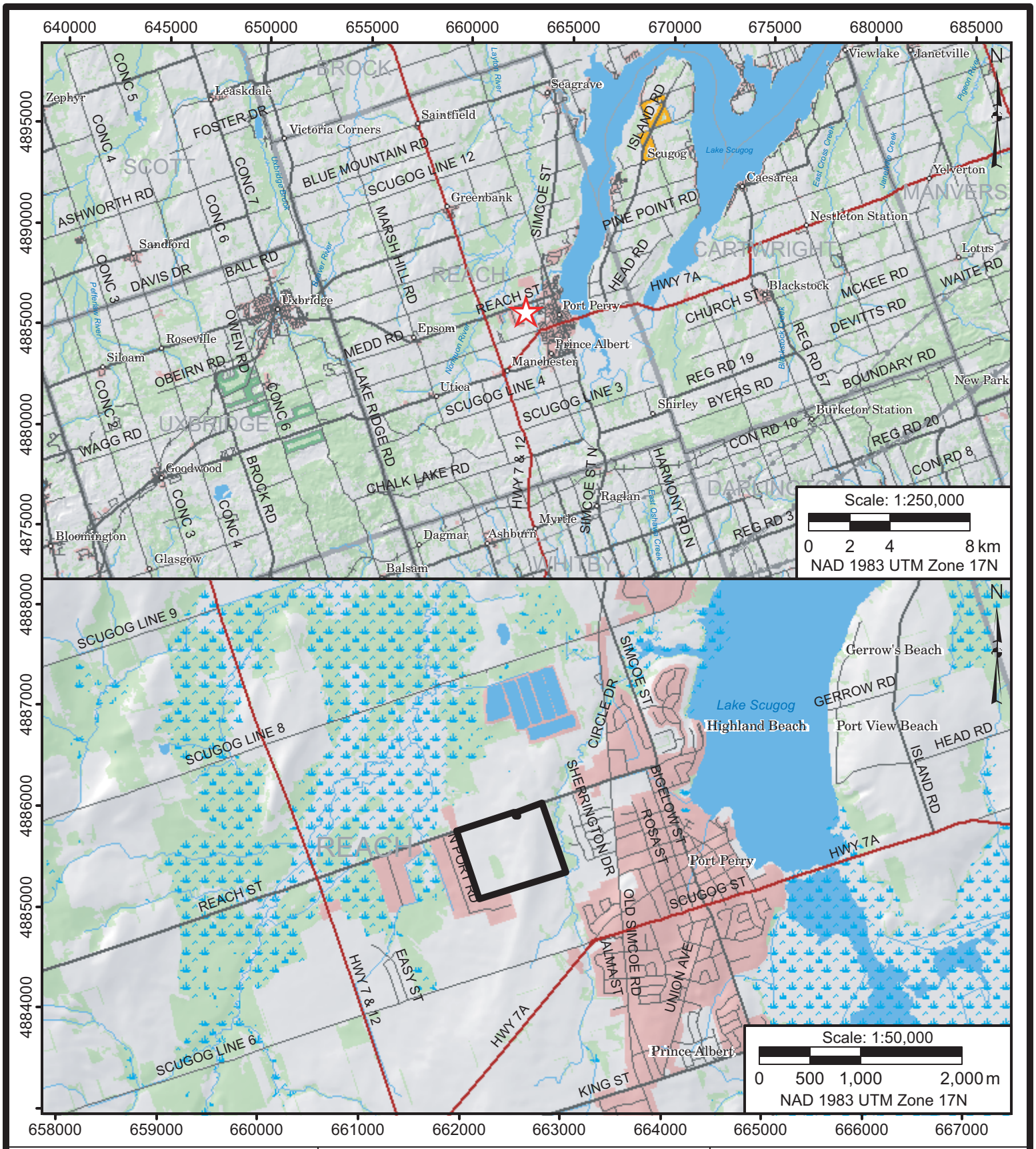
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Figures



Approximate Site Location

Approximate Property Boundary

Notes:
Base mapping provided by the Ontario Ministry of Natural Resources (MNR) Geospatial Ontario (GEO) database, copyright the King's Printer (2026)

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Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry

Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

North American Datum (NAD) 1983

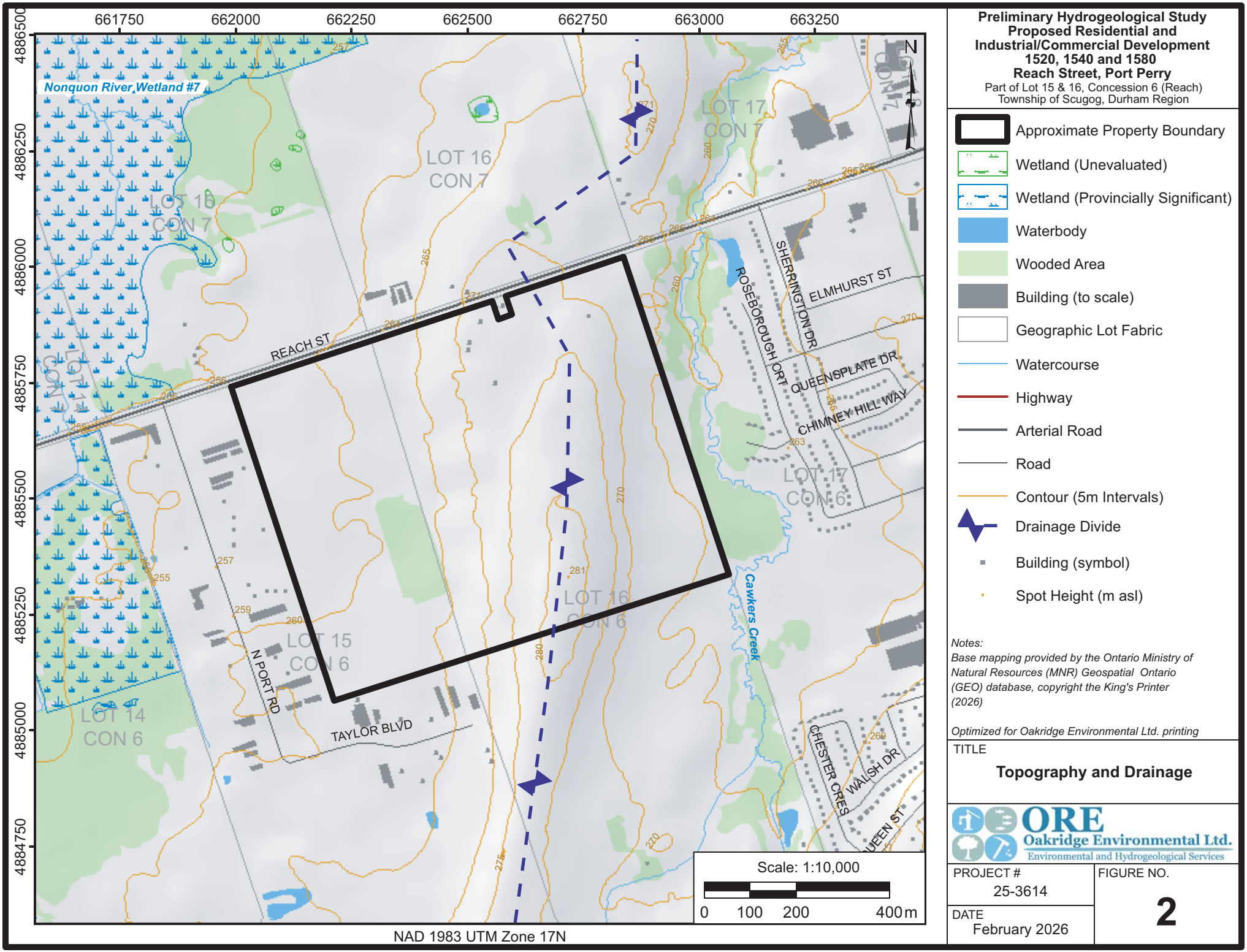
TITLE
General Location

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 25-3514

DATE February 2026

FIGURE NO. **1**



Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry
Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

- Approximate Property Boundary
- Wetland (Unevaluated)
- Wetland (Provincially Significant)
- Waterbody
- Wooded Area
- Building (to scale)
- Geographic Lot Fabric
- Watercourse
- Highway
- Arterial Road
- Road
- Contour (5m Intervals)
- Drainage Divide
- Building (symbol)
- Spot Height (m asl)

Notes:
Base mapping provided by the Ontario Ministry of Natural Resources (MNR) Geospatial Ontario (GEO) database, copyright the King's Printer (2026)

Optimized for Oakridge Environmental Ltd. printing

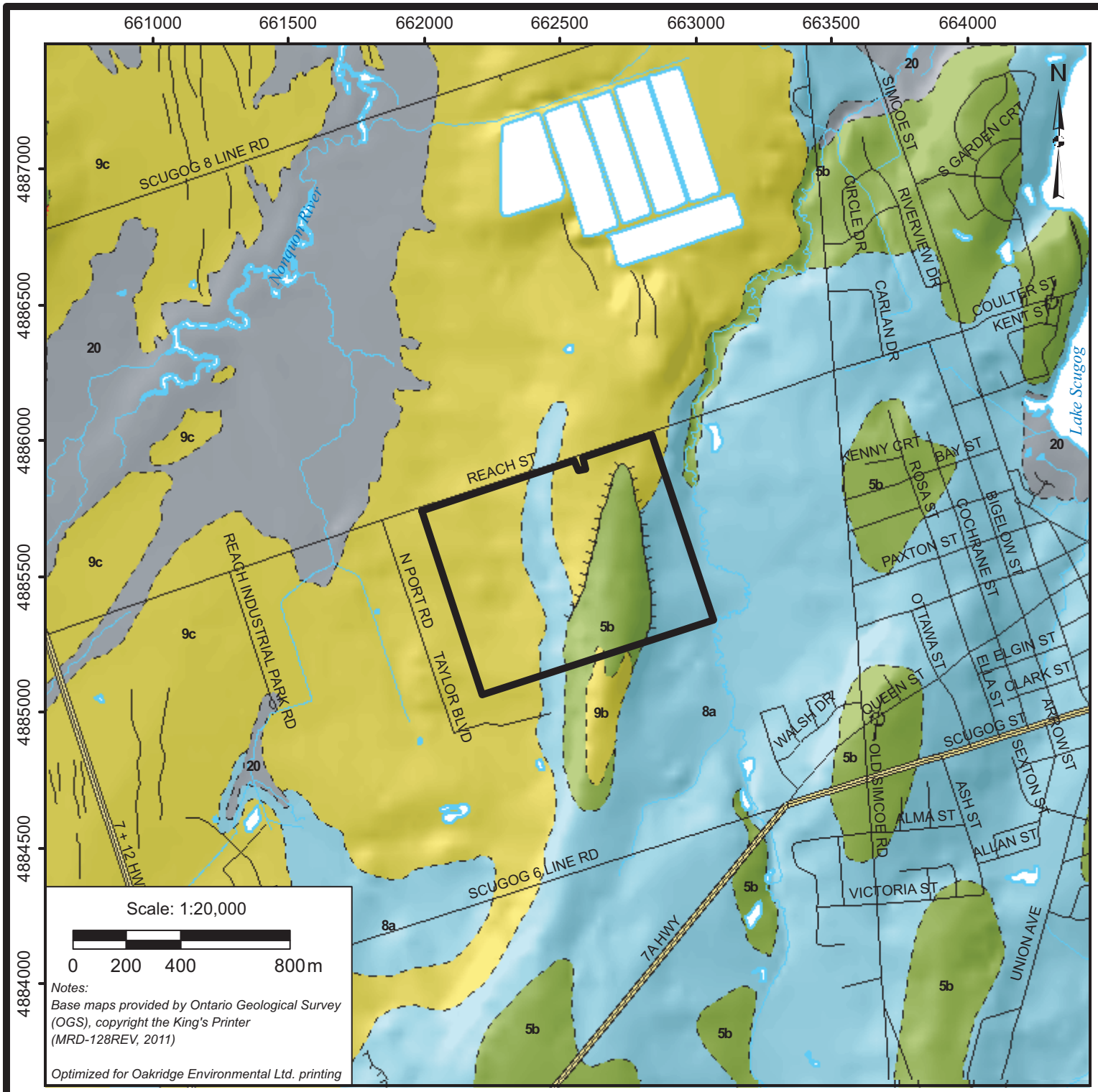
TITLE

Topography and Drainage

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
25-3614	**2**
DATE	
February 2026	

Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580
Reach Street, Port Perry
Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region



NAD 1983 UTM Zone 17N

- Approximate Property Boundary
- Drumlin or Drumlinoid Ridges
- Shore Bluff or Scarp
- Ribbed or Rogen Moraine (arrows indicate direction of ice flow)
- Fluvial Terrace
- Contact (approximate/assumed)
- 5b — Glacial Deposits (Till): Stone-poor, carbonate-derived silty to sandy till
- 8a — Fine-textured glaciolacustrine deposits: Massive-well laminated
- 9b — Coarse-textured glaciolacustrine deposits: Littoral-foreshore deposits
- 9c — Coarse-textured glaciolacustrine deposits: Foreshore-basinal deposits
- 20 — Organic deposits
- Waterbody
- Watercourse

TITLE

Surficial Geology

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
25-3614	3
DATE	
February 2026	

662000 662250 662500 662750 663000 663250

4886000 4885750 4885500 4885250 4885000

N

B

A

A'

B'

REACH ST

N PORT RD

ELMHURST ST

ROSEBOROUGH CRT

ROSEBOROUGH DR

SHERRINGTON DR

6-1

11-1

W-5

HA25-15

BH25-5

W-3

W-4

T-9

W-2

W-1

BH25-3

T-8

MW-2

MW-3

MW-4

T-1

MW-1

HA25-14

BH25-9

HA25-6

HA25-3

HA25-4

HA25-5

T-14

BH25-4

BH25-10

T-15

T-2

BH25-8

T-7

T-10

BH25-2

T-13

BH25-6

HA25-11

HA25-10

HA25-13

BH25-1

HA25-7

HA25-8

T-3

HA25-1

HA25-2

HA25-12

T-12

BH25-7

T-6

HA25-9

T-11

T-5

T-4

Scale: 1:5,000

0 50 100 200 m

NAD 1983 UTM Zone 17N

Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry

Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

- Approximate Property Boundary
- Approximate Easement (Bell Canada)
- Glacial Till Terrain
- Galciolacustrine Terrain
- Domestic Bored/Dug Well
- Domestic Drilled Well
- Monitoring Well (2025)
- Monitoring Well (Historical)
- Mechanized Borehole (2025)
- Manual Auger Borehole (2025)
- Off-Site Borehole / Monitoring Well (RWDI)
- Test Pit (Historical)
- Watercourse (Ontario GeoHub)
- A to A' Line of Section (Refer to Figure 5 for Projected Cross Section)
- B to B' Line of Section (Refer to Figure 6 for Projected Cross Section)

Notes: Imagery and base map features provided by Ontario GeoHub (SCOOP, 2023)

Feature locations determined by differential GPS (+/- 3.0 m)

Base plan provided by Sabourin Kimble & Associates Ltd. (2025)

Off-site borehole/monitoring well locations provided by Rown Williams Davies & Irwin Inc. (RWDI, 2025)

Historical terrain data provided by Gibson & Associates Ltd. (1991)

Optimized for printing by Oakridge Environmental Ltd.

TITLE

Borehole Location Plan

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

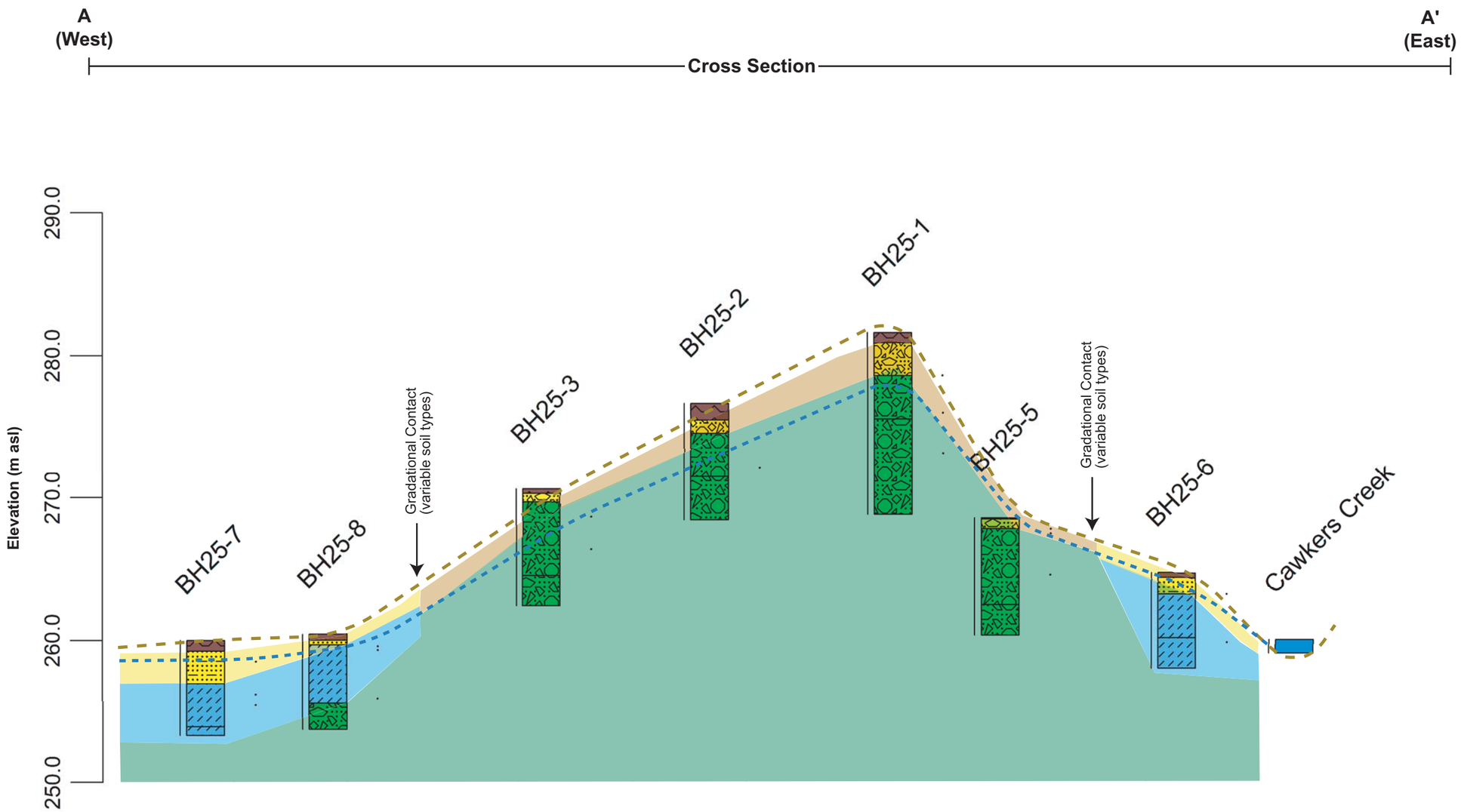
PROJECT # 25-3614

DATE February 2026

FIGURE NO. **4**

Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry

Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region



Annotation Legend

- Interpreted Ground Surface
- Interpreted Water Table / Potentiometric Surface
- Glaciolacustrine Sand
- Glaciolacustrine Silt/Clay
- Upper (Weathered) Sandy Till
- Lower Silt Till

- Topsoil
- Silty Sand (SM to SP Type)
- Clayey Silt (ML to CL Type)
- Upper Weathered Till (SM Type)
- Lower Till (ML Type)

Approximate Distance Along Projected Line of Section

0 50 100 200 m

Vertical Exaggeration: 10

Notes: Wells from the Water Well Information System, Ministry of the Environment, Conservation and Parks (MECP), 2023.

Refer to projected line of section on Figure 4.

Optimized for Oakridge Environmental Ltd. printing.

TITLE

West-East Local Cross Section

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 25-3614

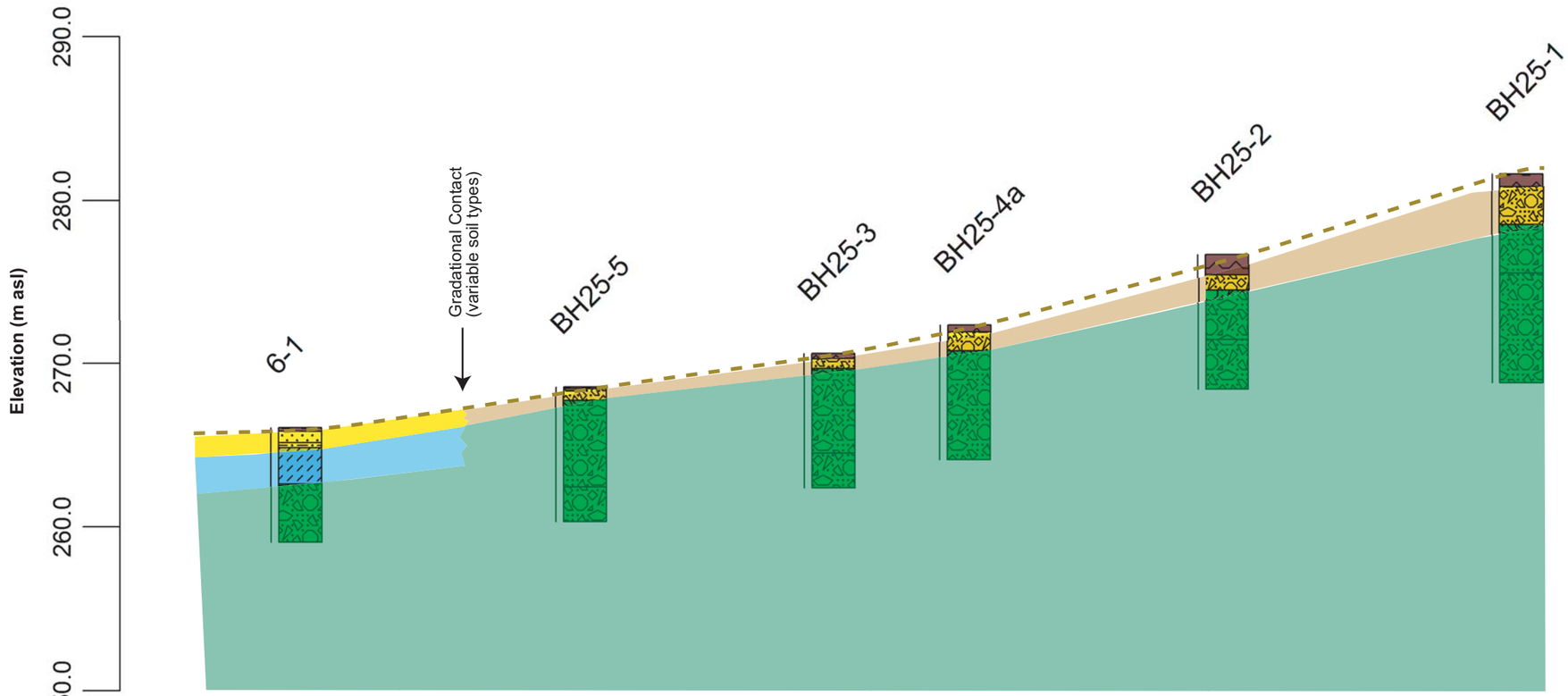
DATE February 2026

FIGURE NO. **5**

B
(North)

Cross Section

B'
(South)



Annotation Legend

- Interpreted Ground Surface
- Glaciolacustrine Sand
- Glaciolacustrine Silt/Clay
- Upper (Weathered) Sandy Till
- Lower Silt Till

Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry

Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

- Topsoil
- Silty Sand (SM to SP Type)
- Clayey Silt (ML to CL Type)
- Upper Weathered Till (SM Type)
- Lower Till (ML Type)

Approximate Distance Along
Projected Line of Section

0 50 100 200 m

Vertical Exaggeration: 20

Notes: Wells from the Water Well Information System, Ministry of the Environment, Conservation and Parks (MECP), 2023.

Refer to projected line of section on Figure 4.

Optimized for Oakridge Environmental Ltd. printing.

TITLE

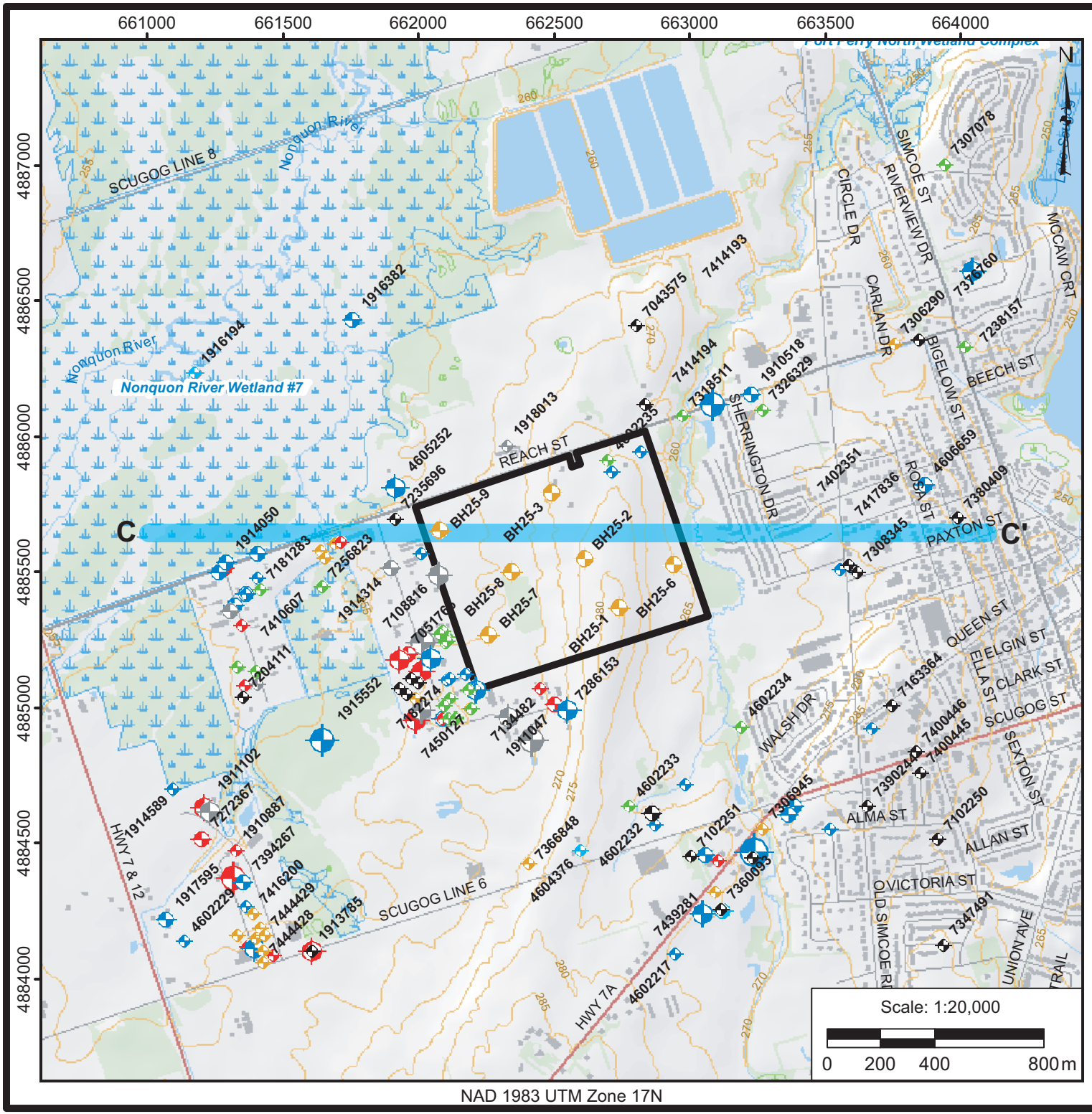
North-South Local Cross Section

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #
25-3614

DATE
February 2026

FIGURE NO.
6



Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry
Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

- Approximate Property Boundary
- C to C' Line of Section (Refer to Figure 8 for Projected Cross Section)
- Domestic Well
- Abandoned Well
- Test Hole
- Monitoring Well
- Commercial Well
- Industrial Well
- Livestock/Irrigation Well

Driller's Test Rate (GPM):

0 → >50

Notes:
Base mapping provided by the Ontario Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database, copyright the King's Printer (2025)

Wells from the Water Well Information System, Ministry of the Environment, Conservation & Parks (MECP), 2023.

Optimized for Oakridge Environmental Ltd. printing

TITLE

Recorded Well Locations

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

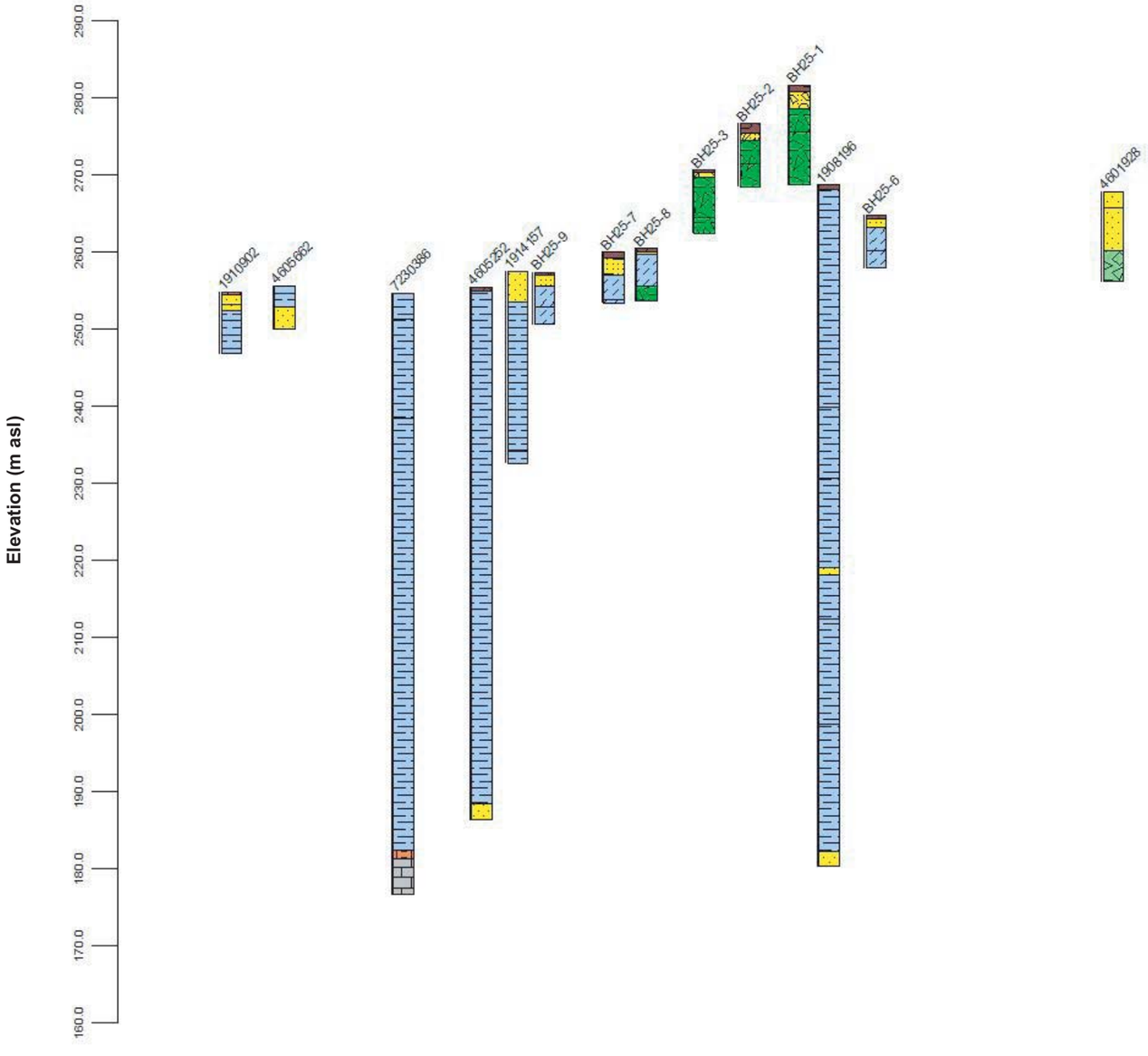
PROJECT #	FIGURE NO.
25-3614	7
DATE	
February 2026	

C
(West)

Cross Section

C'
(East)

Approximate Extent of Site



Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry

Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

- Static Water Level
- Water Found
- Boulders
- Clay
- Limestone
- Gravel
- Sand
- Till
- Topsoil

Approximate Distance Along
Projected Line of Section

0 200 400 800 m

Vertical Exaggeration: 20

Notes: Wells from the Water Well Information System, Ministry of the Environment, Conservation and Parks (MECP), 2023.

Refer to projected line of section on Figure 7.

Optimized for Oakridge Environmental Ltd. printing.

TITLE
West-East Regional Cross Section

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #
25-3614

DATE
February 2026

FIGURE NO.
8

Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry

Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

662000 662250 662500 662750 663000

4886000 4885750 4885500 4885250

REACH ST
N PORT RD
ROSEBOROUGH CRT

W-5 W-4 W-3 W-2 W-1
BH25-5 (1.11 mbgs)
BH25-3 (1.92 mbgs)
BH25-4 (3.94 mbgs)
BH25-10
BH25-2
BH25-6
BH25-8 (0.90 mbgs)
BH25-7 (1.72 mbgs)
BH25-1 (5.60 mbgs)
BH25-9
MW-2 MW-3 MW-4 MW-1
HA25-15 HA25-14 HA25-6 HA25-3 HA25-4 HA25-5 HA25-10 HA25-11 HA25-13 HA25-7 HA25-8 HA25-1 HA25-2 HA25-12 HA25-9

N

- Approximate Property Boundary
- Approximate Easement (Bell Canada)
- Domestic Bored/Dug Well
- Domestic Drilled Well
- Monitoring Well (2025)
- Monitoring Well (Historical)
- Mechanized Borehole (2025)
- Manual Auger Borehole (2025)
- Test Pit (Historical)
- Watercourse (Ontario GeoHub)
- Water Table Contours
- Interpreted Groundwater Flow Direction

Scale: 1:4,000

0 50 100 200 m

NAD 1983 UTM Zone 17N

Notes: Imagery and base map features provided by Ontario GeoHub (SCOOP, 2023)

Static water level elevations, water table contours and interpreted groundwater flow direction from December 17, 2025 water level data

Water table contours generated using a simple triangulation algorithm with no edge point interpolation

Feature locations determined by differential GPS (+/- 3.0 m)

Base plan provided by Sabourin Kimble & Associates Ltd. (2025)

Historical test pit locations after Gibson & Associates (1991)

Optimized for printing by Oakridge Environmental Ltd.

TITLE

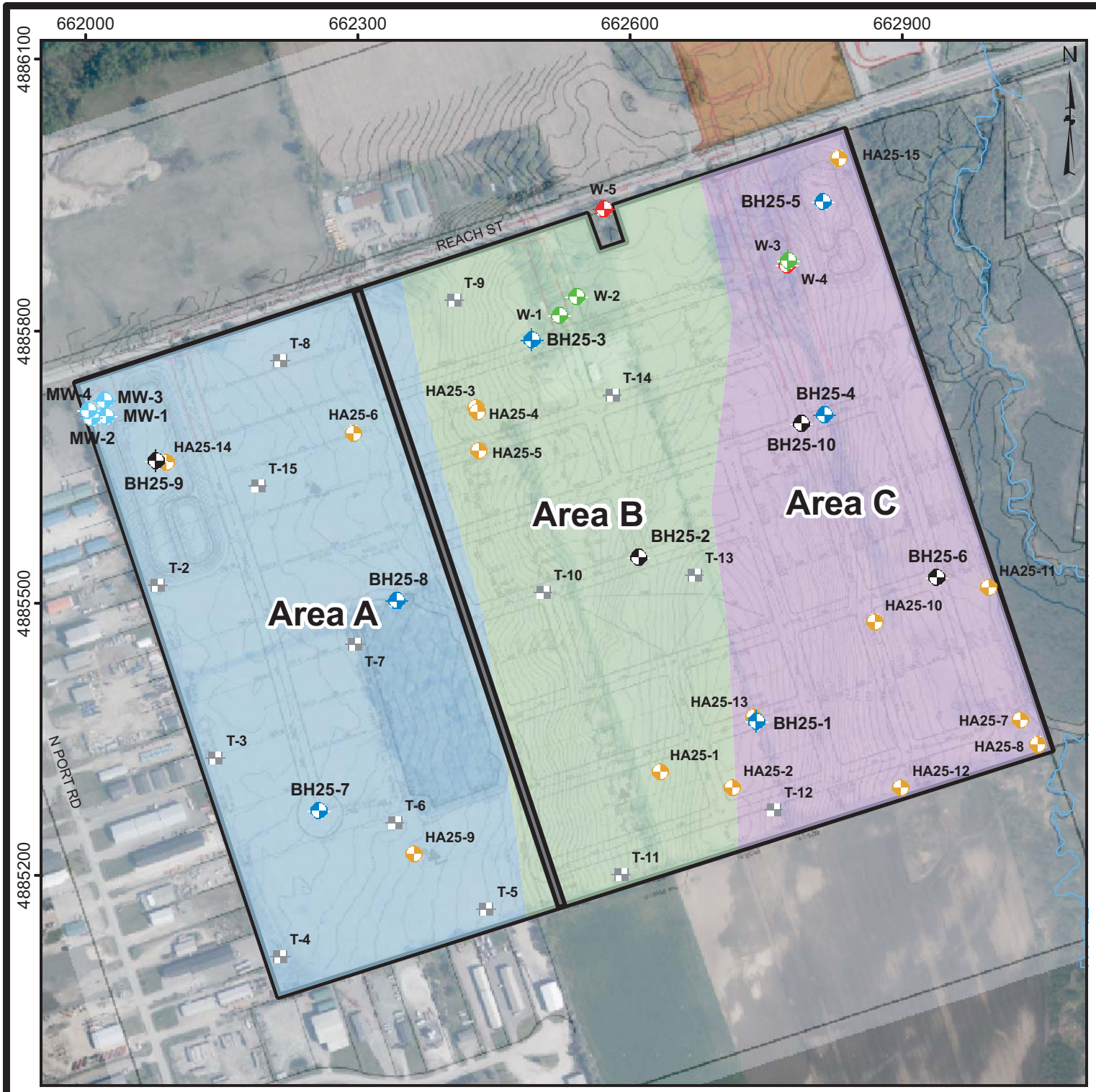
Groundwater Flow Pattern

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 25-3614

DATE February 2026

FIGURE NO. **9**



NAD 1983 UTM Zone 17N

Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry

Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

- Approximate Property Boundary
- Approximate Easement (Bell Canada)
- Area A
- Area B
- Area C
- Domestic Bored/Dug Well
- Domestic Drilled Well
- Monitoring Well (2025)
- Monitoring Well (Historical)
- Mechanized Borehole (2025)
- Manual Auger Borehole (2025)
- Test Pit (Historical)
- Watercourse (Ontario GeoHub)

Scale: 1:6,000

0 50 100 200 m

Notes: Imagery and base map features provided by Ontario GeoHub (SCOOP, 2023)

Base plan provided by Sabourin Kimble & Associates Ltd. (2025)

Historical terrain data provided by Gibson & Associates Ltd. (1991)

Optimized for printing by Oakridge Environmental Ltd.

TITLE

Infiltration Areas

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
25-3614	10
DATE	
February 2026	

Appendix A

Pre-consultation Letter

PRE-CONSULTATION & COMPLETE APPLICATION SUBMISSION REQUIREMENTS

Pre-Consultation Record Date:	March 4, 2025
Owner(s):	Richard Wannop
Applicant:	Malone Given Parsons
Address and Location:	1520, 1540 1580 Reach Street
Proposed Use(s):	New Community and Employment Area
Application Type(s) Requested:	Official Plan Amendments, Zoning By-law Amendments, Draft Plan of Subdivision

Township Staff and Outside Agencies:

- Valerie Hendry, Township of Scugog (Planning) – vhendry@scugog.ca
- Nick Dawkins, Township of Scugog (Chief Building Official) – ndawkins@scugog.ca
- Denise Stephenson, Township of Scugog (By-law Enforcement) – dstephenson@scugog.ca
- Grant Taylor, Township of Scugog (Public Works) – gtaylor@scugog.ca
- Ethan Green, Township of Scugog (Fire Prevention) – egreen@scugog.ca
- Bruce Alexander, RJ Burnside (Peer Engineering) - Bruce.Alexander@rjburnside.com
- Kurt Niles, Region of Durham (Works Department) – Kurt.Niles@durham.ca
- Lesley Kennedy, Region of Durham (Health Department) – Lesley.Kennedy@durham.ca
- Harmanpreet Kaur, Kawartha Conservation Authority – hkaur@kawarthaconservation.com
- Yan Yu, Durham District School Board - yan.yu@ddsb.ca
- Jody Dale, Durham Catholic District School Board – jody.dale@dcdsb.ca

DESCRIPTION OF PROPOSAL:

The applicant is proposing to develop a new community in Port Perry on certain lands municipality known as 1520, 1520, and 1580 Reach Street. Regional Council supported a conversion of 2/3rds of the subject lands from Employment Area to Community Areas in the Region's Official Plan. The remainder of the lands are Employment and also form part of the subject lands. The subject lands are approximately 40 hectares Community Areas and approximately 20 hectares Employment Areas (see below).

The applicant is seeking an Official Plan Amendment, Zoning By-law Amendment and Draft Plan of Subdivisions to develop the new community and employment area. The applicant's planning consultant has indicated to the Township that as part of their future application submission, studies will be submitted to address the Regional Official Plan secondary plan policies, and to conform with other provincial, Regional and local policies. They have also advised that they will be engaging with the public and agencies to help shape the final outcome of the land uses for these lands before approval.

The proposed development consists of two medium/high density residential blocks, open space and two residential streets within the Community Areas designation. A plan of subdivision will be required

for all of the subject properties to facilitate the creation of any proposed local roads, the various multiple residential blocks, and open space blocks within the Community Areas designation.

The Employment Areas are also proposed to be developed through a Draft Plan of Subdivision.

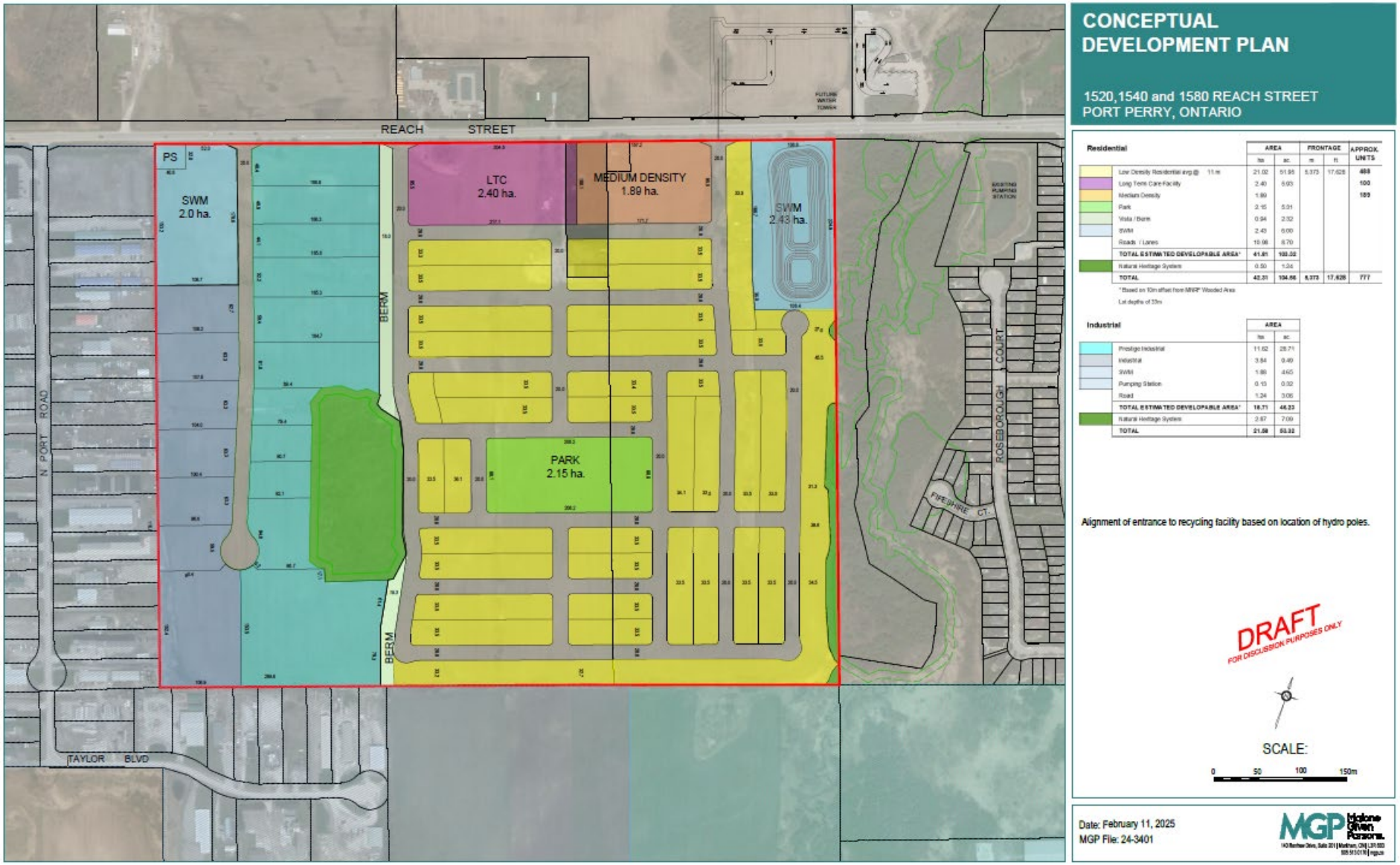
PLANNING POLICY CONTEXT:

REGIONAL OFFICIAL PLAN:	Community Areas and Employment Areas
SCUGOG OFFICIAL PLAN:	Prestige Industrial, General Industrial, Open Space, with Proposed Local Roads
ZONING BY-LAW 14-14:	Prestige Industrial (M1(H)), and General Industrial (M2(H)), Environmental Protection

MAP OF SUBJECT LAND:



PROPOSED PLAN:



AGENCY COMMENTS:

Region of Durham – Health Department

- The proposed development will be serviced by municipal water and sanitary services. The Health Department only requirements would be:
    - All existing private sewage systems be properly abandoned as per best management practices.
    - All existing private water wells be abandoned as per Ministry of the Environment's Regulation 903: Water wells.

Region of Durham – Works Department

- **1520 & 1580 Reach Street**

Municipal Servicing:

- The first phase, and full build out, of this Draft Plan will potentially be impacted in time, by other active developments in Port Perry and water and wastewater infrastructure projects. This will need to be confirmed and monitored as all applications move forward. The Region allocates capacity upon the execution of Subdivision Agreements on phase-by-phase basis. A list of active and future vertical infrastructure projects that could impact the timing for this development as follows:
- New Port Perry Wells
- New Port Perry Water Treatment
- New Port Perry Water Storage
- Reach Street SSPS Expansion
- New Employment Lands SSPS
- New Sewage Forcemains from the above SSPSs to the Nonquon WPCP.
- Future Expansion at the Nonquon WPCP.
- The applicant is required to submit a **Functional Servicing Report** with a future planning application.

Transportation:

- Reach Street is classified as a Type 'B' Arterial Road that required a right-of-way width of 30.0m as per the Region's Official Plan. Therefore, no road widening is required.
- The applicant shall provide a **Traffic Impact Study**. The Terms of Reference shall be scoped by the Region's Transportation group and the Township of Scugog.

Waste Management

- The Region of Durham provides organic, yard waste and garbage collection services to draft plans of subdivisions containing **residential lots and freehold townhouse blocks** in Township of Scugog.
- Any dead-end municipal road(s) must be designed and built with a permanent or temporary, cul-de-sac or "T" type turnaround. If the

residential development is built in stages or by multiple builders, municipal waste service may be delayed to completed homes due to access availability. All municipal road networks will be reviewed through the draft plan approval process and through the detailed design of any phase limits to ensure it complies with the *Technical and Risk Management Guidelines for Municipal Waste Collection Services on Private Property and for New Residential Developments in Durham Region*. All municipal roads, including rear laneways, must be built to a Regionally approved, area municipal standard road cross sections.

- Waste Management collection for residential **blocks** (other than freehold townhouse blocks) including any units within these blocks which will front onto a municipal road will be assessed for waste collection through the Site Plan approval process.
- On June 3, 2021, Ontario filed O.Reg. 391/21 under the Resource Recovery and Circular Economy Act and made product producers responsible for the Blue Box program including collection. The Regional Municipality of Durham no longer provides service for the Blue Box program.

Development Charges/ Regional Subdivision Agreement

- The applicant is required to enter into a Region Subdivision Agreement
- The proposed development is subject to residential that due prior to issuance of a building permit and as set out in the Regional Subdivision Agreement. Any non-residential parcels will be reviewed at the time of a future site plan applicant.

Summary

- As part of a future planning application submission, the applicant shall submit a Functional Servicing Report and a Traffic Impact Study.

Kawartha Conservation Authority (KCA):

- The subject properties are regulated by Kawartha Conservation as it is minimally within the Cawkers Creek floodplain in the southeast corner. Kawartha Conservation does not support new development and/or site alteration within the floodplain. Therefore, a review will be required.
- The following will be required for the planning application-
  - **Detailed Site Plan** showing existing and proposed conditions, including the locations of proposed buildings.
  - **Topographic Survey.**
  - **Floodplain Analysis and Mapping** if any changes are proposed, along with a demonstration that there will be no downstream flooding.
  - **Stormwater Management Plan** to ensure downstream flooding risks are addressed.
  - **Erosion and Sediment Control Plan** to prevent sediment from leaving the property.
  - Additional documents or a site visit may be required as necessary

Durham District School Board	• Staff has reviewed the information on the above-noted plan. Approximately 310 elementary pupils, and 135 secondary pupils may be generated by the above noted application. • Staff participated in the pre-consultation meeting on March 4th, 2025, and looking forward to hearing from the applicant to better understand the timing of the proposed development, once the information is ready, as this would impact the DDSB's future accommodation planning for Port Perry. • We look forward to working with the developer and the Township of Scugog to find a solution that would benefit future homeowners and families within this developing area. • Should you have any questions, please contact me via email at yan.yu@ddsb.ca
Durham Catholic District School Board	• Existing elementary school may be able to accommodate anticipate pupils from this development. • Existing Secondary School in Oshawa would accommodate anticipated pupils from this development.
Township of Scugog (Engineering) **Peer Engineer: R.J. Burnside**	• See attached comment letter and redline plan dated March 5, 2025. • The following reports/studies will be required: ○ **Transportation Study** ○ **Preliminary Noise Feasibility Study** ○ **Land Use Compatibility Study** ○ **Preliminary Geotechnical Study** ○ **Preliminary Hydrological Study and Water Balance Report** ○ **Functional Servicing Report** ○ **Natural Heritage Evaluation/Environmental Impact Study** ○ **Stormwater Management Report with Low Impact Development strategies** ○ **Operations and Maintenance Manual for LID** ○ Any additional drawings/reports at the discretion of the Township's peer engineer.
Township of Scugog (Planning)	• See attached comment letter dated March 4, 2025 • The following plans and reports are required: ○ **Archaeological Study** ○ **Planning Justification Report** ○ **Environmental Impact Study/Natural Heritage Evaluation** ○ **D-4 Land Use on or Near Landfills and Dumps Study**

- **Land Use Compatibility**
- **Noise Analysis**
- **Phasing Plan**
- **Site concept plan**
- **Tree Management Plan/Vegetation Plan**
- **Urban Design Guidelines**
- **Excess Soil Management**
- **Servicing** in consultation with Region
- **Subwatershed Plans**
- **Future Official Plan Amendment and Schedules**
- **Future Zoning By-law Amendment and Draft By-law and Schedule**
- **A Site Screening Questionnaire (SSQ)** or an RSC compliance Phase 1 Environmental Site Assessment Report prepared by a Qualified Person accompanied by the Township's **Reliance Letter** and **Certificate of Insurance** will be required. The SSQ or report(s) should be no more than 18 months old at the time of the application submission and be undertaken in conformity with the Provincial Brownfields Regulation. **A Phase 1 Environmental Site Assessment (ESA)** may be required subject to the Township's review of the Site Screening Questionnaire.

Township of Scugog (Building)

- No comments.

Township of Scugog (By-law Enforcement)

- No comments.

Township of Scugog (Public Works)

- No comments.

Township of Scugog (Fire Prevention)

- Further comments to follow upon submission of the development applications. Show plans for water supply for firefighting including hydrant locations and flow rates for the proposed water supply system. Show road dimensions for fire department access.

SUMMARY OF REQUIRED PLANS/REPORTS (MUST BE SIGNED BY A QUALIFIED PERSON):

Site Plan in accordance with O.Reg 545/06 Schedule 1, number 28
Topographic Survey
Floodplain Analysis and Mapping
Update to Subwatershed Plans and Policies
D-4 Land Use on or Near Landfills and Dumps Study
A Site Screening Questionnaire (SSQ) or an RSC compliance Phase 1 Environmental Site Assessment Report prepared by a Qualified Person accompanied by the Township's Reliance Letter and Certificate of Insurance will be required.
Natural Heritage Evaluation/Environmental Impact Study + Tree Management Plan/Vegetation Plan
Transportation Study
Land Use Compatibility Study - Noise (Point source and Transportation, Vibration, Dust and Odour)
Preliminary Geotechnical Study
Preliminary Hydrological Study and Water Balance Report
Functional Servicing Report + Phasing Plan
Functional Servicing Report prepared in consultation with Region and the Township's Peer Engineer + Phasing Plan +Grading Plan
Stormwater Management Report with Low Impact Development strategies, Prepared in consultation with Region and Township Peer Engineer + Erosion and Sediment Control Measures +Operations and Maintenance Manual for LIDs – can be condition of draft approval
Archaeological Study
Excess Soil Management Plans
Planning Justification Report
Urban Design Guidelines
Future Official Plan Amendment and Schedules
Future Zoning By-law Amendment and Draft By-law and Schedule
Draft Plan of Subdivision

Number of Copies Required:
All Reports and Large sets of Plans: 2 copies of each (large plans to be folded to 8.5 x 11)
Reduced set of Plans (11X17): 1 copy of each set (folded in half)
Electronic files (PDF) on a USB or via electronic file transfer
Ensure dimension on plans are shown in metres.

Application and Agency Review Fees:

KRCA – Please confirm with agency

Region of Durham Planning – (cheques payable to Region of Durham)

Combined Official Plan and Zoning By-law Amendment - $3500

Draft Plan of Subdivision - $ 5000

Durham Region Health – Please confirm with agency

Township of Scugog (cheques payable to Township of Scugog)

Region of Durham Official Plan – $20,260

Scugog Official Plan Amendment - $30,025

Zoning By-law Amendment - $17,765

Draft Plan of Subdivision - $27,015 + $675 per unit

Newspaper Advertisement - $520 per advertisement

Public Open House - $3,340

Township of Scugog Consulting and/or Peer Review Fees

The Township will require the services of external consultant services (such as engineering, legal, and/or architect) as part of the review and approval process for these applications. The Applicant will be invoiced for any associated consulting fees incurred by the Township.

Additional Fees

There will be additional fees associated with subsequent applications and the required building permit application. Development charges will also be owed at the time of building permit issuance. Here is a link to the current Development Charge rates: https://www.scugog.ca/en/do-business/Development-Charges.aspx

***Notwithstanding the fees noted above, all fees are payable based upon the rate in the fee schedule By-law in effect on the date the application is received. Contact Township staff and the Durham Region and KRCA to confirm fees prior to application submission as the fees are subject to periodic review and change.**

***All submitted electronic documents shall be in an accessible format in accordance with O.Reg 191/11 or the application will not be accepted. The applicant shall save electronic documents with the statement "accessible" in the file name.**

Please review these notes at your earliest convenience and advise of any errors or omissions. Please note that if applications are not filed within 12 months of the date of this letter, another pre-consultation meeting and checklist of complete application requirements may be required.

Please note the Township reserves the right to request additional studies, reports, plans, documentation through the processing of the application(s).

Appendix B

Preliminary Concept & Grading Plans

CONCEPTUAL DEVELOPMENT PLAN
Option 3

1520,1540 and 1580 REACH STREET
PORT PERRY, ONTARIO

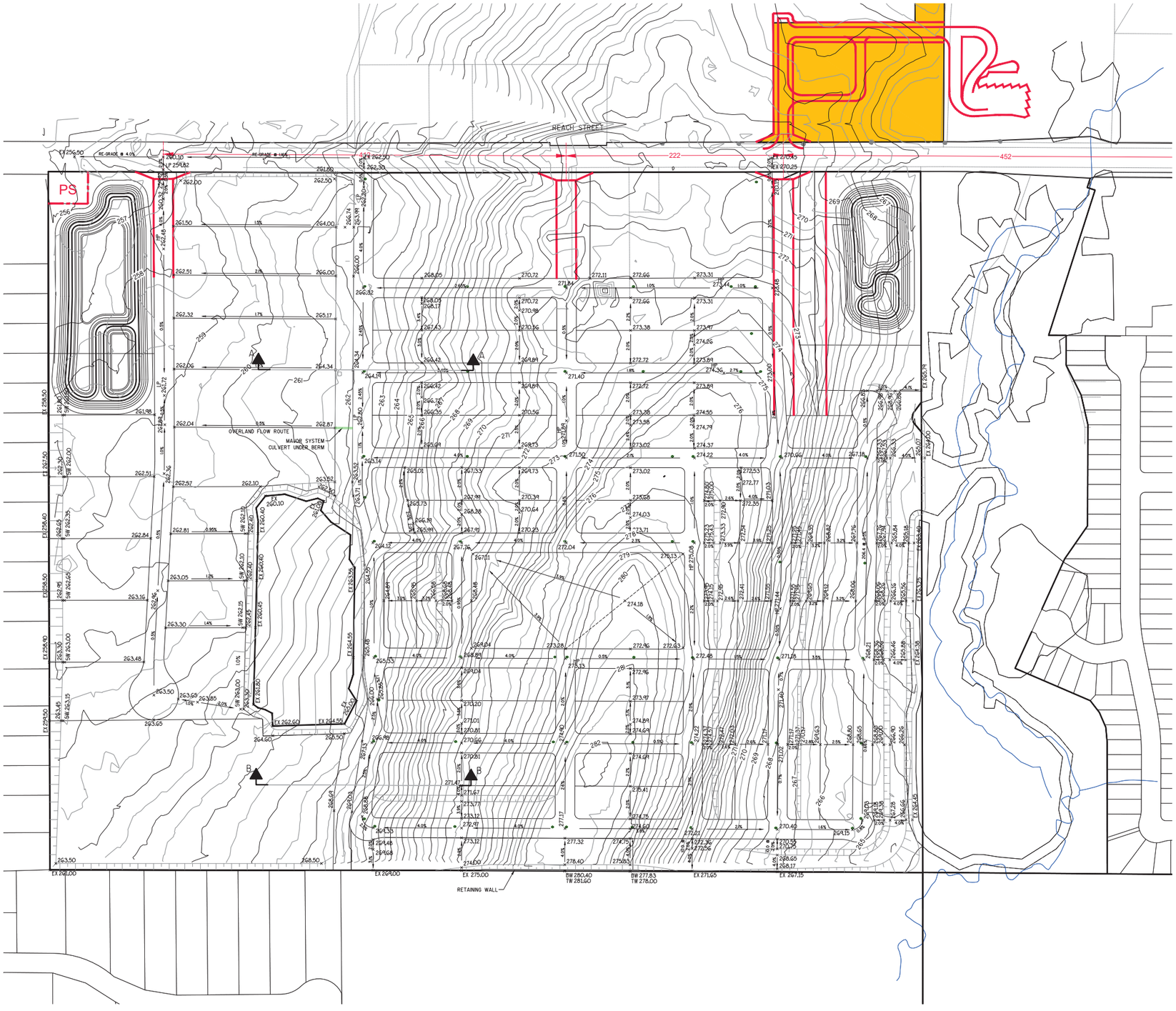
LAND USE		UNITS	AREA
Min. 15.24m Single Detached	o	74	4.20
Min. 12.2m Single Detached	x	174	6.09
Min. 9.8m Single Detached	+	134	3.86
Condominium Townhomes		200 - 350	7.42
Mid-Rise / Mixed Use (45-100uph)		130 - 285	2.71
Long Term Care/Mid-Rise Mixed Use (4-8 Storeys)(45-100uph)		100 250	2.47
Park			2.54
SWM			4.59
Walkway / Overland Flow			0.02
Open Space - Berm			1.61
Natural Heritage System			3.38
Prestige Industrial			5.29
General Industrial			9.28
20m Right of Way			10.03
8.5m Laneway			0.26
TOTAL		812 - 1,267	63.75

Possible Trail Network

DRAFT
FOR DISCUSSION PURPOSES ONLY

Date: January 21, 2026
MGP File: 24-3401

Malone Given Parsons.
140 Renfrew Drive, Suite 201 | Markham, ON | L3R 6B3
905 513 0170 | mgp.ca



1:2000

REACH STREET LANDS GRADING PLAN

SABOURIN KIMBLE & ASSOCIATES LTD.
CONSULTING ENGINEERS

PROJECT NUMBER	FIGURE NUMBER
24:478	1.0

CAD FILE: P:\24\478\Drawing Files\PSR Drawings\478 PSR 1b base.dwg

Appendix C

Field Logs and On-site Monitoring Well Records

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services
647 Neal Drive, Suite 3, Peterborough, Ontario. K9J 6X7
Phone: 705-745-1181 | Fax: 705-745-4163 | www.oakridgeenvironmental.com |

BOREHOLE NO. **BH25-1**

TOTAL DEPTH (m): **12.80 m**

UTM Coordinates :	Elevation (masl) :
662740, 4885369	281.63

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DC & DB**

DATES ASSESSED: **November 25, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

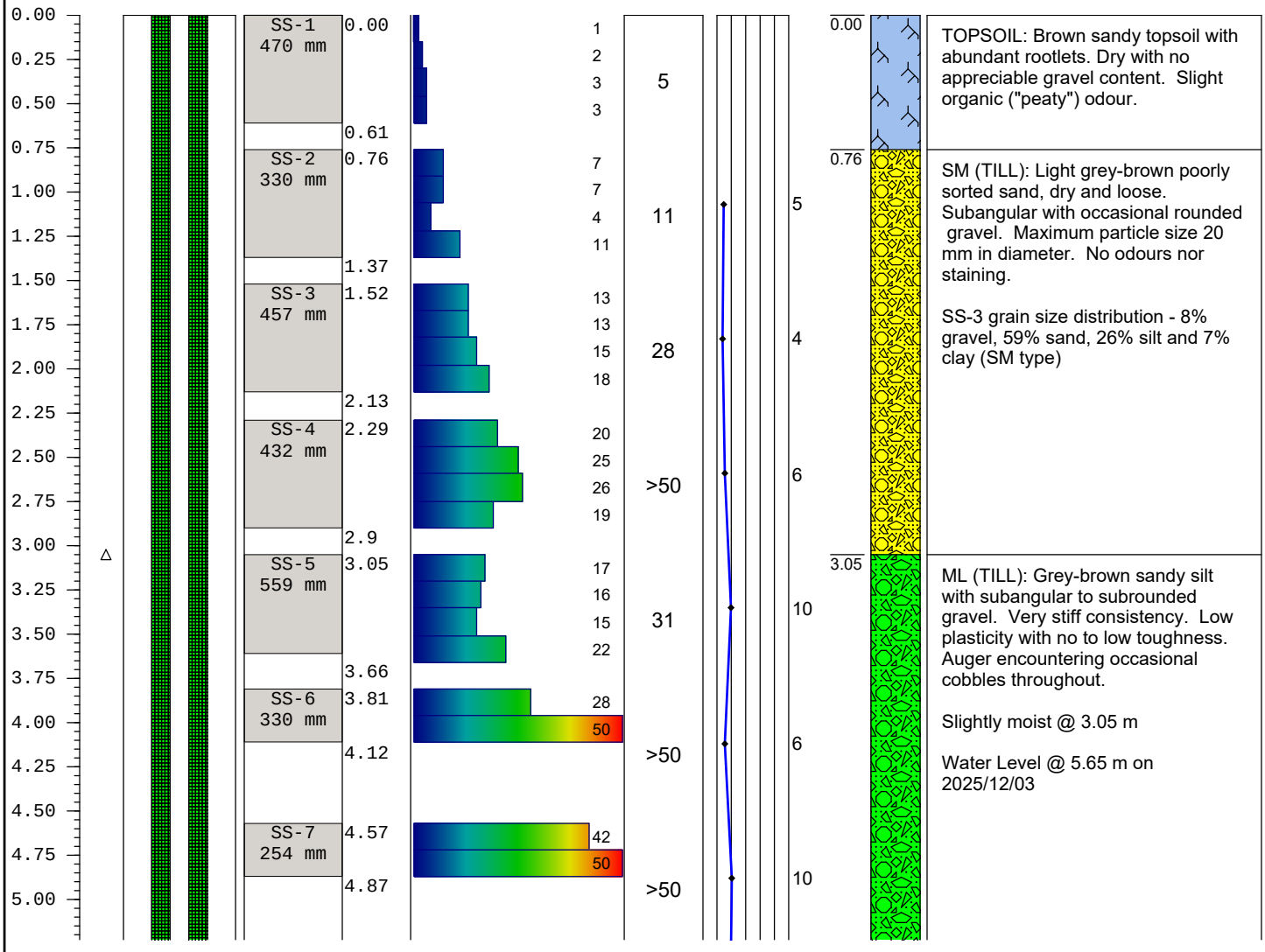
EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Solid Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

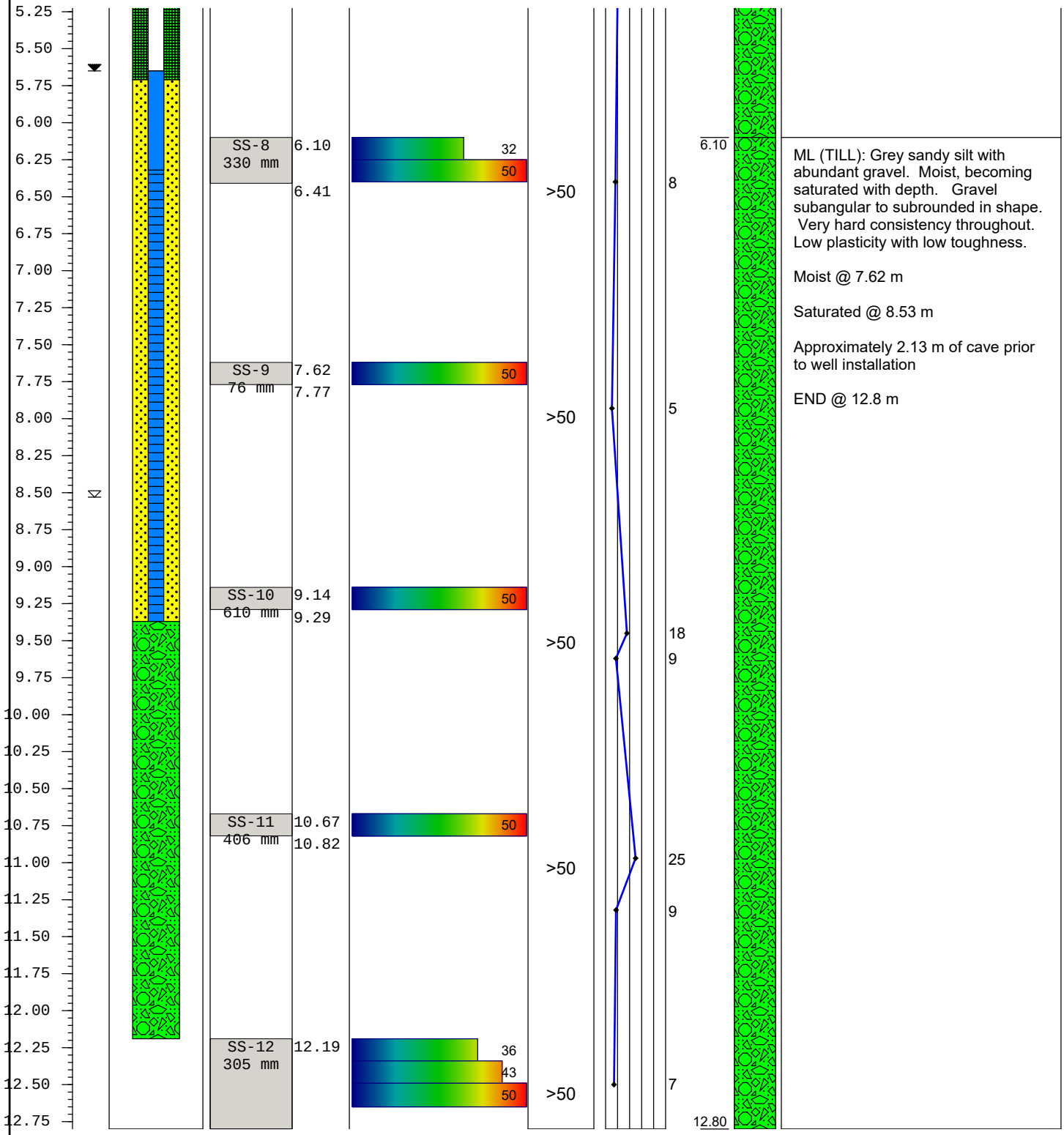
FIELD BOREHOLE LOG



NOTES: 5 Celsius / 5 mm rain starting in afternoon. SPT cave discarded prior to measurements.

FIELD BOREHOLE LOG

Depth	Piezometer Installation	Sample # Recovery	Blow Counts	N Value	Moisture %	Soil Symbol	Soil Description



ML (TILL): Grey sandy silt with abundant gravel. Moist, becoming saturated with depth. Gravel subangular to subrounded in shape. Very hard consistency throughout. Low plasticity with low toughness.

Moist @ 7.62 m

Saturated @ 8.53 m

Approximately 2.13 m of cave prior to well installation

END @ 12.8 m

NOTES: 5 Celsius / 5 mm rain starting in afternoon. SPT cave discarded prior to measurements.

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BOREHOLE NO. **BH25-2**

TOTAL DEPTH (m): **8.23 m**

UTM Coordinates :	Elevation (masl) :
662611,4885549	276.66

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DC**

DATES ASSESSED: **November 25/26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

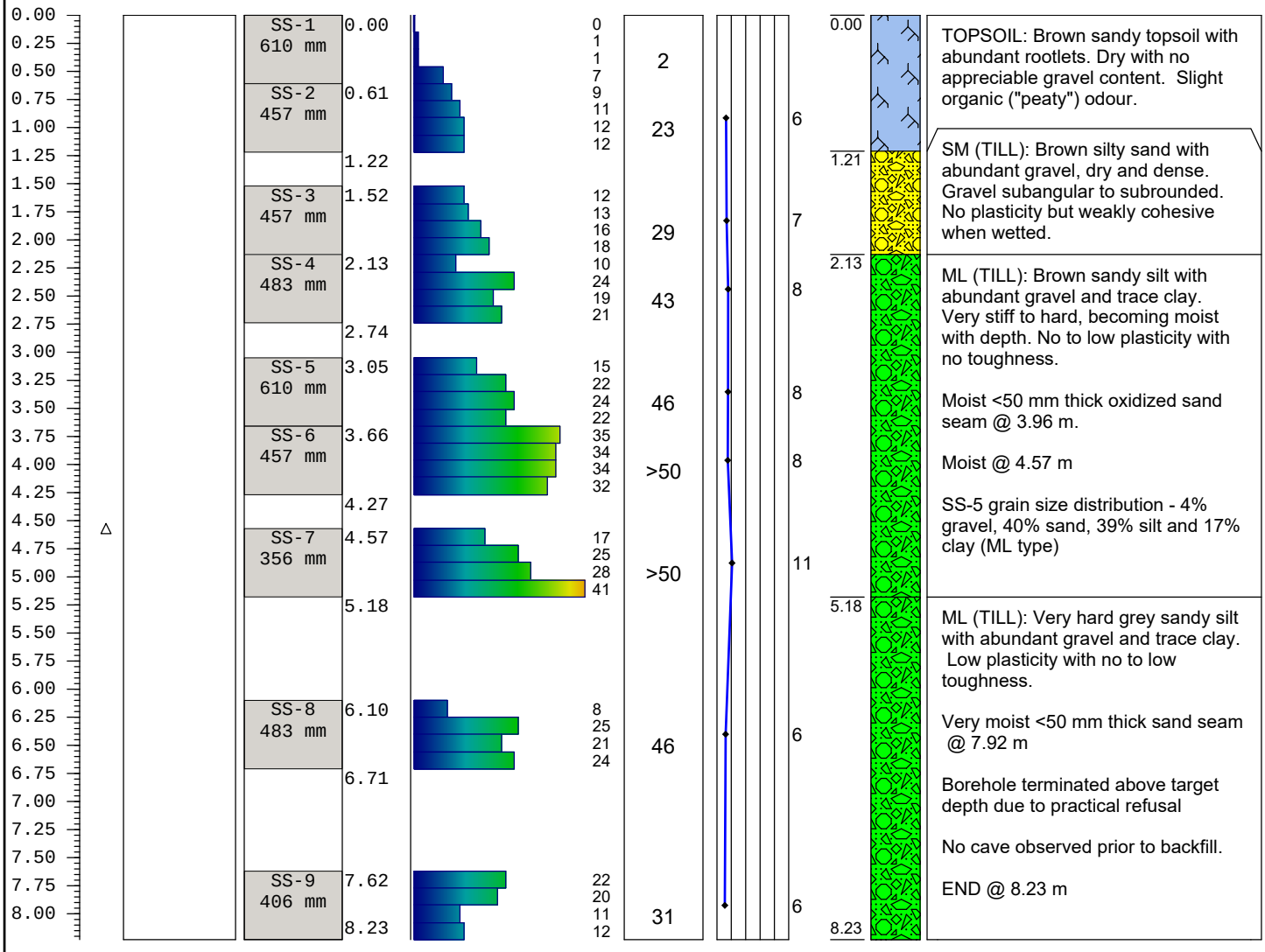
EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Hollow Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG



NOTES: 5 Celsius / rain on and off throughout day. SPT cave discarded prior to measurements.

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BOREHOLE NO. **BH25-3**

TOTAL DEPTH (m): **8.23 m**

UTM Coordinates :	Elevation (masl) :
662492,4885790	270.63

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DM**

DATES ASSESSED: **November 25, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

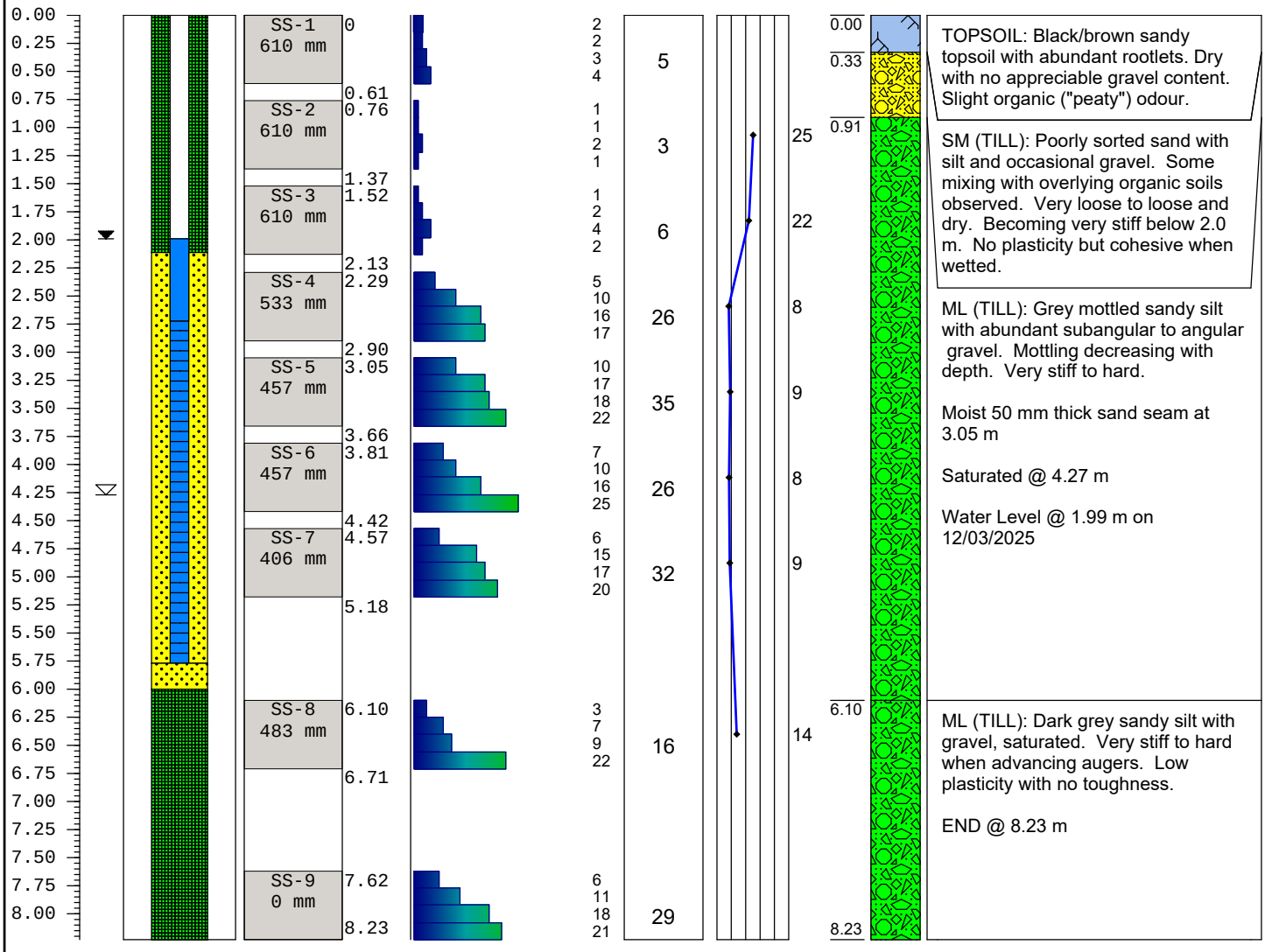
EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Hollow Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG



NOTES: 5 Celsius / 5 mm rain starting in afternoon. SPT cave discarded prior to measurements.

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BOREHOLE NO. **BH25-4**

TOTAL DEPTH (m): **2.74 m**

UTM Coordinates :	Elevation (masl) :
662492,4885790	272.35

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION **Reach Street, Port Perry**

LOGGED BY: **DM**

DATES ASSESSED: **November 25, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

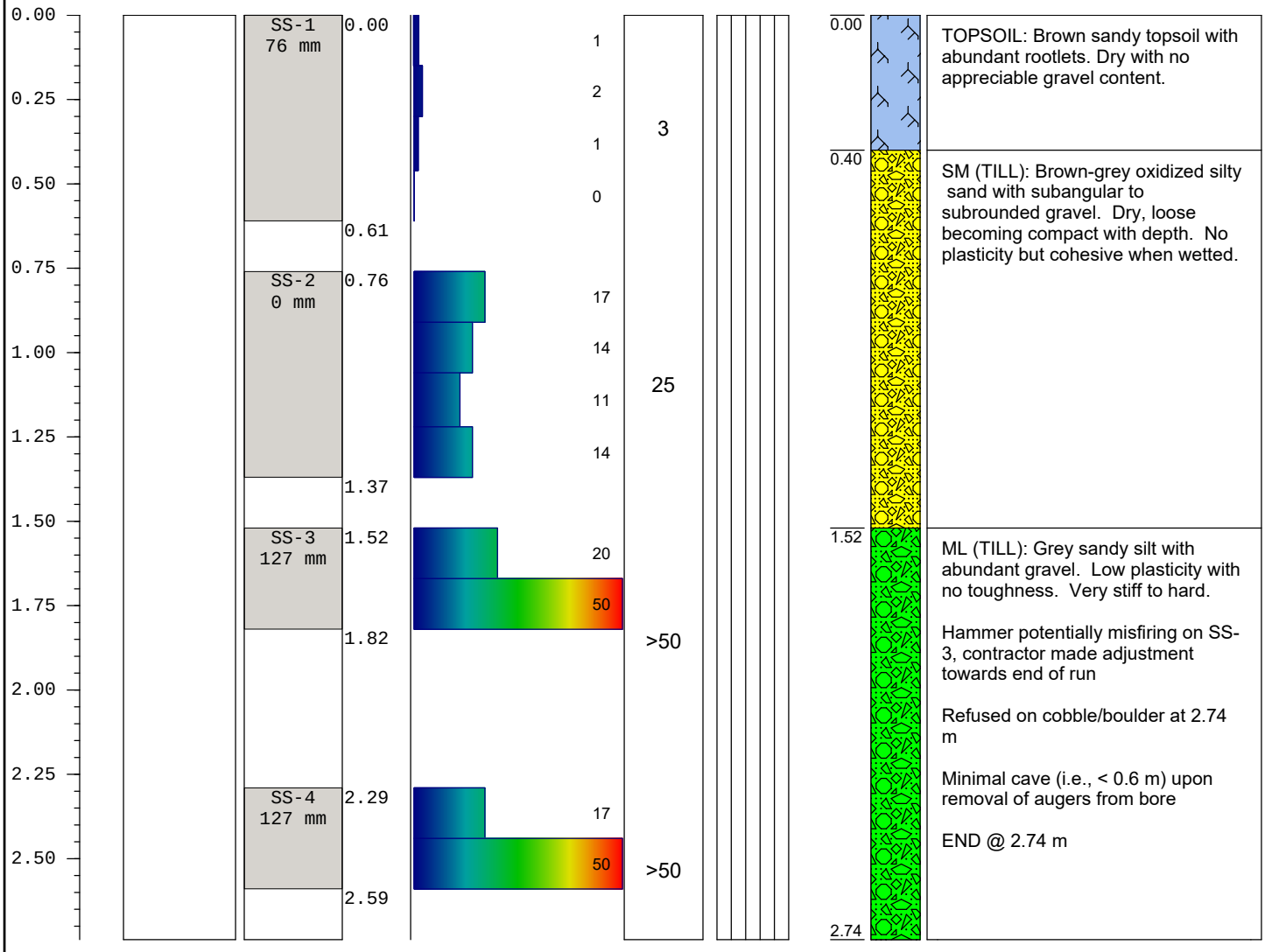
EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Solid Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG



NOTES: 5 Celsius, 5 mm rain starting in afternoon. Moved to BH25-4a, 3 metres north of BH25-4 location.

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BOREHOLE NO. **BH25-4a**

TOTAL DEPTH (m): **8.23 m**

UTM Coordinates :	Elevation (masl) :
662815,4885707	272.35

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DM**

DATES ASSESSED: **November 25, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

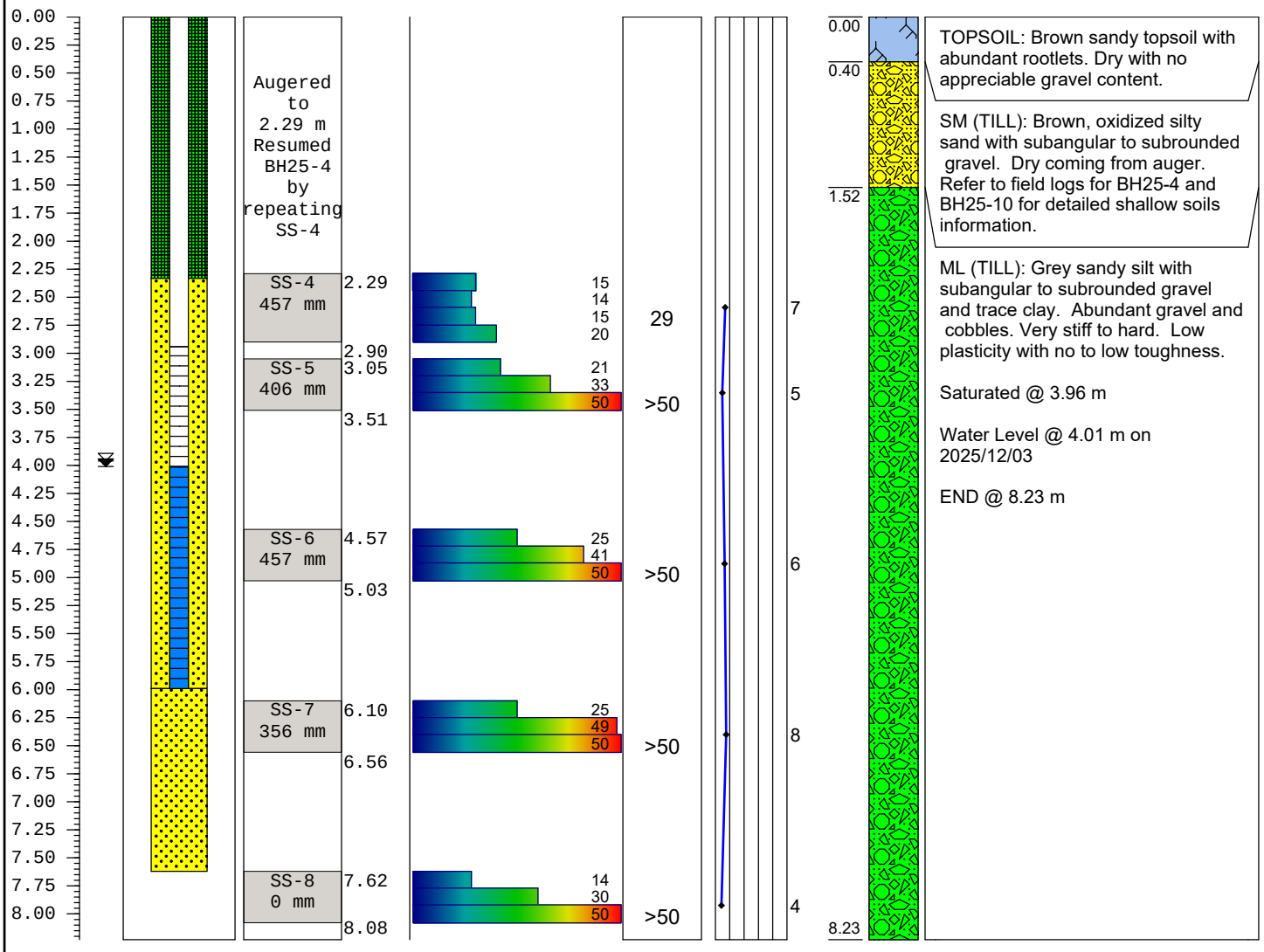
EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Hollow Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG



NOTES: 5 Celsius, 5mm rain starting in afternoon, refer to BH25-4 and BH25-10 for shallow soil lithology

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BOREHOLE NO. **BH25-5**

TOTAL DEPTH (m): **8.23 m**

UTM Coordinates :	Elevation (masl) :
662814,4885942	268.57

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DC**

DATES ASSESSED: **November 27, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

EQUIPMENT: **GEOPROBE 3126GT**

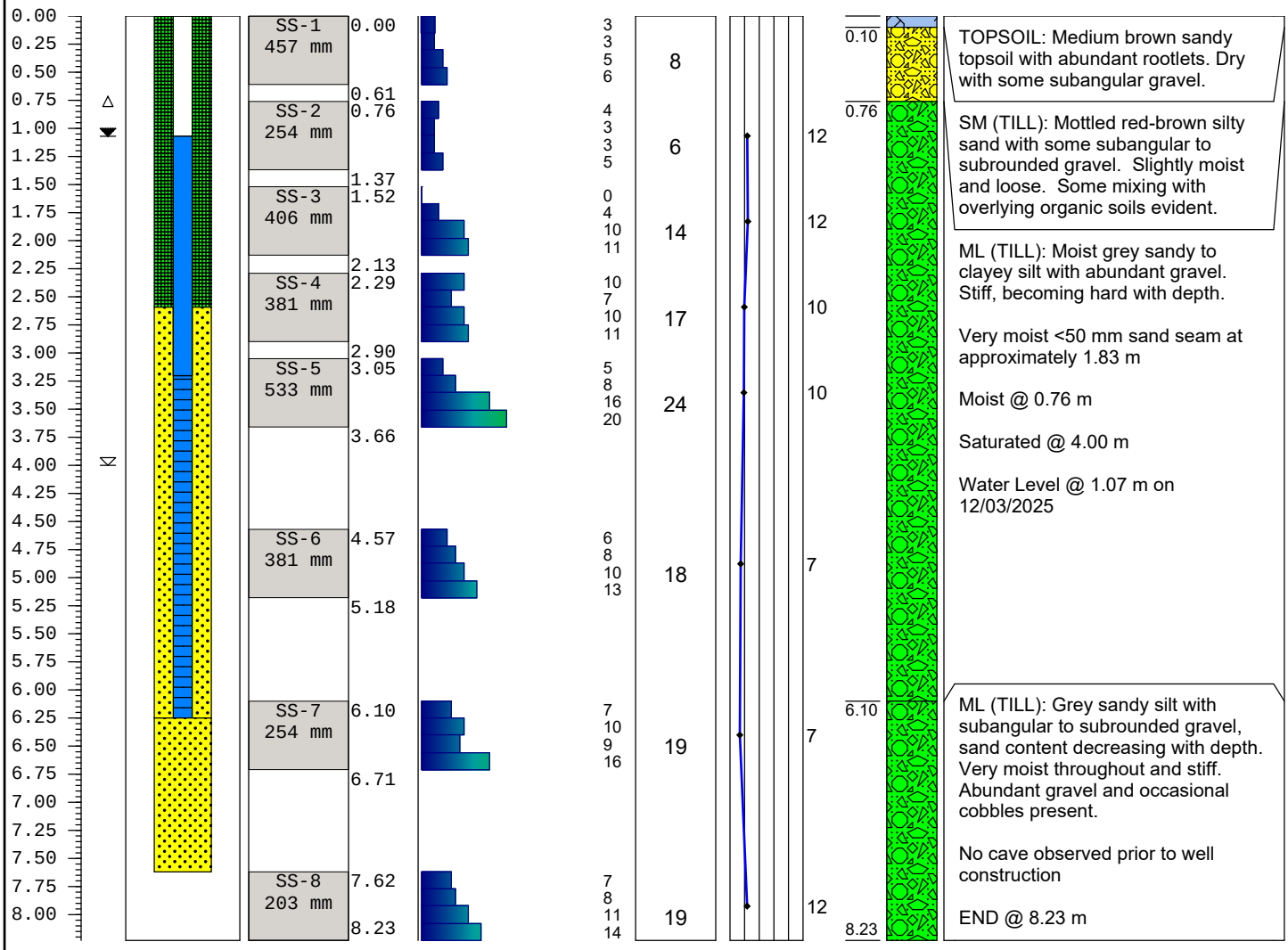
DRILLING METHOD: **Hollow Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG

Depth	Piezometer Installation	Sample # Recovery	Blow Counts	Field N Value	Moisture %	Soil Symbol	Soil Description



TOPSOIL: Medium brown sandy topsoil with abundant rootlets. Dry with some subangular gravel.

SM (TILL): Mottled red-brown silty sand with some subangular to subrounded gravel. Slightly moist and loose. Some mixing with overlying organic soils evident.

ML (TILL): Moist grey sandy to clayey silt with abundant gravel. Stiff, becoming hard with depth.

Very moist <50 mm sand seam at approximately 1.83 m

Moist @ 0.76 m

Saturated @ 4.00 m

Water Level @ 1.07 m on 12/03/2025

ML (TILL): Grey sandy silt with subangular to subrounded gravel, sand content decreasing with depth. Very moist throughout and stiff. Abundant gravel and occasional cobbles present.

No cave observed prior to well construction

END @ 8.23 m

NOTES: 0 Celsius, windy with snow starting in the afternoon. SPT cave discarded prior to measurements.

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BOREHOLE NO. **BH25-6**

TOTAL DEPTH (m): **6.71 m**

UTM Coordinates :	Elevation (masl) :
662939,4885528	264.74

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DC**

DATES ASSESSED: **November 27, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Soild Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG

Depth	Piezometer Installation	Sample # Recovery	Blow Counts	Field N Value	Moisture %	Soil Symbol	Soil Description
0.00		SS-1 610 mm	2 2 4 5	6		0.00	TOPSOIL: Dark brown sandy topsoil with abundant rootlets. Dry with no appreciable gravel content.
0.35						0.35	SM/SP: Mottled brown poorly graded silty sand with no appreciable gravel content and some lamination present. Compact with no plasticity. Weakly cohesive when wetted. Moist @ 1.52 m
1.52	△	SS-2 457 mm SS-3 457 mm	5 6 5 5 3 5 5 7	11 10	27 25	1.52	ML/CL: Brown clayey silt to silty clay with trace sand and no appreciable gravel content. Medium plasticity with low toughness. Moist <50 mm oxidized sand seam at 3.35 m SS-3 grain size distribution - 60% silt, 39% clay and 1% sand (ML type). Composition may vary still vary between ML and CL based on field observations.
4.57	▽	SS-4 584 mm SS-5 610 mm SS-6 559 mm	5 8 10 10 4 6 7 8 3 3 4 4	18 13 7	22 25 26	4.57	ML/CL: Grey silty clay to clayey silt with no appreciable gravel content and trace sand. Soft becoming firm with depth. Medium plasticity with low toughness. Saturated @ 4.88 m Following auger removal, apparent cave to approximately 3.5 m
6.71		SS-7 610 mm	3 5 4 5	9	24	6.71	END @ 6.71 m

NOTES: 0 Celsius, windy with snow starting in the afternoon. SPT cave discarded prior to measurements.

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BOREHOLE NO. **BH25-7**

TOTAL DEPTH (m): **6.71 m**

UTM Coordinates :	Elevation (masl) :
662258,4885271	260.00

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DC & DM**

DATES ASSESSED: **November 26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Hollow Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG

Depth	Piezometer Installation	Sample # Recovery	Blow Counts	Field N Value	Moisture %	Soil Symbol	Soil Description
0.00–0.76		SS-1 610 mm	2 3 3 3	6	16	0.00–0.76	TOPSOIL: Medium brown sandy topsoil with abundant rootlets. Dry with no appreciable gravel content.
0.76–3.05		SS-2 356 mm SS-3 559 mm SS-4 279 mm	3 2 6 9 5 6 9 0 4 7 15 8	8 15 22	28 23 22	0.76–3.05	SM/SP: Mottled brown silty sand, decreasing sand with depth. Dry with no appreciable gravel content. Loose becoming compact with depth. No plasticity but cohesive when wetted.
3.05–6.10	△ ▼ ▽	SS-5 356 mm SS-6 305 mm	5 4 5 7 0 3 3 7	9 6	22 26	3.05–6.10	ML/CL: Grey silty clay with trace sand and no appreciable gravel content. Stiff but becoming soft when very moist to saturated. Vane shear testing completed at 3.81 m. Initial torque = 60 ft/lbs. After 3 revolutions = 20 ft/lbs. Moist @ 1.52 m Saturated @ 4.57 m
6.10–6.71		SS-7 356 mm	6 5 8 8	13	21	6.10–6.71	ML/CL: Grey silty clay with trace gravel and sand. Medium plasticity with low to medium toughness and stiff. Water Level @ 3.84 m on 2025/12/03 END @ 6.71 m

NOTES: 5 Celsius / rain on and off throughout day. SPT cave discarded prior to measurements.

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BOREHOLE NO. **BH25-8**

TOTAL DEPTH (m): **6.71 m**

UTM Coordinates :	Elevation (masl) :
662343,4885503	260.44

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DC**

DATES ASSESSED: **November 26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

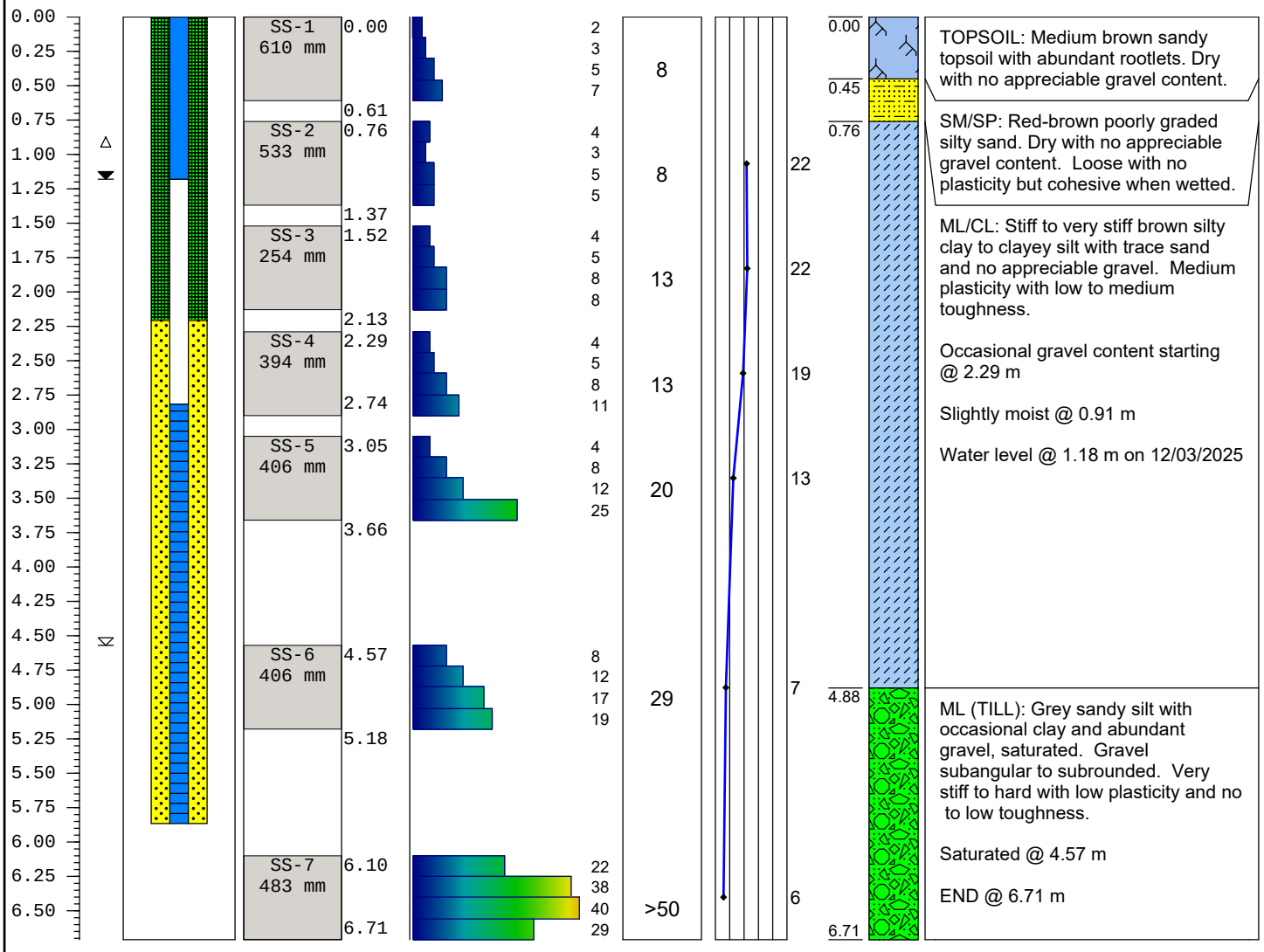
EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Hollow Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG



NOTES: 5 Celsius / rain on and off throughout day. SPT cave discarded prior to measurements.

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BOREHOLE NO. **BH25-9**

TOTAL DEPTH (m): **6.71 m**

UTM Coordinates :	Elevation (masl) :
662078,4885656	257.39

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DM & DB**

DATES ASSESSED: **November 25, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Hollow Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG

Depth	Piezometer Installation	Sample # Recovery	Blow Counts	Field N Value	Moisture %	Soil Symbol	Soil Description
0.00–0.35		SS-1 584 mm	0 1 3 4	4			TOPSOIL: Red-brown mottled sandy topsoil with abundant rootlets. Dry with no appreciable gravel content.
0.35–1.83	△	SS-2 457 mm SS-3 508 mm	2 4 8 12 2 6 4 4	12 10	12 16 20		SM/SP: Brown motteld sand with some silt and no appreciable gravel content. Some lamination evident. Compact with no plasticity and weakly cohesive when wetted. SS-2 grain size distribution - 82% sand, 9% silt, 8% clay and 1% gravel (SM/SP type). Moist @ 1.37 m
1.83–4.57		SS-4 610 mm SS-5 610 mm	1 2 3 6 2 4 9 9	5 13	24 21		ML/CL: Brown-grey silty clay with trace sand and no appreciable gravel content. Stiff becoming soft with depth and saturation. Medium plasticity with medium toughness. Vane shear test completed at 2.44 m. Initial Torque = 100 ft/lbs. After 3 revolutions = 60 ft/lbs.
4.57–6.71	▽	SS-6 610 mm SS-7 457 mm	2 2 2 3 1 1 2 2	4 3	25 23		ML/CL: Grey silty clay with no appreciable gravel nor sand content. Saturated and soft. Saturated @ 4.57 m END @ 6.71 m

NOTES: 5 Celsius, 5 mm rain starting in the afternoon. SPT cave discarded prior to measurements.

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BOREHOLE NO. **BH25-10**

TOTAL DEPTH (m): **2.90 m**

UTM Coordinates :	Elevation (masl) :
662790,4885698	274.46

PROJECT INFORMATION

PROJECT NO: **25-3614**

SITE LOCATION: **Reach Street, Port Perry**

LOGGED BY: **DC**

DATES ASSESSED: **November 27, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Ace Environmental Drilling Ltd.**

EQUIPMENT: **GEOPROBE 3126GT**

DRILLING METHOD: **Solid Stem Auger**

SAMPLING METHODS: **Split Spoon**

▽ Wet (saturated) ▼ Water Level △ Moist

FIELD BOREHOLE LOG

Depth	Piezometer Installation	Sample # Recovery	Blow Counts	Field N Value	Moisture %	Soil Symbol	Soil Description
0.00 – 0.61		SS-1 610 mm	0 1 3 3	4	12		TOPSOIL: Red-brown sandy topsoil with abundant rootlets. Slightly moist with no appreciable gravel content.
0.61 – 1.52		SS-2 305 mm	4 4 9 13	13	16		SM (TILL): Brown silty sand with some gravel. Slightly moist and compact. No plasticity but cohesive when wetted.
1.52 – 2.90	△	SS-3 610 mm SS-4 508 mm	14 20 21 25 16 23 42 23	41 >50	20 24		ML (TILL): Brown sandy silt with abundent subangular to subrounded gravel and trace clay. Very hard, with low plasticity and no toughness. Becoming moist with depth. Moist @ 1.83 m END @ 2.90 m

NOTES: 0 Celcius, windy with snow starting in the afternoon. Intended to re-test shallow soils near BH25-4.

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HAND AUGER I.D.: **HA25-1**

TOTAL DEPTH: **0.50 m**

UTM Coordinates:	Elevation (masl):
662633, 4885313	276.89

PROJECT INFORMATION	CONTRACTOR INFORMATION
PROJECT NO: **25-3614**	CONTRACTOR: **Oakridge Environmental Ltd.**
SITE LOCATION: **Reach Street, Port Perry**	EQUIPMENT: **Manual (Hand) Auger**
LOGGED BY: **DC**	STANDPIPE/PIEZOMETERS: **N/A**
DATES ASSESSED: **November 25, 2025**	SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00 – 0.20							TOPSOIL: Brown sandy topsoil with abundant rootlets. Dry with no appreciable gravel content.
0.20 – 0.50			Borehole dry upon completion		0.20 m		SM (TILL): Mottled red-brown silty sand with no appreciable gravel content. Dry. END @ 0.50 m

NOTES: 5 Celsius, 5 mm rain starting in afternoon. Used to complete infiltration test 1 & 2.

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HAND AUGER I.D.: **HA25-2**

TOTAL DEPTH: **0.48 m**

UTM Coordinates:	Elevation (masl):
662714, 4885295	281.44

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DC**
DATES ASSESSED: **November 25, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00							TOPSOIL: Dark brown sandy topsoil with abundant rootlets. Slightly moist with occasional sub-rounded gravel. .
0.05							
0.10	△						
0.15							
0.18 m							SM (TILL): Mottled brown, oxidized silty sand with subangular to subrounded gravel. Slightly moist.
0.20							END @ 0.48 m
0.25							
0.30							
0.35							
0.40							
0.45			Borehole dry upon completion				

NOTES: 5 Celsius, 5 mm rain starting in afternoon

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Phone: 705-745-1181 | Fax: 705-745-4163 | www.oakridgeenvironmental.com

HAND AUGER I.D.: **HA25-3**

TOTAL DEPTH: **0.69 m**

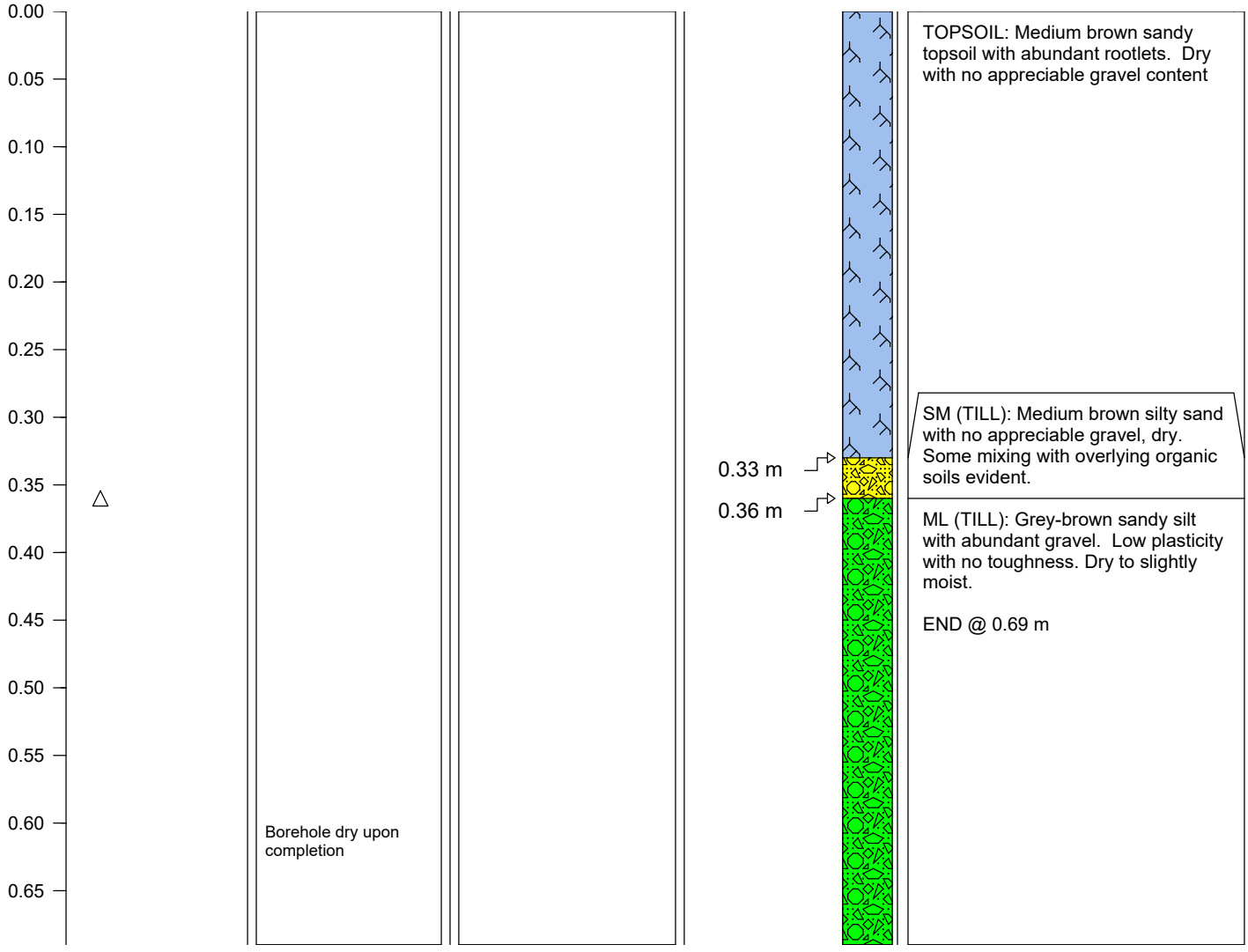
UTM Coordinates:	Elevation (masl):
662431, 4885716	266.75

PROJECT INFORMATION	CONTRACTOR INFORMATION
PROJECT NO: **25-3614**	CONTRACTOR: **Oakridge Environmental Ltd.**
SITE LOCATION: **Reach Street, Port Perry**	EQUIPMENT: **Manual (Hand) Auger**
LOGGED BY: **DM**	STANDPIPE/PIEZOMETERS: **N/A**
DATES ASSESSED: **November 26, 2025**	SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description



NOTES: 5 Celsius, rain on and off throughout day. Used to complete infiltration test 3.

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Phone: 705-745-1181 | Fax: 705-745-4163 | www.oakridgeenvironmental.com

HAND AUGER I.D.: **HA25-4**

TOTAL DEPTH: **0.38 m**

UTM Coordinates:	Elevation (masl):
662432, 4885711	267.13

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DM**
DATES ASSESSED: **November 26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00							TOPSOIL: Medium brown sandy topsoil with abundant rootlets. Dry with no appreciable gravel content
0.05							
0.10							
0.15							
0.20							
0.25					0.25 m		SM (TILL): Brown silty sand with abundant gravel, dry and dense. Gravel subangular to subrounded.
0.30			Borehole dry upon completion				END @ 0.38 m
0.35							

NOTES: 5 Celsius, rain on and off throughout day

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HAND AUGER I.D.: **HA25-5**

TOTAL DEPTH: **0.77 m**

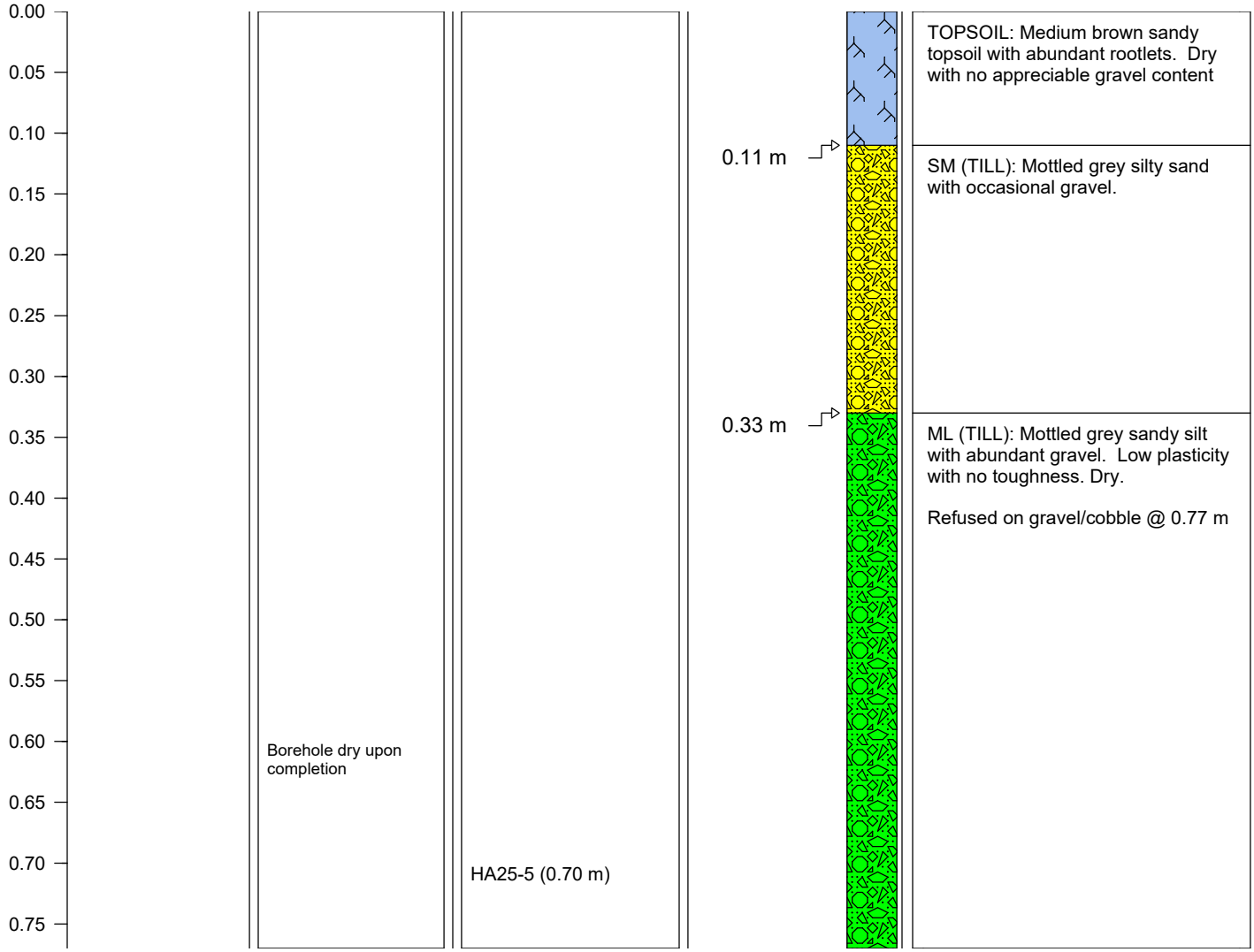
UTM Coordinates:	Elevation (masl):
662433, 4885668	265.55

PROJECT INFORMATION	CONTRACTOR INFORMATION
PROJECT NO: **25-3614**	CONTRACTOR: **Oakridge Environmental Ltd.**
SITE LOCATION: **Reach Street, Port Perry**	EQUIPMENT: **Manual (Hand) Auger**
LOGGED BY: **DM**	STANDPIPE/PIEZOMETERS: **N/A**
DATES ASSESSED: **November 26, 2025**	SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description



NOTES: 5 Celsius, rain on and off throughout day

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HAND AUGER I.D.: **HA25-6**

TOTAL DEPTH: **0.53 m**

UTM Coordinates:	Elevation (masl):
662295, 4885687	260.90

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DM**
DATES ASSESSED: **November 26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00							TOPSOIL: Medium grey-brown sandy topsoil with abundant rootlets. Dry with no appreciable gravel content
0.05							
0.10							
0.15							
0.20							
0.25							
0.28 m					0.28 m		SM/SP: Mottled grey silty sand with no appreciable gravel content, dry. Some lamination evident.
0.30							
0.35							END @ 0.53 m
0.40							
0.45			Borehole dry upon completion				
0.50							

NOTES: 5 Celsius, rain on and off throughout day. Used to completed infiltration test 4

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HAND AUGER I.D.: **HA25-7**

TOTAL DEPTH: **1.22 m**

UTM Coordinates:	Elevation (masl):
663031, 4885370	263.83

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DM**
DATES ASSESSED: **November 26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00–1.20	△ at 1.10		Borehole dry upon completion	HA25-7 (0.81-0.86 m) HA25-7 (0.86-1.12 m)	0.53 m 1.12 m		TOPSOIL: Brown-grey sandy topsoil with abundant rootlets. Dry with no appreciable gravel content SP: Oxidized well sorted (poorly graded) sand with no appreciable gravel content and occasional silt. Decreasing oxidation with depth and dry. ML (TILL): Brown-grey sandy silt with abundant gravel. Low plasticity with no toughness. Moist. End at length of auger @ 1.22 m

NOTES: 5 Celsius, rain on and off throughout day

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HAND AUGER I.D.: **HA25-8**

TOTAL DEPTH: **1.22 m**

UTM Coordinates:	Elevation (masl):
663050, 4885344	262.92

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DM**
DATES ASSESSED: **November 26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00 – 1.20			Borehole dry upon completion		0.30 m		TOPSOIL: Brown-grey sandy topsoil with abundant rootlets. Dry with no appreciable gravel content SM/SP: Grey well sorted (poorly graded) sand with silt and no appreciable gravel content, dry. End at length of auger @ 1.22 m

NOTES: 5 Celsius, rain on and off throughout day

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HAND AUGER I.D.: **HA25-9**

TOTAL DEPTH: **0.53 m**

UTM Coordinates:	Elevation (masl):
662363, 4885223	262.66

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DM**
DATES ASSESSED: **November 26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00							TOPSOIL: Grey-brown sandy topsoil with abundant rootlets. Dry with no appreciable gravel content
0.05							
0.10							
0.15							
0.20							
0.25							
0.28 m					0.28 m		SM/SP: Mottled grey silty sand with no appreciable gravel content, dry.
0.30							END @ 0.53 m
0.35							
0.40							
0.45			Borehole dry upon completion				
0.50							

NOTES: 5 Celsius, rain on and off throughout day. Used to completed infiltration test 5

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HAND AUGER I.D.: **HA25-10**

TOTAL DEPTH: **1.22 m**

UTM Coordinates:	Elevation (masl):
662870, 4885479	268.09

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DM**
DATES ASSESSED: **November 26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00 – 1.20			Borehole dry upon completion		0.76 m		TOPSOIL: grey sandy topsoil with abundant rootlets. Slightly moist with occasional sub-rounded gravel. Dry. SM (TILL): Mottled grey silty sand with subangular to subrounded gravel, dry. END @ 1.22 m

NOTES: 5 Celsius, 5 mm rain starting in afternoon

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HAND AUGER I.D.: **HA25-11**

TOTAL DEPTH: **0.56 m**

UTM Coordinates:	Elevation (masl):
662996, 4885516	264.20

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DM**
DATES ASSESSED: **November 26, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00 – 0.29 m			Borehole dry upon completion		0.29 m		TOPSOIL: Brown sandy topsoil with abundant rootlets. Dry with no appreciable gravel content.
0.29 – 0.56 m							SM/SP: Oxidixed red-brown well sorted (poorly graded) sand, decreasing oxidation with depth. Dry with no appreciable gravel content. END @ 0.56 m

0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55

NOTES: 5 Celsius, 5 mm rain starting in afternoon. Used to completed infiltration test 6.

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HAND AUGER I.D.: **HA25-12**

TOTAL DEPTH: **1.14 m**

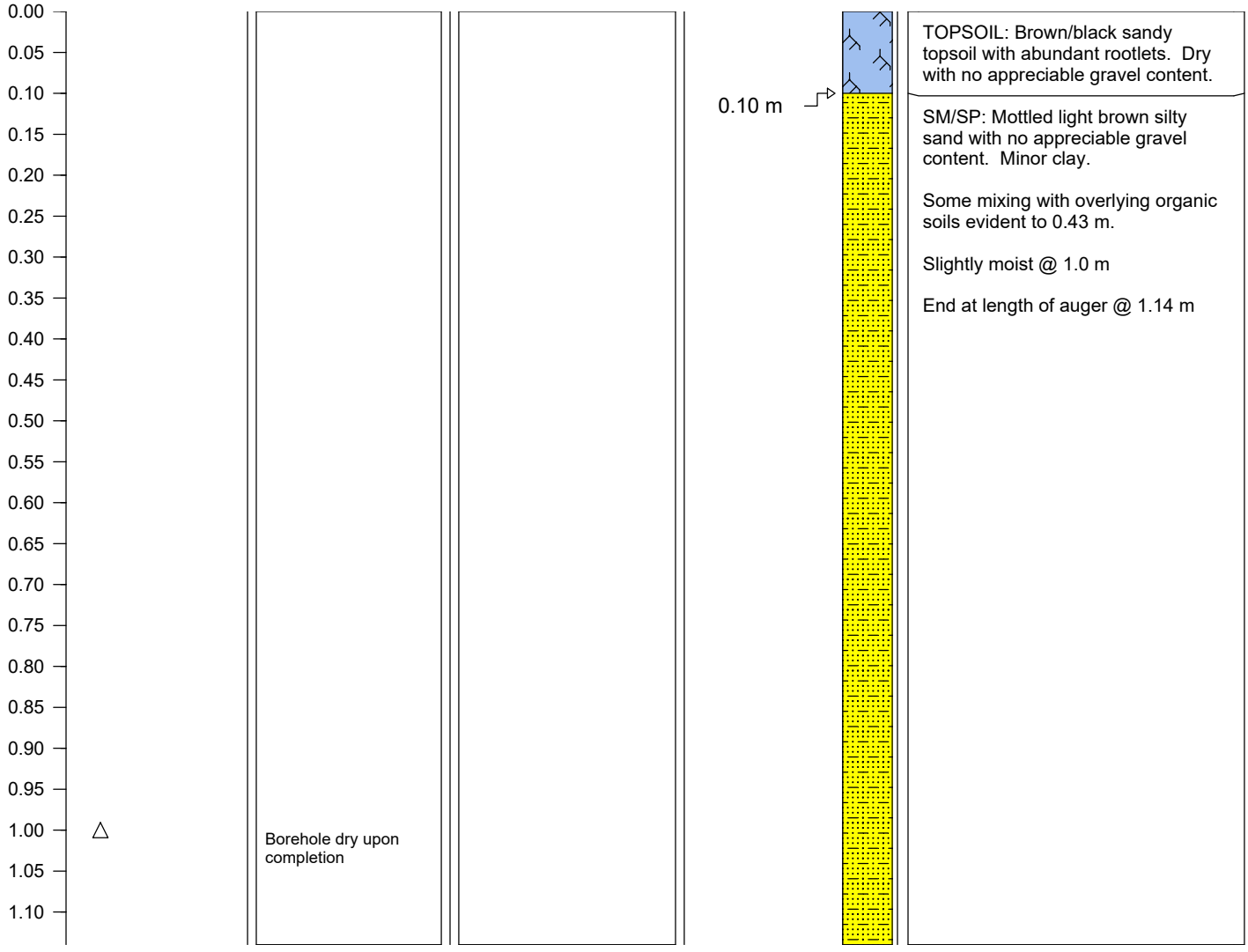
UTM Coordinates:	Elevation (masl):
662900, 4885296	267.63

PROJECT INFORMATION	CONTRACTOR INFORMATION
PROJECT NO: **25-3614**	CONTRACTOR: **Oakridge Environmental Ltd.**
SITE LOCATION: **Reach Street, Port Perry**	EQUIPMENT: **Manual (Hand) Auger**
LOGGED BY: **DM**	STANDPIPE/PIEZOMETERS: **N/A**
DATES ASSESSED: **November 14, 2025**	SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description



NOTES: 6 Celsius, overcast

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HAND AUGER I.D.: **HA25-13**

TOTAL DEPTH: **1.20 m**

UTM Coordinates:	Elevation (masl):
662737, 4885373	281.54

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DC**
DATES ASSESSED: **December 15, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00 – 1.15			Borehole dry upon completion	HA25-13 (1.07-1.20 m)	0.20 m 0.90 m		TOPSOIL: Medium brown sandy topsoil with abundant rootlets. Dry with occasional gravel. SM (TILL): Oxidized brown silty sand with no appreciable gravel content. Dry. ML (TILL): Brown sandy silt with subangular to subrounded gravel, dry. End at length of auger @ 1.20 m

NOTES: - 5 Celsius, windy, overcast

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HAND AUGER I.D.: **HA25-14**

TOTAL DEPTH: **1.20 m**

UTM Coordinates:	Elevation (masl):
662090, 4885654	257.61

PROJECT INFORMATION	CONTRACTOR INFORMATION
PROJECT NO: **25-3614**	CONTRACTOR: **Oakridge Environmental Ltd.**
SITE LOCATION: **Reach Street, Port Perry**	EQUIPMENT: **Manual (Hand) Auger**
LOGGED BY: **DC**	STANDPIPE/PIEZOMETERS: **N/A**
DATES ASSESSED: **December 15, 2025**	SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00 – 0.30					0.30 m		TOPSOIL: Dark-medium brown sandy topsoil with abundant rootlets. Dry with occasional small gravel.
0.30 – 1.00	△ @ 0.80						SM/SP: Oxidized brown silty sand with no appreciable gravel content. Oxidation decreasing with depth. Moist @ 0.80 m
1.00 – 1.20			Borehole dry upon completion		1.0 m		ML: Light brown-grey sandy silt with minor clay. Occasional small subangular to subrounded gravel, moist. End at length of auger @ 1.20 m

NOTES: - 5 Celsius, windy, overcast

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HAND AUGER I.D.: **HA25-15**

TOTAL DEPTH: **0.60 m**

UTM Coordinates:	Elevation (masl):
662830, 4885990	266.60

PROJECT INFORMATION

PROJECT NO: **25-3614**
SITE LOCATION: **Reach Street, Port Perry**
LOGGED BY: **DM**
DATES ASSESSED: **December 17, 2025**

CONTRACTOR INFORMATION

CONTRACTOR: **Oakridge Environmental Ltd.**
EQUIPMENT: **Manual (Hand) Auger**
STANDPIPE/PIEZOMETERS: **N/A**
SAMPLING METHODS: **Composite grab**

▽ Seepage ▼ Water Level △ Moist

FIELD AUGER LOG

Depth (cm)	Water	Piezometer Installation	Special Notes	Sample #	Depth	Soil Symbol	Soil Description
0.00 – 0.25			Borehole dry upon completion		0.25 m		TOPSOIL: Medium brown silty-sandy topsoil with abundant rootlets.
0.25 – 0.46					0.46 m		SM/SP: Brown silty sand with trace gravel/cobble. Some mixing with with overlying organic soils observed.
0.46 – 0.55							ML: Brown sandy silt with minor clay and trace gravel. Refused on cobble @ 0.61 m

NOTES: - 5 Celsius, windy, overcast

Notice of Collection of Personal Information

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

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A 394699

Type *

☑ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☑ Imperial

1. Well Owner's Information

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

Last Name	First Name

Organization	Email Address
Richard and Susan Wannop	

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
	47	Katherine Crescent	Stouffville

Country	Province	Postal Code	Telephone Number
Canada	Ontario	L4A 1K4	

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	1551	Reach Street	

Lot	Concession	County/District/Municipality

City/Town	Province	Postal Code
Port Perry	Ontario	

UTM Coordinates	Zone *	Easting *	Northing *		Municipal Plan and Sublot Number
NAD 83	17	662017	4885704	Test UTM in Map	

Other

3. Overburden and Bedrock Material *

Well Depth * 25 (ft)

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Fill	Sand	Loose	0	6
Grey	Silt	Sand	Loose	6	13
Grey	Silt	Clay	Loose	13	25

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	13	Hole Plug	4.251

5. Method of Construction *

☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☑ Augering ☐ Direct Push
☐ Other (specify) _____

6. Well Use *

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

7. Status of Well *

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

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

Inside Diameter (in)	Open Hole **or** Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
2	Plastic	0.38	0	15

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
2.38	Plastic	10	15	25

10. Water Details

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

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	25	8.25

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

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

Recovery

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

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * ☐ Yes ☑ No

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

13. Map of Well Location *

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



14. Information

Well owner's information package delivered	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) *
☐ Yes ☑ No		2024/02/23

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *	Well Contractor's License Number *
3D Drilling Inc.	7739

Business Address

Unit Number	Street Number	Street Name *
		PO Box 10038

City/Town/Village *	Province	Postal Code *
Uxbridge RPO Elgin Park	ON	L9P 0B5

Business Telephone Number	Business Email Address
289-808-5710	

Last Name of Well Technician *	First Name of Well Technician *	Well Technician's License Number *
Diels	Dustin	4397

16. Declaration *

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

Last Name	First Name	Email Address
Diels	Dustin	dustind@3ddrill.com

Signature	Date Submitted (yyyy/mm/dd)
Dustin Diels Digitally signed by Dustin Diels Date: 2024.03.21 08:57:43 -04'00'	2024/03/21

17. Ministry Use Only

Audit Number

XR2B BGA6

Notice of Collection of Personal Information

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

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A 394697

Type *

☑ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☑ Imperial

1. Well Owner's Information

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

Last Name	First Name

Organization	Email Address
Richard and Susan Wannop	

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
	47	Katherine Crescent	Stouffville

Country	Province	Postal Code	Telephone Number
Canada	Ontario	L4A 1K4	

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	1151	Reach Street	

Lot	Concession	County/District/Municipality

City/Town	Province	Postal Code
Port Perry	Ontario	

UTM Coordinates	Zone *	Easting *	Northing *		Municipal Plan and Sublot Number
NAD 83	17	662022	4885725	Test UTM in Map	

Other

3. Overburden and Bedrock Material *

Well Depth * 65 (ft)

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Fill	Sand		0	6
Grey	Silt	Sand		6	14
Grey	Silt	Clay		14	29
Grey	Clay	Silt		29	65

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	53	Hole Plug	5.85

5. Method of Construction *

☐ Cable Tool ☑ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☑ Augering ☐ Direct Push
☐ Other (specify) _____

6. Well Use *

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

7. Status of Well *

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

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

Inside Diameter (in)	Open Hole **or** Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
2	Plastic	0.38	0	55

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
2.38	Plastic	10	55	65

10. Water Details

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

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	10	8.25
10	65	3.87

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

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

Recovery

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

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * ☐ Yes ☑ No

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

13. Map of Well Location *

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



14. Information

Well owner's information package delivered	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) *
☐ Yes ☑ No		2024/02/23

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *	Well Contractor's License Number *
3D Drilling Inc.	7739

Business Address

Unit Number	Street Number	Street Name *
		PO Box 10038

City/Town/Village *	Province	Postal Code *
Uxbridge RPO Elgin Park	ON	L9P 0B5

Business Telephone Number	Business Email Address
289-808-5710	

Last Name of Well Technician *	First Name of Well Technician *	Well Technician's License Number *
Diels	Dustin	4397

16. Declaration *

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

Last Name	First Name	Email Address
Diels	Dustin	dustind@3ddrill.com

Signature	Date Submitted (yyyy/mm/dd)
Dustin Diels Digitally signed by Dustin Diels Date: 2024.03.21 08:49:58 -04'00'	2024/03/21

17. Ministry Use Only

Audit Number

NSII EWRR

Ontario

Ministry of the Environment, Conservation and Parks

Well Record - Regulation 903

Ontario Water Resources Act

Notice of Collection of Personal Information

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

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A 394700

Type *

☑ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☑ Imperial

1. Well Owner's Information

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

Last Name	First Name
Organization	**Email Address**
Richard and Susan Wannop	

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village		
	47	Katherine Crescent	Stouffville		
Country	**Province**		**Postal Code**	**Telephone Number**	
Canada	Ontario		L4A 1K4		

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township		
	1511	Reach Street			
Lot	**Concession**	**County/District/Municipality**			
City/Town	**Province**	**Postal Code**			
Port Perry	Ontario				

UTM Coordinates	Zone *	Easting *	Northing *		Municipal Plan and Sublot Number
NAD 83	17	662007	4885719	Test UTM in Map	

Other

3. Overburden and Bedrock Material *

Well Depth * 25 (ft)

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Fill	Sand	Loose	0	6
Grey	Silt	Sand	Loose	6	13
Grey	Silt	Clay	Loose	13	25

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	13	Hole Plug	4.251

5. Method of Construction *

☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☑ Augering ☐ Direct Push
☐ Other (specify) _____

6. Well Use *

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

7. Status of Well *

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

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

Inside Diameter (in)	Open Hole **or** Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
2	Plastic	0.38	0	15

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
2.38	Plastic	10	15	25

10. Water Details

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

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	25	8.25

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

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

Recovery

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

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * ☐ Yes ☑ No

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

13. Map of Well Location *

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



14. Information

Well owner's information package delivered	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) *
☐ Yes ☑ No		2024/02/23

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *	Well Contractor's License Number *
3D Drilling Inc.	7739

Business Address

Unit Number	Street Number	Street Name *
		PO Box 10038

City/Town/Village *	Province	Postal Code *
Uxbridge RPO Elgin Park	ON	L9P 0B5

Business Telephone Number	Business Email Address
289-808-5710	

Last Name of Well Technician *	First Name of Well Technician *	Well Technician's License Number *
Diels	Dustin	4397

16. Declaration *

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

Last Name	First Name	Email Address
Diels	Dustin	dustind@3ddrill.com

Signature	Date Submitted (yyyy/mm/dd)
Dustin Diels Digitally signed by Dustin Diels Date: 2024.03.21 08:42:47 -04'00'	2024/03/21

17. Ministry Use Only

Audit Number

5ZO8 A452

Notice of Collection of Personal Information

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

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A 394688

Type *

☑ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☑ Imperial

1. Well Owner's Information

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

Last Name	First Name

Organization	Email Address
Richard and Susan Wannop	

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
	47	Katherine Crescent	Stouffville

Country	Province	Postal Code	Telephone Number
Canada	Ontario	L4A 1K4	

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	1511	Reach Street	

Lot	Concession	County/District/Municipality

City/Town	Province	Postal Code
Port Perry	Ontario	

UTM Coordinates	Zone *	Easting *	Northing *		Municipal Plan and Sublot Number
NAD 83	17	662001	4885704	Test UTM in Map	

Other

3. Overburden and Bedrock Material *

Well Depth * 25 (ft)

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Fill	Sand	Loose	0	7
Grey	Silt	Sand	Loose	7	13
Grey	Silt	Clay	Loose	13	25

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	13	Hole Plug	4.251

5. Method of Construction *

☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☐ Diamond
☐ Jetting ☐ Driving ☐ Digging ☐ Rotary (Air) ☑ Augering ☐ Direct Push
☐ Other (specify) _____

6. Well Use *

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

7. Status of Well *

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

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

Inside Diameter (in)	Open Hole **or** Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
2	Plastic	0.38	0	15

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
2.38	Plastic	10	15	25

10. Water Details

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

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	25	8.25

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

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

Recovery

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

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * ☐ Yes ☑ No

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

13. Map of Well Location *

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



14. Information

Well owner's information package delivered	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) *
☐ Yes ☑ No		2024/02/21

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *	Well Contractor's License Number *
3D Drilling Inc.	7739

Business Address

Unit Number	Street Number	Street Name *
		PO Box 10038

City/Town/Village *	Province	Postal Code *
Uxbridge RPO Elgin Park	ON	L9P 0B5

Business Telephone Number	Business Email Address
289-808-5710	

Last Name of Well Technician *	First Name of Well Technician *	Well Technician's License Number *
Diels	Dustin	4397

16. Declaration *

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

Last Name	First Name	Email Address
Diels	Dustin	dustind@3ddrill.com

Signature	Date Submitted (yyyy/mm/dd)
Dustin Diels Digitally signed by Dustin Diels Date: 2024.03.21 08:31:38 -04'00'	2024/03/21

17. Ministry Use Only

Audit Number

JTCK QWXT

Appendix D

Combustible Gas Summary

Combustible Gas Summary

Borehole I.D.	Split Spoon	Split Spoon Interval	Sample Interval	Headspace Reading
BH25-1	1	0 - 2'	0 - 2 ft	45
BH25-1	2	2.5' - 4.5'	0 - 4"	10
BH25-1	2	2.5' - 4.5'	4" - 13"	15
BH25-1	3	5' - 7'		50
BH25-1	4	7.5' - 9.5'		10
BH25-1	5	10' - 12'		15
BH25-1	6			70
BH25-1	7			5
BH25-1	8			5
BH25-1	9			5
BH25-1	10		4" - 14"	25
BH25-1	10		14" - 24"	10
BH25-1	11		0 - 11"	35
BH25-1	11		11" - 16"	190
BH25-1	12			100
BH25-2	1	0 - 2'	0 - 20"	65
BH25-2	1	0 - 2'	20" - 24"	10
BH25-2	2	2' - 4'		10
BH25-2	3	5' - 7'	0 - 4"	20
BH25-2	3	5' - 7'	4" - 18"	20
BH25-2	4	7' - 9'		20
BH25-2	5	10' - 12'		20
BH25-2	6	12' - 14'		20
BH25-2	7	15' - 17'	0 - 10"	80
BH25-2	7	15' - 17'	10" - 14"	20
BH25-2	8	20' - 22'		20
BH25-2	9	23' - 25'		20
BH25-3	1	0 - 2'		65
BH25-3	2	2.5' - 4.5'	2.5' - 3'	5
BH25-3	2	2.5' - 4.5'	>3'	5
BH25-3	3	5' - 7'		5
BH25-3	4	7.5' - 9.5'		15
BH25-3	5	10' - 12'		10
BH25-3	6	12.5' - 14.5'		10
BH25-3	7	15' - 17'		5
BH25-3	8	17.5' - 19.5'		10
BH25-3	9	20' - 22'	No Recovery	-
BH25-4	1	0 - 2'		20
BH25-4	2	2.5' - 4.5'	No Recovery	-
BH25-4	3	5' - 7'		20
BH25-4	4	7.5' - 9.5'		20
BH25-4a	4	7.5' - 9.5'		20
BH25-4a	5	10' - 12'		20
BH25-4a	6	15' - 17'		20
BH25-4a	6	15' - 17'	Aquifer Material	20
BH25-4a	7	20' - 22'		20
BH25-4a	8	25' - 27'		20
BH25-5	1			15
BH25-5	2			10
BH25-5	3		0 - 12"	15
BH25-5	3		12" - 16"	5
BH25-5	4			10
BH25-5	5			20
BH25-5	6			15
BH25-5	7			20
BH25-5	8			100
BH25-6	1	0 - 2'		10
BH25-6	2	2.5' - 4.5'		5
BH25-6	3	5' - 7'		5
BH25-6	4	7.5' - 9.5'		5
BH25-6	5	10' - 12'		15
BH25-6	6	15' - 17'		15
BH25-6	7	20' - 22'		15
BH25-7	1	0 - 2'		15
BH25-7	2	2.5' - 4.5'		15
BH25-7	3	5' - 7'		15
BH25-7	4	7.5' - 9.5'		15
BH25-7	5	10' - 12'		15
BH25-7	6	12.5' - 14.5'		15
BH25-7	7	15' - 17'		15
BH25-7	8	20' - 22'		15
BH25-8	1	0 - 2'	18" - 24"	15
BH25-8	2	2.5' - 4.5'	0 - 4"	10
BH25-8	2	2.5' - 4.5'	4" - 21"	10
BH25-8	3	5' - 7'		10
BH25-8	4	7.5' - 9.5'		15
BH25-8	5	10' - 12'		20
BH25-8	6	15' - 17'		15
BH25-8	7	20' - 22'		20
BH25-9	1	0 - 2'		15
BH25-9	2	2.5' - 4.5'		5
BH25-9	3	5' - 7'	Top	15
BH25-9	3	5' - 7'	Bottom	15
BH25-9	4	7.5' - 9.5'		15
BH25-9	5	10' - 12'		10
BH25-9	6	15' - 17'		15
BH25-9	7	20' - 22'		20
BH25-10	1	0 - 2'		20
BH25-10	2	2.5' - 4.5'		30
BH25-10	3	5' - 7'		15
BH25-10	4	7.5' - 9.5'		10
HA25-5				10
HA25-7			32" - 34"	0
HA25-7			34" - 44"	15
Berm				20
BH25-4	Auger	0 - 5'		35
BH25-4	Auger	5' - 10'		0
BH25-5	Auger	~18'		310

Monitoring Well and Borehole Headspace Combustible Gas Concentrations

Location ID	Easting	Northing	Headspace Gas Concentration	
	(m)	(m)	CH_4 Elimination (ppm)	With CH_4 (ppm)
BH25-1	662740	4885369	25	70
BH25-3	662492	4885790	5	35
BH25-4	662815	4885707	0	50
BH25-5	662814	4885942	0	80
BH25-7	662258	4885271	0	15
BH25-8	662343	4885503	15	15
MW-1	662022	4885723	55	110
HA25-13	662737	4885373	0	25
HA25-14	662090	4885654	0	5
HA25-15	662830	4885990	0	0

Appendix E

Off-Site Borehole/Monitoring Wells

BOREHOLE LOG

PROJECT: 89-178

BOREHOLE: 6-1

Regional Municipality of Durham - Scugog Landfill
Additional Monitor Installation
FOR: Regional Municipality of Durham

DATE: 7 June 1989
GEOLOGIST BMH/GR
ELEVATION 267.1 m A

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE TYPE	SAMPLE N VALUE	SAMPLE % WATER	SAMPLE % REC	SAMPLE % RQD	COMMENTS
0.2		Topsoil				A3					BH6-1 previously dri
		Fine Sand Dark brown, slightly silty fine to very fine sand, wet to saturated.									5.0 m and logged as
0.9											81-1
1											
1.2		Silty Fine Sand Brown, slightly clayey silty fine sand, occasional fine gravel and coarse sand, wet to saturated.				SS	11				
2		Clayey Silt Stiff to very stiff, clayey silt, mottled grey and orange, saturated, slightly sandier below 2.3m.									
3											
3.4		Sandy Till Brown dense to very dense, silty and gravelly sand till, faint mottling, saturated.				SS	26				
4											
						SS	66				
5		-becomes grey at +/-5.3m.				SS	40	6.3			ground water monitor overdrilled and deepe +/-7.00 m.
6											
						SS	48	6.9			
7.0	7	Borehole terminated at +/-7.00m.									

Gartner Lee Limi

BOREHOLE LOG

PROJECT: 89-178

BOREHOLE: 11-1

Regional Municipality of Durham - Scugog Landfill
Additional Monitor Installation
FOR: Regional Municipality of Durham

DATE: 5 February 1986
GEOLOGIST EHR
ELEVATION 272.0 m ASL

DEPTH (m)	STRATIGRAPHY	STRATIGRAPHIC DESCRIPTION	MONITOR DETAILS & NUMBER	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE TYPE	SAMPLE N VALUE	SAMPLE % WATER	SAMPLE % REC	SAMPLE % RQD	COMMENTS
0		Sand Medium reddish brown, fine sand, well sorted, loose, moist.				SS	2				BH11-1 previously drilled and logged as borehole 86-7
1						SS	10				
2						SS	17				
2.3		Silty Sandy Till Light brown, mottled grey, gravelly silty sandy till, very stiff, homogeneous, moist.				SS	27				
3						SS	36				
3.6		Sand Medium brown, fine to coarse sand, stratified with gravel layers, non-cohesive, dense, moist.				SS	16				
4						SS	30				
5											
5.8		Borehole terminated at +/-5.80 m in sand.									

Gartner Lee Limited

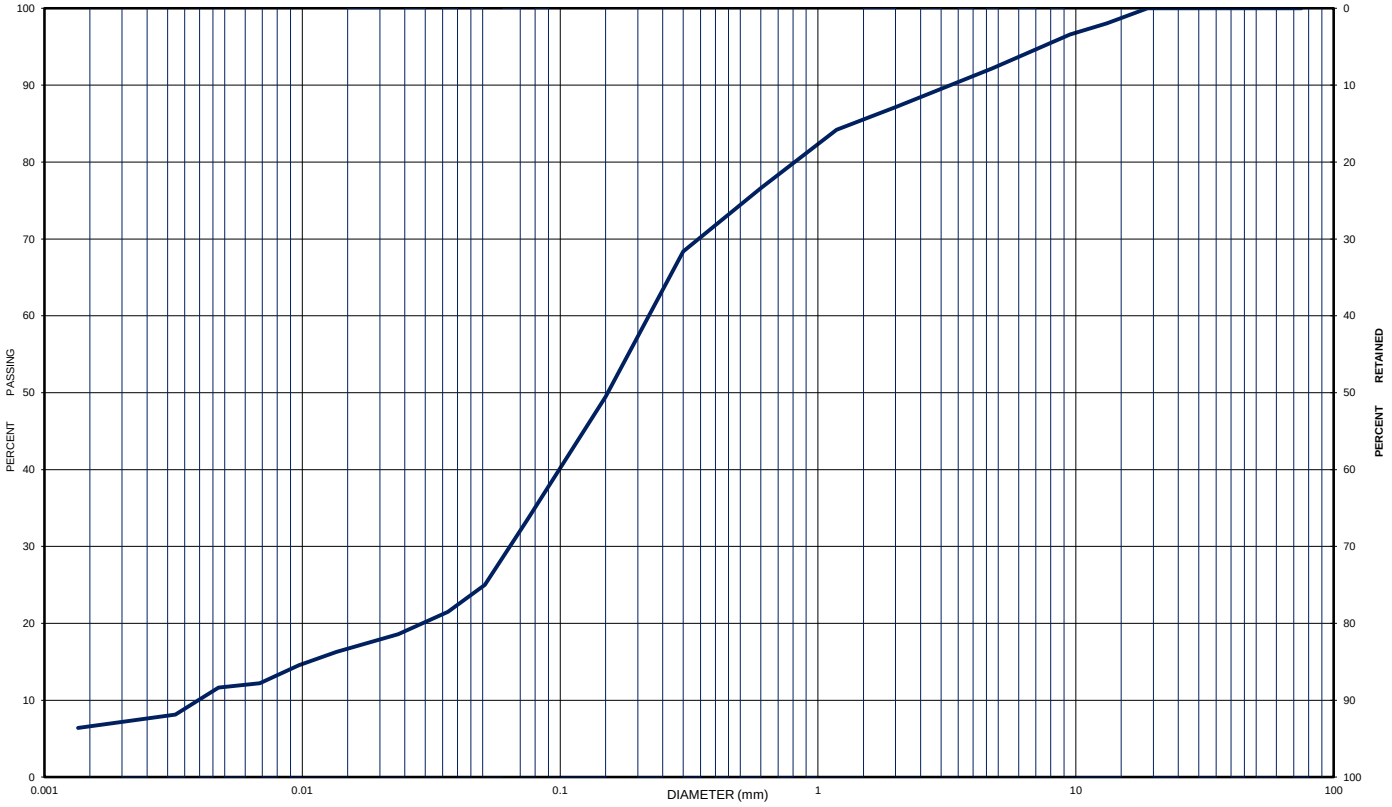
Appendix F

Permeameter Logs and Grain Size Distribution Curves

GRAIN SIZE DISTRIBUTION CHART

Client:	*Oakridge Envionmental Limited*	Project No.:	*25-3614*
Project:	*Reach Street*	Location:	--
Sampled By:	*Oakridge Environmental Limited*	Date:	*December 3, 2025*
Sample No.:	*BH-25-1 SS-3*	Depth:	--

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



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

Sample No.	Depth	Description	Moisture Content	Gravel	Sand	Silt	Clay	Class.
BH-25-1 SS-3	--	*Silty SAND trace of gravel and clay*	*3.9*	*8*	*59*	*26*	*7*	*SM*

MECHANICAL ANALYSIS SHEET

Client:	*Oakridge Envionmental Limited*	Project No.:	*25-3614*
Project:	*Reach Street*	Location:	--
Sampled By:	*Oakridge Environmental Limited*	Date:	December 3, 2025
Sample No.:	*BH-25-1 SS-3*	Depth:	--

SIEVE ANALYSIS OF RET. 4.75mm MATERIAL M2			
SIEVE SIZE (MM'S)	CUMULATIVE		
	CUMULATIVE MASS (GMS.)	% RET M1	% PASS M1
75.0 mm	*0.0*	0.0	**100.0**
63.0 mm	*0.0*	0.0	**100.0**
53.0 mm	*0.0*	0.0	**100.0**
37.5 mm	*0.0*	0.0	**100.0**
26.5 mm	*0.0*	0.0	**100.0**
19.0 mm	*0.0*	0.0	**100.0**
13.2 mm	*8.9*	1.9	**98.1**
9.5 mm	*15.6*	3.4	**96.6**
4.75 mm	*35.7*	7.8	**92.2**
Pan			

SIEVE ANALYSIS OF HYDROMETER MATERIAL (M7)			
SIEVES SIZES (MM'S)	CUMULATIVE MASS (GMS.)	CUMULATIVE	
		% RET M1	% PASS M1
2.00 mm	*58.7*	12.8	**87.2**
1.18 mm	*2.51*	15.8	**84.2**
0.600 mm	*8.99*	23.4	**76.6**
0.300 mm	*16.00*	31.6	**68.4**
0.150 mm	*32.10*	50.5	**49.5**
0.075 mm	*45.62*	66.4	**33.6**
Pan	*47.3*		

COARSE MATERIAL		
MASS (TOTAL SAMPLE) (A)	= M1	*457.0*
RET 4.75 mm - DRY	= M2	35.7
PASS 4.75 mm - DRY	= M3	421.3
MASS (TOTAL SAMPLE) (B)	= M4	
PARTICLE SIZE ANALYSIS		
RETAINED ON 2.00 mm - DRY	= M5	58.7
PASSING 2.00 mm - DRY	= M6	398.3
% RET 4.75 = M2 x 100 / M1	= K	7.8
% RET 2.00 = M5 x (100-K) / M1	= L	12.8

FIELD MOISTURE		HYGROSCOPIC MOISTURE
TARE NO.	S42	212
WET SOIL & TARE (GMS.)	*199.2*	*37.79*
DRY SOIL & TARE (GMS.)	*191.8*	*37.38*
MOISTURE (GMS.)	7.4	
DRY SOIL & TARE	191.8	
TARE (GMS.)	*4.2*	
DRY SOIL (GMS.)	187.6	
% MOISTURE	**3.9**	0.9892

HYDROMETER ANALYSIS MATERIAL PASS 2.00mm SIEVE (M7)

DRY MASS (M7) - UNCOR.					75.07
SPECIFIC GRAVITY	**2.749**	CORRECTION **(A)**	0.99	DRY MASS **(M7)** - CORRECT	74.26

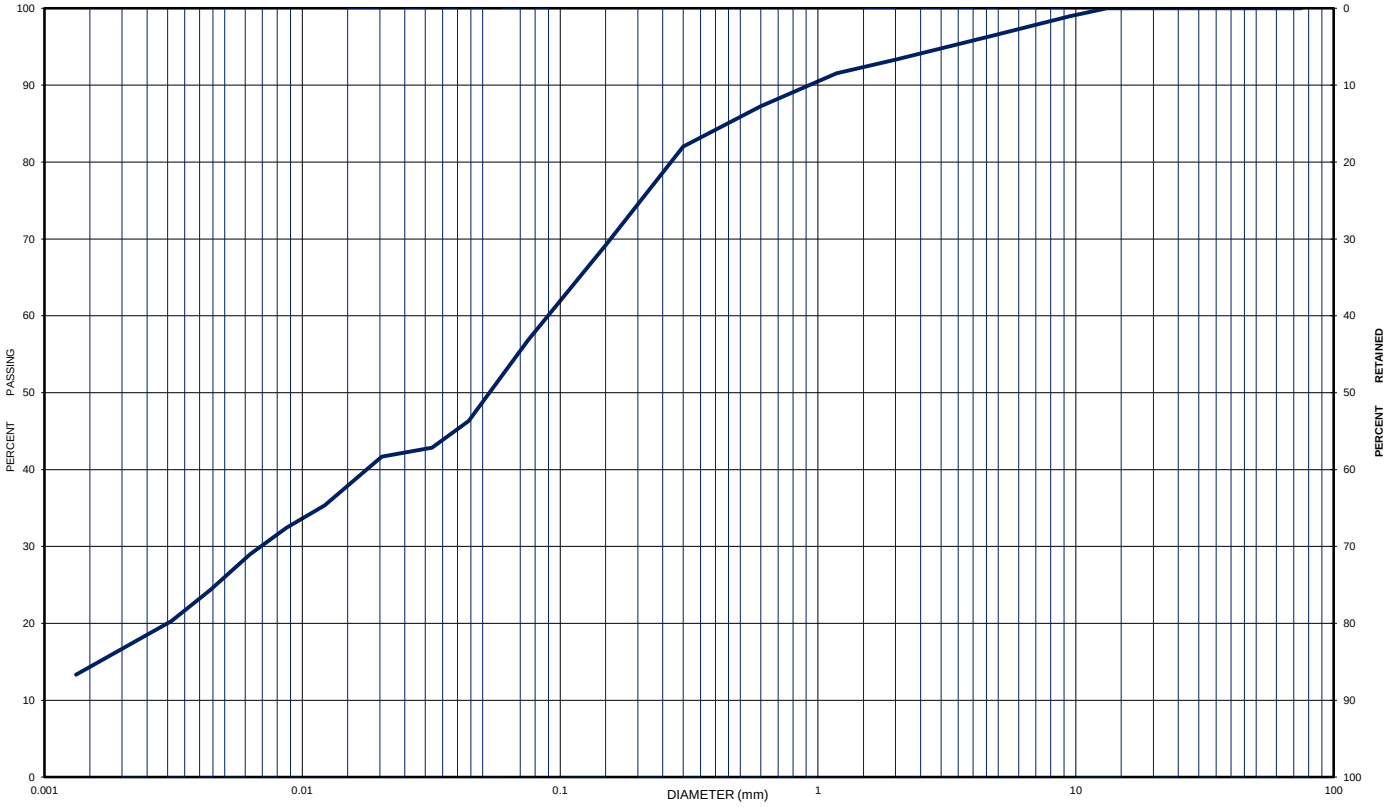
TIME MIN.	TEMP C°	HYDROMETER READING ORIG.	COR.	CR	LEN (MM'S)	CORRECTED DIAMETER (MM)	% PASS OF M1 = (PAR)/M7
1	*16*	*30.5*	*9.0*	21.5	13.0	0.05098	**25.0**
2	*16*	*27.5*	*9.0*	18.5	13.5	0.03674	**21.5**
5	*16*	*25.0*	*9.0*	16.0	13.9	0.02358	**18.6**
15	*17*	*22.0*	*8.0*	14.0	14.2	0.01358	**16.3**
30	*17*	*20.5*	*8.0*	12.5	14.5	0.00971	**14.5**
60	*18*	*18.5*	*8.0*	10.5	14.8	0.00684	**12.2**
120	*20*	*17.0*	*7.0*	10.0	14.9	0.00474	**11.6**
250	*23*	*14.0*	*7.0*	7.0	15.4	0.00322	**8.1**
1440	*23*	*12.0*	*6.5*	5.5	15.6	0.00135	**6.4**

Tested By: Wayne Rayfuse Date: December 9, 2025

GRAIN SIZE DISTRIBUTION CHART

Client:	*Oakridge Envionmental Limited*	Project No.:	*25-3614*
Project:	*Reach Street*	Location:	--
Sampled By:	*Oakridge Environmental Limited*	Date:	*December 3, 2025*
Sample No.:	*BH-25-2 SS-5*	Depth:	--

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



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

Sample No.	Depth	Description	Moisture Content	Gravel	Sand	Silt	Clay	Class.
BH-25-2 SS-5	--	*SILT & SAND some clay trace of gravel*	*7.7*	*4*	*40*	*39*	*17*	*ML*

MECHANICAL ANALYSIS SHEET

Client: *Oakridge Envionmental Limited*
Project: *Reach Street*
Sampled By: *Oakridge Environmental Limited*
Sample No.: *BH-25-2 SS-5*

Project No.: *25-3614*
Location: --
Date: December 3, 2025
Depth: --

SIEVE ANALYSIS OF RET. 4.75mm MATERIAL M2			
SIEVE SIZE (MM'S)	CUMULATIVE		
	CUMULATIVE MASS (GMS.)	% RET M1	% PASS M1
75.0 mm	*0.0*	0.0	**100.0**
63.0 mm	*0.0*	0.0	**100.0**
53.0 mm	*0.0*	0.0	**100.0**
37.5 mm	*0.0*	0.0	**100.0**
26.5 mm	*0.0*	0.0	**100.0**
19.0 mm	*0.0*	0.0	**100.0**
13.2 mm	*0.0*	0.0	**100.0**
9.5 mm	*5.4*	1.0	**99.0**
4.75 mm	*18.9*	3.6	**96.4**
Pan			

COARSE MATERIAL		
MASS (TOTAL SAMPLE) (A)	= M1	*526.6*
RET 4.75 mm - DRY	= M2	18.9
PASS 4.75 mm - DRY	= M3	507.7
MASS (TOTAL SAMPLE) (B)	= M4	
PARTICLE SIZE ANALYSIS		
RETAINED ON 2.00 mm - DRY	= M5	35.2
PASSING 2.00 mm - DRY	= M6	491.4
% RET 4.75 = M2 x 100 / M1	= K	3.6
% RET 2.00 = M5 x (100-K) / M1	= L	6.7

FIELD MOISTURE		HYGROSCOPIC MOISTURE
TARE NO.	S49	209
WET SOIL & TARE (GMS.)	*276.9*	*50.81*
DRY SOIL & TARE (GMS.)	*257.3*	*50.78*
MOISTURE (GMS.)	19.6	
DRY SOIL & TARE	257.3	
TARE (GMS.)	*4.1*	
DRY SOIL (GMS.)	253.2	
% MOISTURE	**7.7**	0.9994

SIEVE ANALYSIS OF HYDROMETER MATERIAL (M7)

HYDROMETER ANALYSIS MATERIAL PASS 2.00mm SIEVE (M7)

DRY MASS (M7) - UNCOR. 79.82

SPECIFIC GRAVITY **2.735** CORRECTION **(A)** 0.99 DRY MASS **(M7)** - CORRECT 79.77

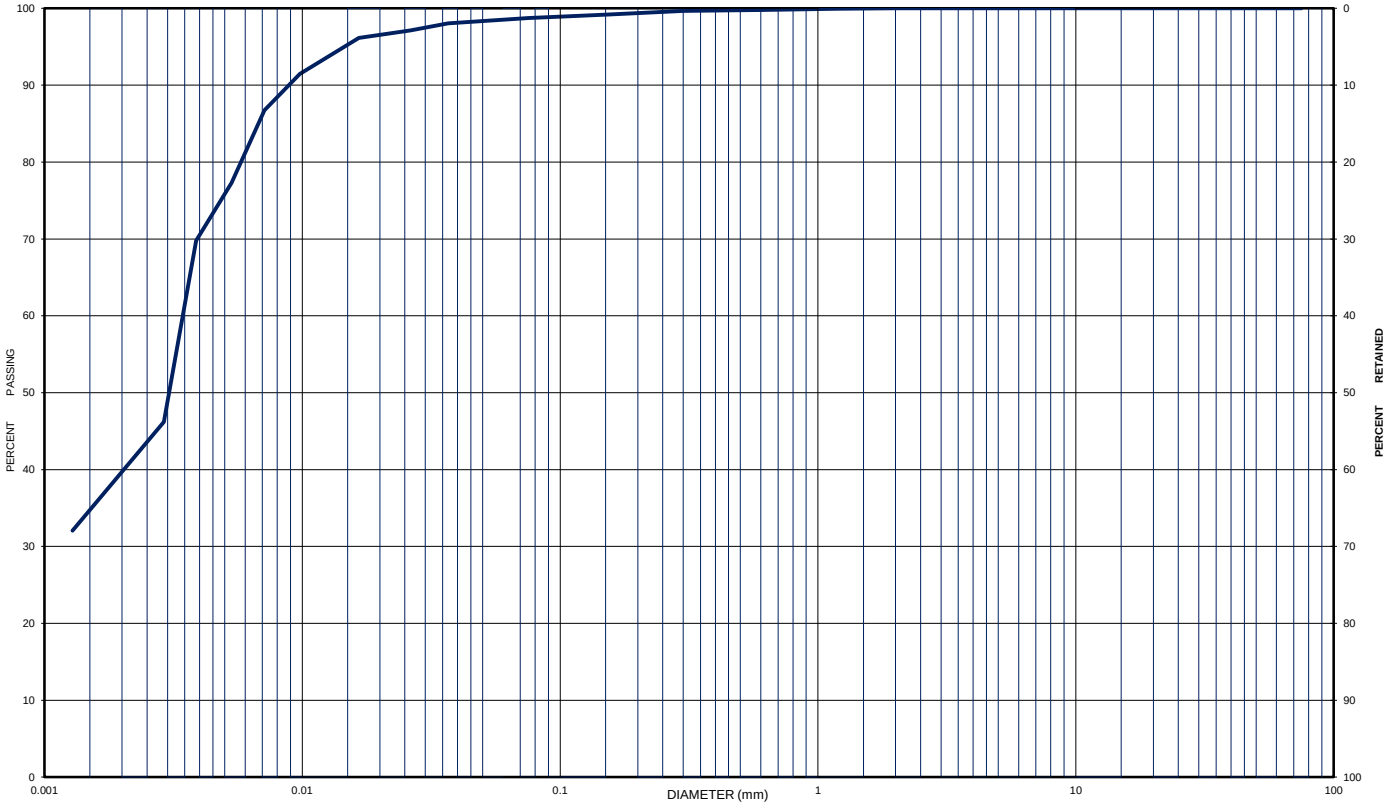
SIEVES SIZES (MM'S)	CUMULATIVE MASS (GMS.)	CUMULATIVE % RET M1	CUMULATIVE % PASS M1	TIME MIN.	TEMP C°	HYDROMETER READING ORIG.	HYDROMETER READING COR.	CR	LEN (MM'S)	CORRECTED DIAMETER (MM)	% PASS OF M1 = (PAR)/M7
2.00 mm	*35.2*	6.7	**93.3**	1	*17*	*48.0*	*8.0*	40.0	10.0	0.04415	**46.3**
1.18 mm	*1.53*	8.5	**91.5**	2	*17*	*45.0*	*8.0*	37.0	10.4	0.03183	**42.8**
0.600 mm	*5.16*	12.7	**87.3**	5	*17*	*44.0*	*8.0*	36.0	10.6	0.02033	**41.7**
0.300 mm	*9.68*	18.0	**82.0**	15	*17*	*38.5*	*8.0*	30.5	11.5	0.01222	**35.3**
0.150 mm	*20.65*	30.8	**69.2**	30	*18*	*35.0*	*7.0*	28.0	11.9	0.00868	**32.4**
0.075 mm	*31.19*	43.2	**56.8**	60	*18*	*32.0*	*7.0*	25.0	12.4	0.00626	**29.0**
Pan	*32.9*			120	*21*	*28.0*	*7.0*	21.0	13.1	0.00439	**24.3**
				250	*21*	*24.5*	*7.0*	17.5	13.7	0.00311	**20.3**
				1440	*22*	*18.0*	*6.5*	11.5	14.7	0.00133	**13.3**

Tested By: Wayne Rayfuse
Date: December 9, 2025

GRAIN SIZE DISTRIBUTION CHART

Client:	*Oakridges Envionmental*	Project No.:	*25-3614*
Project:	*Reach Street*	Location:	--
Sampled By:	*Oakridges Environmental*	Date:	*December 3, 2025*
Sample No.:	*BH-25-6 SS-3*	Depth:	--

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



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

Sample No.	Depth	Description	Moisture Content	Gravel	Sand	Silt	Clay	Class.
BH-25-6 SS-3	--	*Clayey SILT*	*24.9*	*0*	*1*	*60*	*39*	*ML*

MECHANICAL ANALYSIS SHEET

Client: *Oakridges Envionmental* | Project No.: *25-3614*

Project: *Reach Street* | Location: --

Sampled By: *Oakridges Environmental* | Date: December 3, 2025

Sample No.: *BH-25-6 SS-3* | Depth:

SIEVE ANALYSIS OF RET. 4.75mm MATERIAL M2			
SIEVE SIZE (MM'S)	CUMULATIVE		
	CUMULATIVE MASS (GMS.)	% RET M1	% PASS M1
75.0 mm	*0.0*	0.0	**100.0**
63.0 mm	*0.0*	0.0	**100.0**
53.0 mm	*0.0*	0.0	**100.0**
37.5 mm	*0.0*	0.0	**100.0**
26.5 mm	*0.0*	0.0	**100.0**
19.0 mm	*0.0*	0.0	**100.0**
13.2 mm	*0.0*	0.0	**100.0**
9.5 mm	*0.0*	0.0	**100.0**
4.75 mm	*0.0*	0.0	**100.0**
Pan			

SIEVE ANALYSIS OF HYDROMETER MATERIAL (M7)			
SIEVES SIZES (MM'S)	CUMULATIVE MASS (GMS.)	CUMULATIVE % RET M1	CUMULATIVE % PASS M1
2.00 mm	*0.0*	0.0	**100.0**
1.18 mm	*0.04*	0.1	**99.9**
0.600 mm	*0.11*	0.2	**99.8**
0.300 mm	*0.18*	0.3	**99.7**
0.150 mm	*0.44*	0.8	**99.2**
0.075 mm	*0.67*	1.3	**98.7**
Pan	*0.7*		

COARSE MATERIAL		
MASS (TOTAL SAMPLE) (A)	= M1	*439.0*
RET 4.75 mm - DRY	= M2	0.0
PASS 4.75 mm - DRY	= M3	439.0
MASS (TOTAL SAMPLE) (B)	= M4	
PARTICLE SIZE ANALYSIS		
RETAINED ON 2.00 mm - DRY	= M5	0.0
PASSING 2.00 mm - DRY	= M6	439.0
% RET 4.75 = M2 x 100 / M1	= K	0.0
% RET 2.00 = M5 x (100-K) / M1	= L	0.0

FIELD MOISTURE		HYGROSCOPIC MOISTURE
TARE NO.	S6	203
WET SOIL & TARE (GMS.)	*225.5*	*41.98*
DRY SOIL & TARE (GMS.)	*181.4*	*41.97*
MOISTURE (GMS.)	44.1	
DRY SOIL & TARE	181.4	
TARE (GMS.)	*4.1*	
DRY SOIL (GMS.)	177.3	
% MOISTURE	**24.9**	0.9998
DRY MASS (M7) - UNCOR.		53.05
DRY MASS **(M7)** - CORRECT		53.04

HYDROMETER ANALYSIS MATERIAL PASS 2.00mm SIEVE (M7)

SPECIFIC GRAVITY **2.664** | CORRECTION **(A)** 1.00

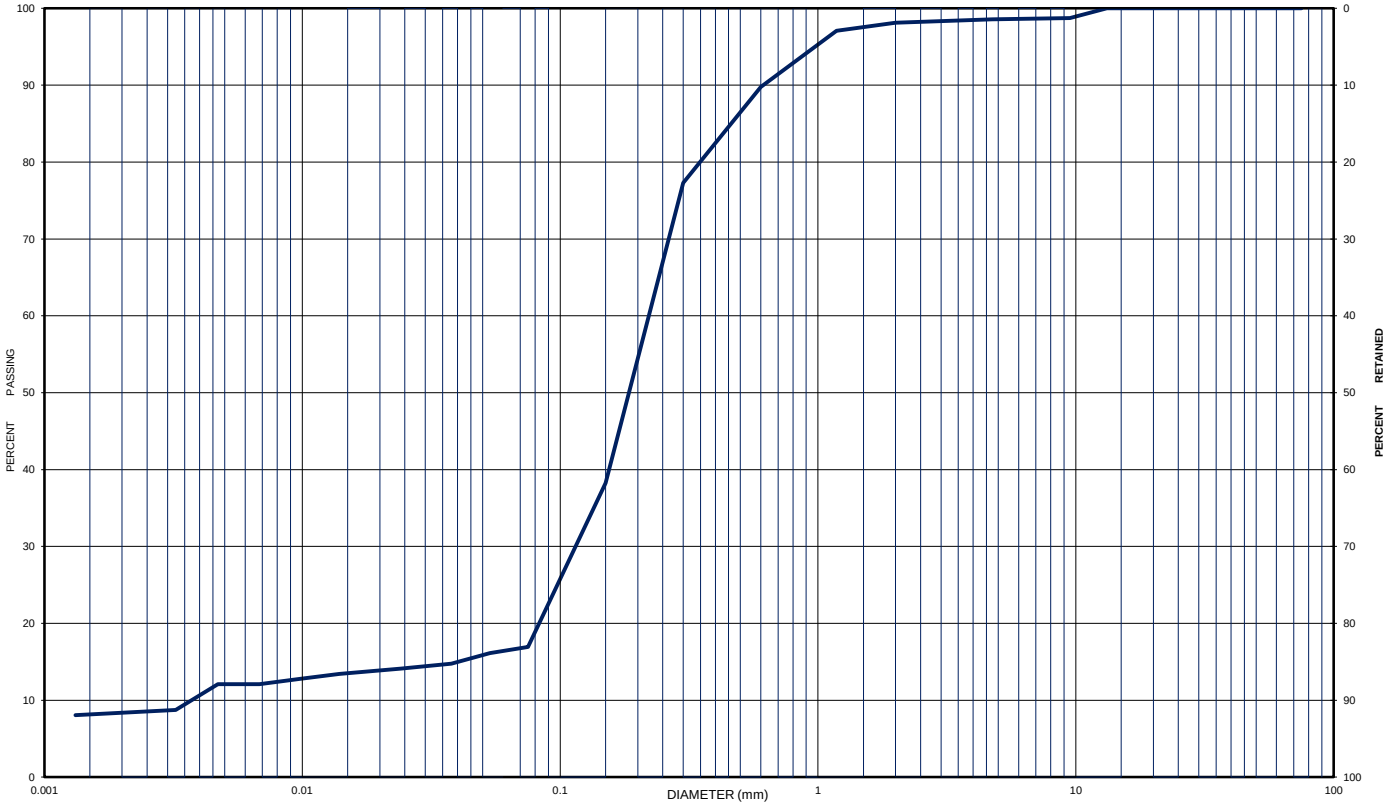
TIME MIN.	TEMP C°	HYDROMETER READING ORIG.	HYDROMETER READING COR.	CR	LEN (MM'S)	CORRECTED DIAMETER (MM)	% PASS OF M1 = (PAR)/M7
1	*24*	*58.5*	*6.5*	52.0	8.0	0.03680	**98.0**
2	*24*	*58.0*	*6.5*	51.5	8.1	0.02618	**97.1**
5	*24*	*57.5*	*6.5*	51.0	8.1	0.01656	**96.2**
15	*24*	*55.0*	*6.5*	48.5	8.5	0.00979	**91.4**
30	*24*	*52.5*	*6.5*	46.0	9.0	0.00713	**86.7**
60	*23*	*47.0*	*6.0*	41.0	9.8	0.00532	**77.3**
120	*23*	*43.0*	*6.0*	37.0	10.4	0.00388	**69.8**
250	*24*	*31.0*	*6.5*	24.5	12.5	0.00291	**46.2**
1440	*23*	*23.0*	*6.0*	17.0	13.7	0.00128	**32.1**

Tested By: Wayne Rayfuse | Date: December 11, 2025

GRAIN SIZE DISTRIBUTION CHART

Client:	*Oakridge Envionmental Limited*	Project No.:	*OE-25-01*
Project:	*Reach Street*	Location:	--
Sampled By:	*Oakridge Environmental Limited*	Date:	*December 3, 2025*
Sample No.:	*BH-25-9 SS-2*	Depth:	

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



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

Sample No.	Depth	Description	Moisture Content	Gravel	Sand	Silt	Clay	Class.
BH-25-9 SS-2	--	*SAND, poorly graded trace of silt and clay*	*11.6*	*1*	*82*	*9*	*8*	*SP-SM*

MECHANICAL ANALYSIS SHEET

Client: *Oakridge Envionmental Limited*
Project: *Reach Street*
Sampled By: *Oakridge Environmental Limited*
Sample No.: *BH-25-9 SS-2*

Project No.: *OE-25-01*
Location: --
Date: December 3, 2025
Depth:

SIEVE ANALYSIS OF RET. 4.75mm MATERIAL M2			
SIEVE SIZE (MM'S)	CUMULATIVE		
	CUMULATIVE MASS (GMS.)	% RET M1	% PASS M1
75.0 mm	*0.0*	0.0	**100.0**
63.0 mm	*0.0*	0.0	**100.0**
53.0 mm	*0.0*	0.0	**100.0**
37.5 mm	*0.0*	0.0	**100.0**
26.5 mm	*0.0*	0.0	**100.0**
19.0 mm	*0.0*	0.0	**100.0**
13.2 mm	*0.0*	0.0	**100.0**
9.5 mm	*3.4*	1.3	**98.7**
4.75 mm	*3.9*	1.4	**98.6**
Pan			

SIEVE ANALYSIS OF HYDROMETER MATERIAL (M7)			
SIEVES SIZES (MM'S)	CUMULATIVE MASS (GMS.)	CUMULATIVE % RET M1	CUMULATIVE % PASS M1
2.00 mm	*5.0*	1.9	**98.1**
1.18 mm	*0.80*	2.9	**97.1**
0.600 mm	*6.17*	10.2	**89.8**
0.300 mm	*15.38*	22.7	**77.3**
0.150 mm	*44.20*	61.8	**38.2**
0.075 mm	*59.93*	83.1	**16.9**
Pan	*61..13*		

COARSE MATERIAL		
MASS (TOTAL SAMPLE) (A)	= M1	*269.2*
RET 4.75 mm - DRY	= M2	3.9
PASS 4.75 mm - DRY	= M3	265.3
MASS (TOTAL SAMPLE) (B)	= M4	
PARTICLE SIZE ANALYSIS		
RETAINED ON 2.00 mm - DRY	= M5	5.0
PASSING 2.00 mm - DRY	= M6	264.2
% RET 4.75 = M2 x 100 / M1	= K	1.4
% RET 2.00 = M5 x (100-K) / M1	= L	1.9

FIELD MOISTURE		HYGROSCOPIC MOISTURE
TARE NO.	S24	206
WET SOIL & TARE (GMS.)	*145.0*	*46.88*
DRY SOIL & TARE (GMS.)	*130.4*	*46.86*
MOISTURE (GMS.)	14.6	
DRY SOIL & TARE	130.4	
TARE (GMS.)	*4.6*	
DRY SOIL (GMS.)	125.8	
% MOISTURE	**11.6**	0.9996

HYDROMETER ANALYSIS MATERIAL PASS 2.00mm SIEVE (M7)

DRY MASS (M7) - UNCOR.	72.44		
SPECIFIC GRAVITY	**2.725**	CORRECTION **(A)**	0.99
DRY MASS **(M7)** - CORRECT	72.41		

TIME MIN.	TEMP C°	HYDROMETER READING ORIG.	COR.	CR	LEN (MM'S)	CORRECTED DIAMETER (MM)	% PASS OF M1 = (PAR)/M7
1	*17*	*20.0*	*8.0*	12.0	14.6	0.05334	**16.1**
2	*17*	*19.0*	*8.0*	11.0	14.7	0.03785	**14.8**
5	*17*	*18.5*	*8.0*	10.5	14.8	0.02402	**14.1**
15	*17*	*18.0*	*8.0*	10.0	14.9	0.01391	**13.4**
30	*18*	*17.5*	*8.0*	9.5	15.0	0.00974	**12.7**
60	*19*	*17.0*	*8.0*	9.0	15.1	0.00683	**12.1**
120	*21*	*16.0*	*7.0*	9.0	15.1	0.00471	**12.1**
250	*23*	*13.5*	*7.0*	6.5	15.5	0.00323	**8.7**
1440	*25*	*11.5*	*5.5*	6.0	15.6	0.00132	**8.1**

Tested By: Wayne Rayfuse
Date: December 9, 2025

TEST FORM
MOISTURE CONTENT LS-701

Project Name: *Reach Street* Project No.: *25-3614*

Client Name: *Oakridges Environmental Ltd.* Date Taken: ---

TEST HOLE NO.	BH25-1	BH25-1	BH25-1	BH25-1	BH25-1	BH25-1
SAMPLE NO.	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7
DEPTH	--	--	10"-17"	5"-22"	0"-13.5"	0"-10"
TARE NO.	S23	S42	S52	S42	S61	S26
WT OF TARE (gms.)	4.6	4.2	3.9	4.2	4.1	4.0
WT. SAMPLE WET + TARE (gms.)	214.7	199.2	175.1	262.9	193.8	220.2
WT. SAMPLE DRY + TARE (gms.)	205.3	191.8	166.2	239.9	183.9	200.0
WT. OF MOISTURE (gms.)	9.4	7.4	8.9	23.0	9.9	20.2
WT OF DRY SOIL (gms.)	200.7	187.6	162.3	235.7	179.8	196.0
MOISTURE CONTENT (%)	**4.7**	**3.9**	**5.5**	**9.8**	**5.5**	**10.3**

TEST HOLE NO.	BH25-1	BH25-1	BH25-1	BH25-1	BH25-1	BH25-1
SAMPLE NO.	SS-8	SS-9	SS-10	SS-10	SS-11	SS-11
DEPTH	0"-13"	0"-3"	4"-14"	4"-24"	0"-11"	11"-16"
TARE NO.	S41	S51	S4	S22	S57	S8
WT OF TARE (gms.)	4.2	4.0	5.1	4.4	4.3	4.0
WT. SAMPLE WET + TARE (gms.)	255.0	148.2	235.4	175.9	185.0	238.7
WT. SAMPLE DRY + TARE (gms.)	235.9	141.0	200.6	162.3	148.9	220.0
WT. OF MOISTURE (gms.)	19.1	7.2	34.8	13.6	36.1	18.7
WT OF DRY SOIL (gms.)	231.7	137.0	195.5	157.9	144.6	216.0
MOISTURE CONTENT (%)	**8.2**	**5.3**	**17.8**	**8.6**	**25.0**	**8.7**

TEST FORM
MOISTURE CONTENT LS-701

Project Name: *Reach Street* Project No.: *25-3614*

Client Name: *Oakridges Environmental Ltd.* Date Taken: ---

TEST HOLE NO.	BH25-1		BH25-2	BH25-2	BH25-2	BH25-2
SAMPLE NO.	SS-12		SS-2	SS-3	SS-4	SS-5
DEPTH	0"-12"		10"-18"	4"-18"	0"-19"	--
TARE NO.	S16		S32	S34	S7	S49
WT OF TARE (gms.)	4.7		4.0	4.6	4.5	4.1
WT. SAMPLE WET + TARE (gms.)	244.3		275.1	311.6	253.3	276.9
WT. SAMPLE DRY + TARE (gms.)	228.7		259.1	292.2	235.4	257.3
WT. OF MOISTURE (gms.)	15.6		16.0	19.4	17.9	19.6
WT OF DRY SOIL (gms.)	224.0		255.1	287.6	230.9	253.2
MOISTURE CONTENT (%)	**7.0**		**6.3**	**6.7**	**7.8**	**7.7**

TEST HOLE NO.	BH25-2	BH25-2	BH25-2	BH25-2		BH25-3
SAMPLE NO.	SS-6	SS-7	SS-8	SS-9		SS-2
DEPTH	0"-20"	0"-10"	10"-19"	--		Below 3'
TARE NO.	S1	S37	S47	S45		S48
WT OF TARE (gms.)	4.0	4.5	4.2	4.4		4.0
WT. SAMPLE WET + TARE (gms.)	277.6	190.1	259.8	260.9		241.0
WT. SAMPLE DRY + TARE (gms.)	258.6	172.5	245.3	247.6		193.3
WT. OF MOISTURE (gms.)	19.0	17.6	14.5	13.3		47.7
WT OF DRY SOIL (gms.)	254.6	168.0	241.1	243.2		189.3
MOISTURE CONTENT (%)	**7.5**	**10.5**	**6.0**	**5.5**		**25.2**

TEST FORM
MOISTURE CONTENT LS-701

Project Name: *Reach Street* Project No.: *25-3614*

Client Name: *Oakridges Environmental Ltd.* Date Taken: ---

TEST HOLE NO.	BH25-3	BH25-3	BH25-3	BH25-3	BH25-3	BH25-3
SAMPLE NO.	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8
DEPTH	--	--	--	--	--	--
TARE NO.	S44	S46	S27	S53	S43	S40
WT OF TARE (gms.)	4.0	4.2	4.7	4.0	4.1	4.1
WT. SAMPLE WET + TARE (gms.)	281.1	353.0	211.7	293.5	303.4	276.7
WT. SAMPLE DRY + TARE (gms.)	230.7	326.6	194.3	271.1	279.0	243.7
WT. OF MOISTURE (gms.)	50.4	26.4	17.4	22.4	24.4	33.0
WT OF DRY SOIL (gms.)	226.7	322.4	189.6	267.1	274.9	239.6
MOISTURE CONTENT (%)	**22.2**	**8.2**	**9.2**	**8.4**	**8.9**	**13.8**

TEST HOLE NO.		BH25-4a	BH25-4a	BH25-4a	BH25-4a	BH25-4a
SAMPLE NO.		SS-4	SS-5	SS-6	SS-7	SS-8
DEPTH		--	--	--	--	--
TARE NO.		S30	S13	S38	S28	S31
WT OF TARE (gms.)		4.7	4.8	4.7	4.0	4.7
WT. SAMPLE WET + TARE (gms.)		274.1	243.6	279.7	343.8	281.7
WT. SAMPLE DRY + TARE (gms.)		257.0	232.7	263.1	320.2	270.5
WT. OF MOISTURE (gms.)		17.1	10.9	16.6	23.6	11.2
WT OF DRY SOIL (gms.)		252.3	227.9	258.4	316.2	265.8
MOISTURE CONTENT (%)		**6.8**	**4.8**	**6.4**	**7.5**	**4.2**

TEST FORM
MOISTURE CONTENT LS-701

Project Name: *Reach Street* Project No.: *25-3614*

Client Name: *Oakridges Environmental Ltd.* Date Taken: ---

TEST HOLE NO.		BH25-5	BH25-5	BH25-5	BH25-5	BH25-5
SAMPLE NO.		SS-2	SS-3	SS-4	SS-5	SS-6
DEPTH		--	0"-12"	--	--	--
TARE NO.		S60	S21	S58	S9	S15
WT OF TARE (gms.)		4.0	4.7	4.0	4.8	4.9
WT. SAMPLE WET + TARE (gms.)		211.7	283.5	298.0	257.4	270.6
WT. SAMPLE DRY + TARE (gms.)		189.8	253.1	271.8	235.4	252.5
WT. OF MOISTURE (gms.)		21.9	30.4	26.2	22.0	18.1
WT OF DRY SOIL (gms.)		185.8	248.4	267.8	230.6	247.6
MOISTURE CONTENT (%)		**11.8**	**12.2**	**9.8**	**9.5**	**7.3**

TEST HOLE NO.	BH25-5	BH25-5		BH25-6	BH25-6	BH25-6
SAMPLE NO.	SS-7	SS-8		SS-2	SS-3	SS-4
DEPTH	--	--		--	--	--
TARE NO.	S17	S55		S50	S6	S11
WT OF TARE (gms.)	4.7	3.9		4.5	4.1	4.8
WT. SAMPLE WET + TARE (gms.)	271.6	236.4		233.9	225.5	223.0
WT. SAMPLE DRY + TARE (gms.)	254.8	212.0		185.0	181.4	184.4
WT. OF MOISTURE (gms.)	16.8	24.4		48.9	44.1	38.6
WT OF DRY SOIL (gms.)	250.1	208.1		180.5	177.3	179.6
MOISTURE CONTENT (%)	**6.7**	**11.7**		**27.1**	**24.9**	**21.5**

TEST FORM
MOISTURE CONTENT LS-701

Project Name: *Reach Street* Project No.: *25-3614*

Client Name: *Oakridges Environmental Ltd.* Date Taken: ---

TEST HOLE NO.	BH25-6	BH25-6	BH25-6		BH25-7	BH25-7
SAMPLE NO.	SS-5	SS-6	SS-7		SS-1	SS-2
DEPTH	--	--	--		--	--
TARE NO.	S20	S12	S18		S18	S12
WT OF TARE (gms.)	4.7	5.0	4.6		4.6	4.9
WT. SAMPLE WET + TARE (gms.)	254.2	261.3	289.9		238.8	260.8
WT. SAMPLE DRY + TARE (gms.)	204.3	209.2	235.1		205.9	205.6
WT. OF MOISTURE (gms.)	49.9	52.1	54.8		32.9	55.2
WT OF DRY SOIL (gms.)	199.6	204.2	230.5		201.3	200.7
MOISTURE CONTENT (%)	**25.0**	**25.5**	**23.8**		**16.3**	**27.5**

TEST HOLE NO.	BH25-7	BH25-7	BH25-7	BH25-7	BH25-7	
SAMPLE NO.	SS-3	SS-4	SS-5	SS-6	SS-7	
DEPTH	--	--	--	--	--	
TARE NO.	S11	S55	S20	S17	S9	
WT OF TARE (gms.)	4.8	4.0	4.7	4.6	4.8	
WT. SAMPLE WET + TARE (gms.)	255.9	248.1	241.6	235.8	254.5	
WT. SAMPLE DRY + TARE (gms.)	209.6	204.3	198.7	188.3	211.3	
WT. OF MOISTURE (gms.)	46.3	43.8	42.9	47.5	43.2	
WT OF DRY SOIL (gms.)	204.8	200.3	194.0	183.7	206.5	
MOISTURE CONTENT (%)	**22.6**	**21.9**	**22.1**	**25.9**	**20.9**	

TEST FORM
MOISTURE CONTENT LS-701

Project Name: *Reach Street* Project No.: *25-3614*

Client Name: *Oakridges Environmental Ltd.* Date Taken: ---

TEST HOLE NO.	BH25-8	BH25-8	BH25-8	BH25-8	BH25-8	BH25-8
SAMPLE NO.	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7
DEPTH	4"-21"	--	--	--	--	--
TARE NO.	S50	S7	S15	S21	S60	S58
WT OF TARE (gms.)	4.2	4.5	4.8	4.8	4.1	4.0
WT. SAMPLE WET + TARE (gms.)	239.3	229.4	241.1	253.8	243.7	240.7
WT. SAMPLE DRY + TARE (gms.)	197.3	188.6	202.8	226.1	227.5	227.9
WT. OF MOISTURE (gms.)	42.0	40.8	38.3	27.7	16.2	12.8
WT OF DRY SOIL (gms.)	193.1	184.1	198.0	221.3	223.4	223.9
MOISTURE CONTENT (%)	**21.8**	**22.2**	**19.3**	**12.5**	**7.3**	**5.7**

TEST HOLE NO.		BH25-9	BH25-9	BH25-9	BH25-9	BH25-9
SAMPLE NO.		SS-2	SS-3Top	SS-3Bot	SS-4	SS-5
DEPTH		--	--	--	--	--
TARE NO.		S24	S14	S25	S35	S34
WT OF TARE (gms.)		4.6	4.7	4.7	4.2	4.5
WT. SAMPLE WET + TARE (gms.)		145.0	136.7	260.5	218.1	294.9
WT. SAMPLE DRY + TARE (gms.)		130.4	118.5	217.9	177.3	244.4
WT. OF MOISTURE (gms.)		14.6	18.2	42.6	40.8	50.5
WT OF DRY SOIL (gms.)		125.8	113.8	213.2	173.1	239.9
MOISTURE CONTENT (%)		**11.6**	**16.0**	**20.0**	**23.6**	**21.1**

TEST FORM
MOISTURE CONTENT LS-701

Project Name: *Reach Street* Project No.: *25-3614*

Client Name: *Oakridges Environmental Ltd.* Date Taken: ---

TEST HOLE NO.	BH25-9	BH25-9		BH25-10	BH25-10	BH25-10
SAMPLE NO.	SS-6	SS-7		SS-2	SS-3	SS-4
DEPTH	--	--		--	--	--
TARE NO.	S36	S29		S33	S5	S10
WT OF TARE (gms.)	4.5	4.8		4.7	4.6	4.8
WT. SAMPLE WET + TARE (gms.)	253.7	339.5		285.1	252.0	249.4
WT. SAMPLE DRY + TARE (gms.)	204.3	277.2		263.3	235.5	236.3
WT. OF MOISTURE (gms.)	49.4	62.3		21.8	16.5	13.1
WT OF DRY SOIL (gms.)	199.8	272.4		258.6	230.9	231.5
MOISTURE CONTENT (%)	**24.7**	**22.9**		**8.4**	**7.1**	**5.7**

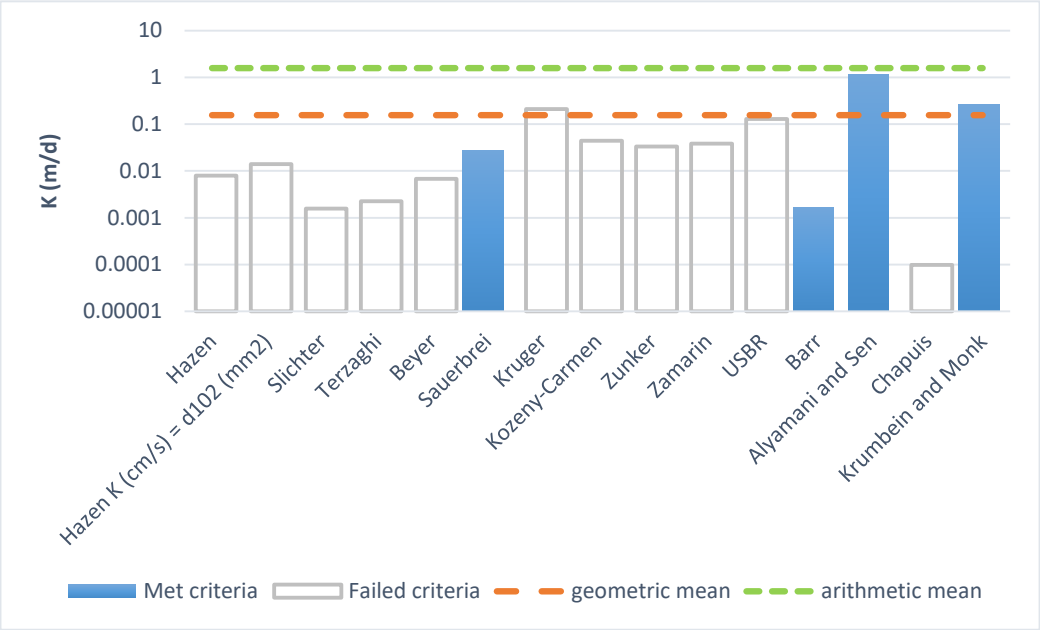
TEST HOLE NO.						
SAMPLE NO.						
DEPTH						
TARE NO.						
WT OF TARE (gms.)						
WT. SAMPLE WET + TARE (gms.)						
WT. SAMPLE DRY + TARE (gms.)						
WT. OF MOISTURE (gms.)						
WT OF DRY SOIL (gms.)						
MOISTURE CONTENT (%)						

K from Grain Size Analysis Report Project: 25-3614

Sample Name: BH25-1 - Upper Weather Newmarket Till

Mass Sample (g): 421.3 assumed T (oC) 20 assumed

Poorly sorted gravelly sand low in fines



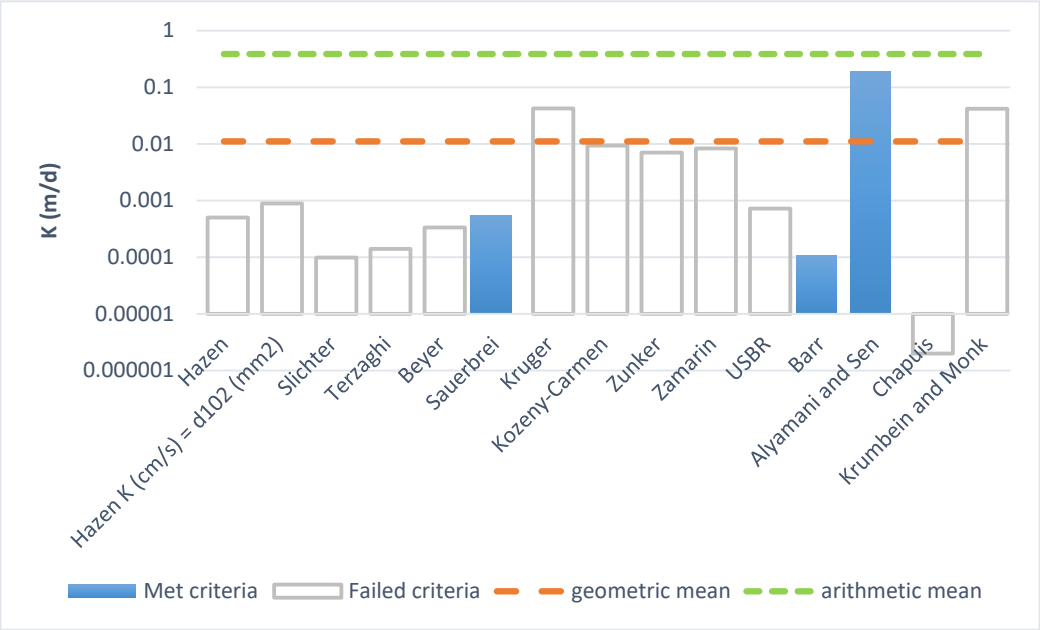
Estimation of Hydraulic Conductivity	cm/s	m/s	m/d	de
Hazen	.926E-05	.926E-07	0.01	
Hazen K (cm/s) = d_{10} (mm)	.164E-04	.164E-06	0.01	
Slichter	.182E-05	.182E-07	0.00	
Terzaghi	.260E-05	.260E-07	0.00	
Beyer	.793E-05	.793E-07	0.01	
Sauerbrei	.324E-04	.324E-06	0.03	
Kruger	.244E-03	.244E-05	0.21	
Kozeny-Carmen	.511E-04	.511E-06	0.04	
Zunker	.384E-04	.384E-06	0.03	
Zamarin	.446E-04	.446E-06	0.04	
USBR	.149E-03	.149E-05	0.13	
Barr	.195E-05	.195E-07	0.00	
Alyamani and Sen	.133E-02	.133E-04	1.15	
Chapuis	.114E-06	.114E-08	0.00	
Krumbein and Monk	.308E-03	.308E-05	0.27	
Shepherd	.754E-02	.754E-04	6.52	
geometric mean	.181E-03	.181E-05	0.16	
arithmetic mean	.184E-02	.184E-04	1.59	

K from Grain Size Analysis Report Project: 25-3614

Sample Name: BH25-2 - Lower Newmarket Till

Mass Sample (g): 507.7 assumed T (oC) 20 assumed

Poorly sorted sandy silt with fines



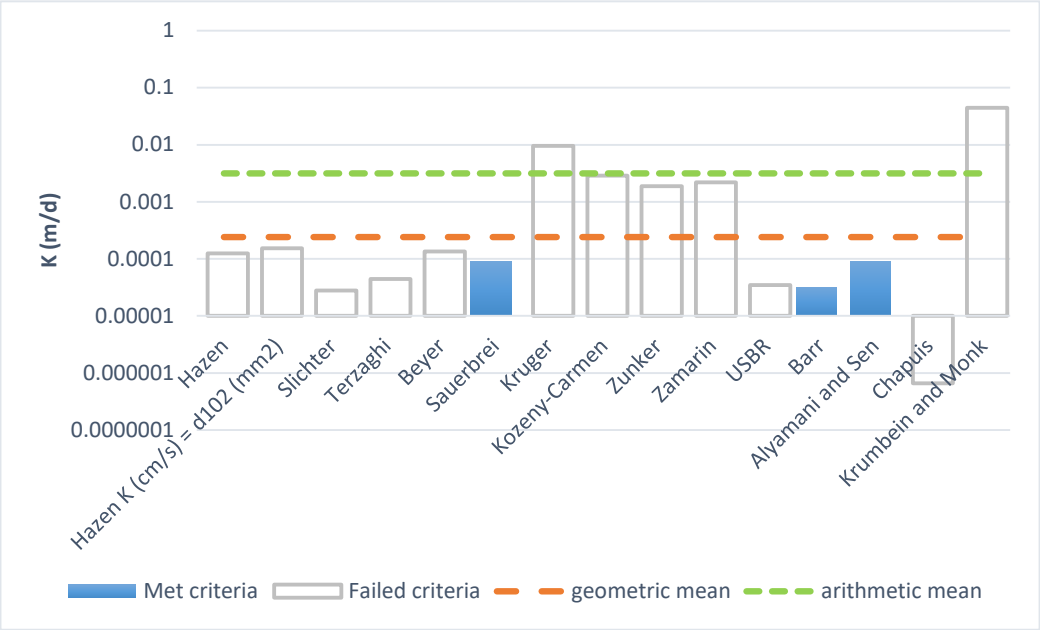
Estimation of Hydraulic Conductivity	cm/s	m/s	m/d	de
Hazen	.583E-06	.583E-08	0.00	
Hazen K (cm/s) = d_{10} (mm)	.103E-05	.103E-07	0.00	
Slichter	.115E-06	.115E-08	0.00	
Terzaghi	.163E-06	.163E-08	0.00	
Beyer	.389E-06	.389E-08	0.00	
Sauerbrei	.641E-06	.641E-08	0.00	
Kruger	.492E-04	.492E-06	0.04	
Kozeny-Carmen	.108E-04	.108E-06	0.01	
Zunker	.820E-05	.820E-07	0.01	
Zamarin	.963E-05	.963E-07	0.01	
USBR	.834E-06	.834E-08	0.00	
Barr	.123E-06	.123E-08	0.00	
Alyamani and Sen	.221E-03	.221E-05	0.19	
Chapuis	.231E-08	.231E-10	0.00	
Krumbein and Monk	.486E-04	.486E-06	0.04	
Shepherd	.157E-02	.157E-04	1.36	
geometric mean	.129E-04	.129E-06	0.01	
arithmetic mean	.448E-03	.448E-05	0.39	

K from Grain Size Analysis Report Project: 25-3614

Sample Name: BH25-6 - Glaciolacustrine Silt/Clay

Mass Sample (g): 439 assumed T (oC) 20 assumed

Poorly sorted clay with fines



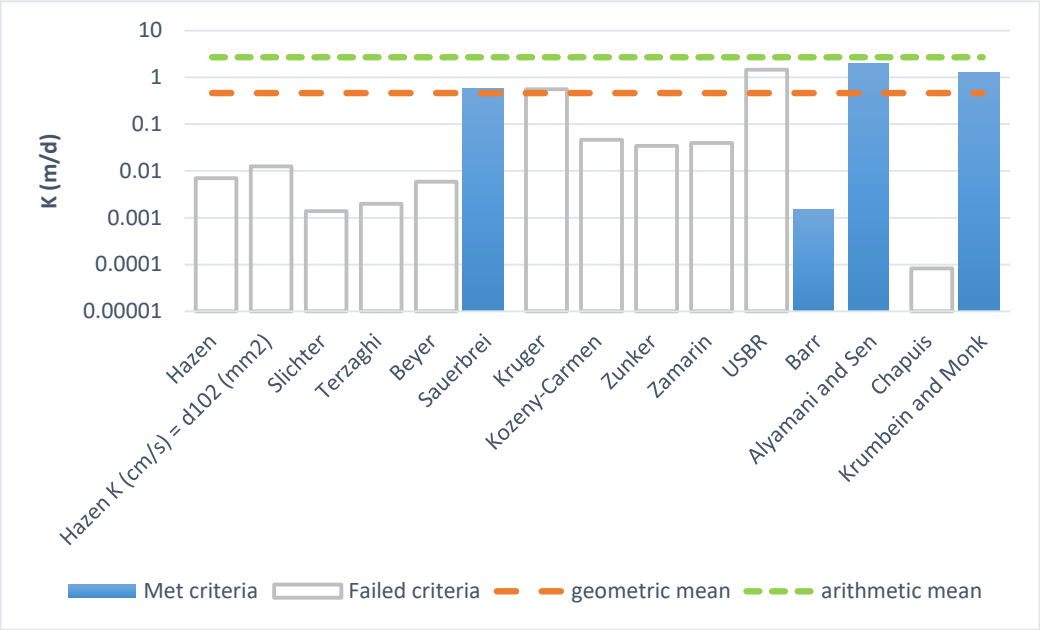
Estimation of Hydraulic Conductivity	cm/s	m/s	m/d	de
Hazen	.144E-06	.144E-08	0.00	
Hazen K (cm/s) = d_{10} (mm)	.177E-06	.177E-08	0.00	
Slichter	.322E-07	.322E-09	0.00	
Terzaghi	.516E-07	.516E-09	0.00	
Beyer	.156E-06	.156E-08	0.00	
Sauerbrei	.105E-06	.105E-08	0.00	
Kruger	.111E-04	.111E-06	0.01	
Kozeny-Carmen	.332E-05	.332E-07	0.00	
Zunker	.216E-05	.216E-07	0.00	
Zamarin	.254E-05	.254E-07	0.00	
USBR	.403E-07	.403E-09	0.00	
Barr	.371E-07	.371E-09	0.00	
Alyamani and Sen	.105E-06	.105E-08	0.00	
Chapuis	.760E-09	.760E-11	0.00	
Krumbein and Monk	.515E-04	.515E-06	0.04	
Shepherd	.144E-04	.144E-06	0.01	
geometric mean	.277E-06	.277E-08	0.00	
arithmetic mean	.366E-05	.366E-07	0.00	

K from Grain Size Analysis Report Project: 25-3614

Sample Name: BH25-9 - Glaciolacustrine Sand

Mass Sample (g): 265.3 assumed T (oC) 20 assumed

Poorly sorted sand low in fines

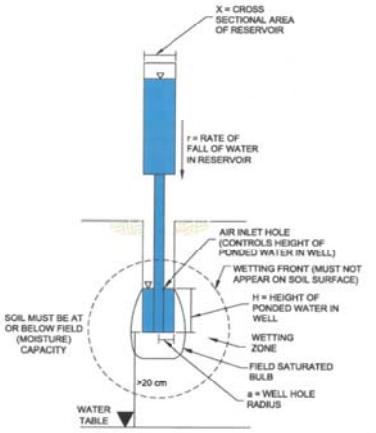


Estimation of Hydraulic Conductivity	cm/s	m/s	m/d	de
Hazen	.818E-05	.818E-07	0.01	
Hazen K (cm/s) = d_{10} (mm)	.144E-04	.144E-06	0.01	
Slichter	.161E-05	.161E-07	0.00	
Terzaghi	.229E-05	.229E-07	0.00	
Beyer	.679E-05	.679E-07	0.01	
Sauerbrei	.665E-03	.665E-05	0.57	
Kruger	.646E-03	.646E-05	0.56	
Kozeny-Carmen	.539E-04	.539E-06	0.05	
Zunker	.401E-04	.401E-06	0.03	
Zamarin	.461E-04	.461E-06	0.04	
USBR	.169E-02	.169E-04	1.46	
Barr	.172E-05	.172E-07	0.00	
Alyamani and Sen	.232E-02	.232E-04	2.01	
Chapuis	.954E-07	.954E-09	0.00	
Krumbein and Monk	.150E-02	.150E-04	1.29	
Shepherd	.112E-01	.112E-03	9.64	
geometric mean	.537E-03	.537E-05	0.46	
arithmetic mean	.313E-02	.313E-04	2.70	

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

Test Pit #: HA25-1
Date: November 25, 2025
Site: Port Perry - Reach St
Job #: 25-3614
Initials: DB

Weather: +5, windy
Type: Slow Soil Permeameter
Field Permeability Test #: 1



Field Parameters		
D - reservoir diameter (cm):	8.30	
d - well hole diameter (cm):	10.00	
H - height of water in well (cm):	15.00	
X - cross-sectional area (cm^2):	12.80	
Depth below ground surface (cm):	50.00	
Soil Texture:	Silty Sand	
Soil Structure:	Loose	
α* (cm^{-1}):	0.12	
C-Factor:	1.36	

Field Data

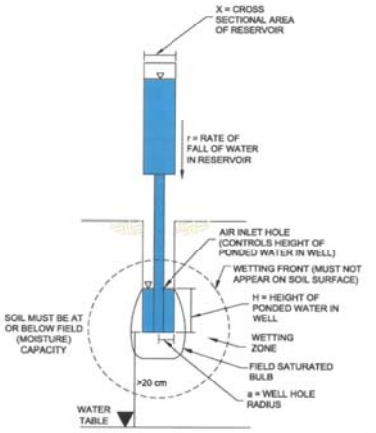
Time	Elapsed Time (min)	Change (min)	Water Level (cm)	Change (cm)	Rate (cm/min)	Notes
	0.0	0	38.5			Initially high rate
	0.5	0.5	37.0	1.5	3.00	
	1.0	0.5	36.0	1.0	2.00	Average rate calculated from here
	1.5	0.5	35.0	1.0	2.00	
	2.0	0.5	34.0	1.0	2.00	
	3.0	1.0	32.0	2.0	2.00	
	4.0	1.0	30.5	1.5	1.50	
	5.0	1.0	28.5	2.0	2.00	
	6.0	1.0	27.0	1.5	1.50	
	8.0	2.0	24.0	3.0	1.50	
	10.0	2.0	21.0	3.0	1.50	
	12.0	2.0	18.5	2.5	1.25	
	14.0	2.0	15.0	3.5	1.75	
	16.0	2	12.5	2.5	1.3	
	18.0	2	11.0	1.5	0.8	

Rate (cm/min):	**1.62**
Hydraulic Conductivity - K_{fs} (cm/s):	**2.03E-04**
Interpreted Infiltration Rate - I_r (mm/hr):	**52.9**
Interpreted Infiltration Rate - I_r (mm/hr):	**52.9**
Calculated Infiltration Rate - I_r (mm/hr):	**55.9**

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

Test Pit #: HA25-1
Date: November 25, 2025
Site: Port Perry - Reach St
Job #: 25-3614
Initials: DB

Weather: +5, windy
Type: Slow Soil Permeameter
Field Permeability Test #: 2



Field Parameters		
D - reservoir diameter (cm):	8.30	
d - well hole diameter (cm):	10.00	
H - height of water in well (cm):	15.00	
X - cross-sectional area (cm^2):	12.80	
Depth below ground surface (cm):	50.00	
Soil Texture:	Silty Sand	
Soil Structure:	Loose	
α* (cm^{-1}):	0.12	
C-Factor:	1.36	

Field Data

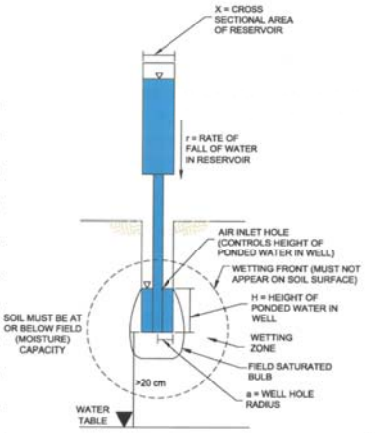
Time	Elapsed Time (min)	Change (min)	Water Level (cm)	Change (cm)	Rate (cm/min)	Notes
	0.0	0	39.0			Initially high rate
	0.5	0.5	38.8	0.2	0.40	
	1.0	0.5	38.8			
	1.5	0.5	38.8			
	2.0	0.5	38.8			
	3.0	1.0	38.8			
	4.0	1.0	38.8			
	5.0	1.0	38.8			
	7.0	2.0	38.8			
	10.0	3.0	37.0	1.8	0.60	Average rate calculated from here
	15.0	5.0	33.0	4.0	0.80	
	25.0	10.0	29.0	4.0	0.40	
	30.0	5.0	25.3	3.7	0.74	
	35.0	5	21.5	3.8	0.8	
	40.0	5	17.7	3.8	0.8	
	45.0	5	14.5	3.2	0.6	

Rate (cm/min):	**0.67**
Hydraulic Conductivity - K_{fs} (cm/s):	**8.45E-05**
Interpreted Infiltration Rate - I_r (mm/hr):	**see below**
Interpreted Infiltration Rate - I_r (mm/hr):	**46.6**
Calculated Infiltration Rate - I_r (mm/hr):	**44.2**

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

Test Pit #: HA25-3
Date: November 26, 2025
Site: Port Perry - Reach St
Job #: 25-3614
Initials: DM

Weather: +5, windy, overcast
Type: Standard Permeameter
Field Permeability Test #: 3



Field Parameters		
D - reservoir diameter (cm):	8.30	
d - well hole diameter (cm):	10.00	
H - height of water in well (cm):	15.00	
X - cross-sectional area (cm^2):	53.46	
Depth below ground surface (cm):	69.00	
Soil Texture:	Silty Sand	
Soil Structure:	Loose	
α^* (cm^{-1}):	0.12	
C-Factor:	1.36	

Field Data

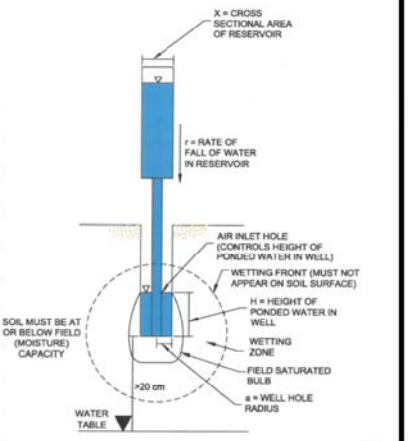
Time	Elapsed Time (min)	Change (min)	Water Level (cm)	Change (cm)	Rate (cm/min)	Notes
	0.0	0	7.4		0.00	Initially high rate
	1.0	1.0	6.7	0.7	0.70	
	2.0	1.0	6.3	0.4	0.40	
	3.0	1.0	5.9	0.4	0.40	
	4.0	1.0	5.8	0.1	0.10	
	5.0	1.0	5.5	0.3	0.30	
	6.0	1.0	5.3	0.2	0.20	
	9.0	3.0	5.0	0.3	0.10	Average rate calculated from here
	14.0	5.0	4.4	0.6	0.12	
	29.0	15.0	2.8	1.6	0.11	
	41.0	12.0	1.5	1.3	0.11	
	47.0	6.0	0.9	0.6	0.10	

Rate (cm/min):	0.11
Hydraulic Conductivity - K_{fs} (cm/s):	5.62E-05
Interpreted Infiltration Rate - I_r (mm/hr):	see below
Interpreted Infiltration Rate - I_r (mm/hr):	40.3
Calculated Infiltration Rate - I_r (mm/hr):	39.7

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

Test Pit #: HA25-6
Date: November 26, 2025
Site: Port Perry - Reach St
Job #: 25-3614
Initials: DM

Weather: +5, windy, overcast
Type: Standard Permeameter
Field Permeability Test #: 4



Field Parameters		
D - reservoir diameter (cm):	8.30	
d - well hole diameter (cm):	10.00	
H - height of water in well (cm):	15.00	
X - cross-sectional area (cm^2):	53.46	
Depth below ground surface (cm):	53.00	
Soil Texture:	Silty Sand	
Soil Structure:	Loose	
α* (cm^{-1}):	0.12	
C-Factor:	1.36	

Field Data

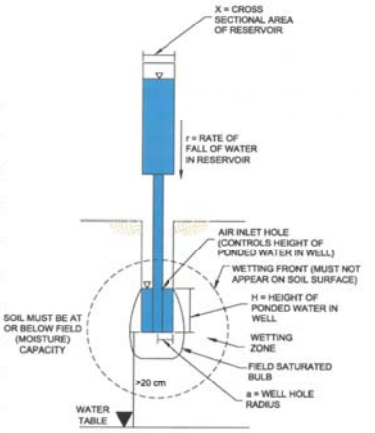
Time	Elapsed Time (min)	Change (min)	Water Level (cm)	Change (cm)	Rate (cm/min)	Notes
	0.0	0	24.4		0.00	Initially high rate
	1.0	1.0	24.2	0.2	0.20	Average rate calculated from here
	2.0	1.0	23.9	0.3	0.30	
	3.0	1.0	23.6	0.3	0.30	
	4.0	1.0	23.3	0.3	0.30	
	5.0	1.0	23.0	0.3	0.30	
	14.0	9.0	21.0	2.0	0.22	
	21.0	7.0	19.5	1.5	0.21	
	97.0	76.0	4.3	15.2	0.20	

Rate (cm/min):	**0.25**
Hydraulic Conductivity - K_{fs} (cm/s):	**1.34E-04**
Interpreted Infiltration Rate - I_r (mm/hr):	**50.9**
Interpreted Infiltration Rate - I_r (mm/hr):	**50.9**
Calculated Infiltration Rate - I_r (mm/hr):	**50.0**

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Environmental and Hydrogeological Services

Test Pit #: HA25-9
Date: November 26, 2025
Site: Port Perry - Reach St
Job #: 25-3614
Initials: DM

Weather: +5, windy, overcast
Type: Standard Permeameter
Field Permeability Test #: 5



Field Parameters		
D - reservoir diameter (cm):	8.30	
d - well hole diameter (cm):	10.00	
H - height of water in well (cm):	15.00	
X - cross-sectional area (cm^2):	53.46	
Depth below ground surface (cm):	53.00	
Soil Texture:	Silty Sand	
Soil Structure:	Loose	
α^* (cm^{-1}):	0.12	
C-Factor:	1.36	

Field Data

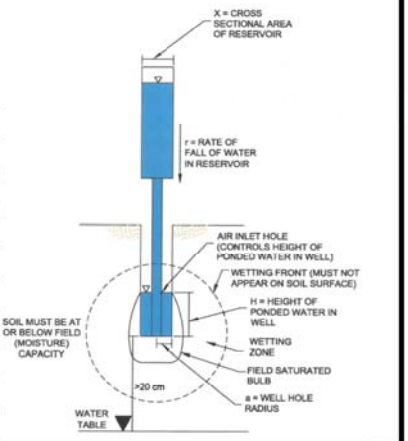
Time	Elapsed Time (min)	Change (min)	Water Level (cm)	Change (cm)	Rate (cm/min)	Notes
	0.0	0	35.0		0.00	Initially high rate
	1.0	1.0	29.7	5.3	5.30	
	2.0	1.0	29.0	0.7	0.70	
	8.0	6.0	25.7	3.3	0.55	Average rate calculated from here
	18.0	10.0	20.5	5.2	0.52	
	26.0	8.0	16.4	4.1	0.51	
	36.0	10.0	11.1	5.3	0.53	
	47.0	11.0	5.1	6.0	0.55	

Rate (cm/min):	0.53
Hydraulic Conductivity - K_{fs} (cm/s):	2.79E-04
Interpreted Infiltration Rate - I_r (mm/hr):	55.0
Interpreted Infiltration Rate - I_r (mm/hr):	55.0
Calculated Infiltration Rate - I_r (mm/hr):	60.9

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

Test Pit #: HA25-11
Date: November 26, 2025
Site: Port Perry - Reach St
Job #: 25-3614
Initials: DM

Weather: +5, windy, overcast, cold
Type: Standard Permeameter
Field Permeability Test #: 6



Field Parameters		
D - reservoir diameter (cm):	8.30	
d - well hole diameter (cm):	10.00	
H - height of water in well (cm):	15.00	
X - cross-sectional area (cm^2):	53.46	
Depth below ground surface (cm):	56.00	
Soil Texture:	Silty Sand	
Soil Structure:	Loose	
α* (cm^{-1}):	0.12	
C-Factor:	1.36	

Field Data

Time	Elapsed Time (min)	Change (min)	Water Level (cm)	Change (cm)	Rate (cm/min)	Notes
	0.0	0	35.0		0.00	Initially high rate
	1.0	1.0	33.3	1.7	1.70	
	2.0	1.0	32.0	1.3	1.30	Average rate calculated from here
	4.0	2.0	29.4	2.6	1.30	
	6.0	2.0	26.7	2.7	1.35	
	8.0	2.0	24.2	2.5	1.25	
	10.0	2.0	21.5	2.7	1.35	
	15.0	5.0	15.0	6.5	1.30	
	20.0	5.0	8.0	7.0	1.40	
	25.0	5.0	1.3	6.7	1.34	

Rate (cm/min):	**1.32**
Hydraulic Conductivity - K_{fs} (cm/s):	**6.96E-04**
Interpreted Infiltration Rate - I_r (mm/hr):	**66.5**
Interpreted Infiltration Rate - I_r (mm/hr):	**66.5**
Calculated Infiltration Rate - I_r (mm/hr):	**77.8**

Appendix G

Test Curves

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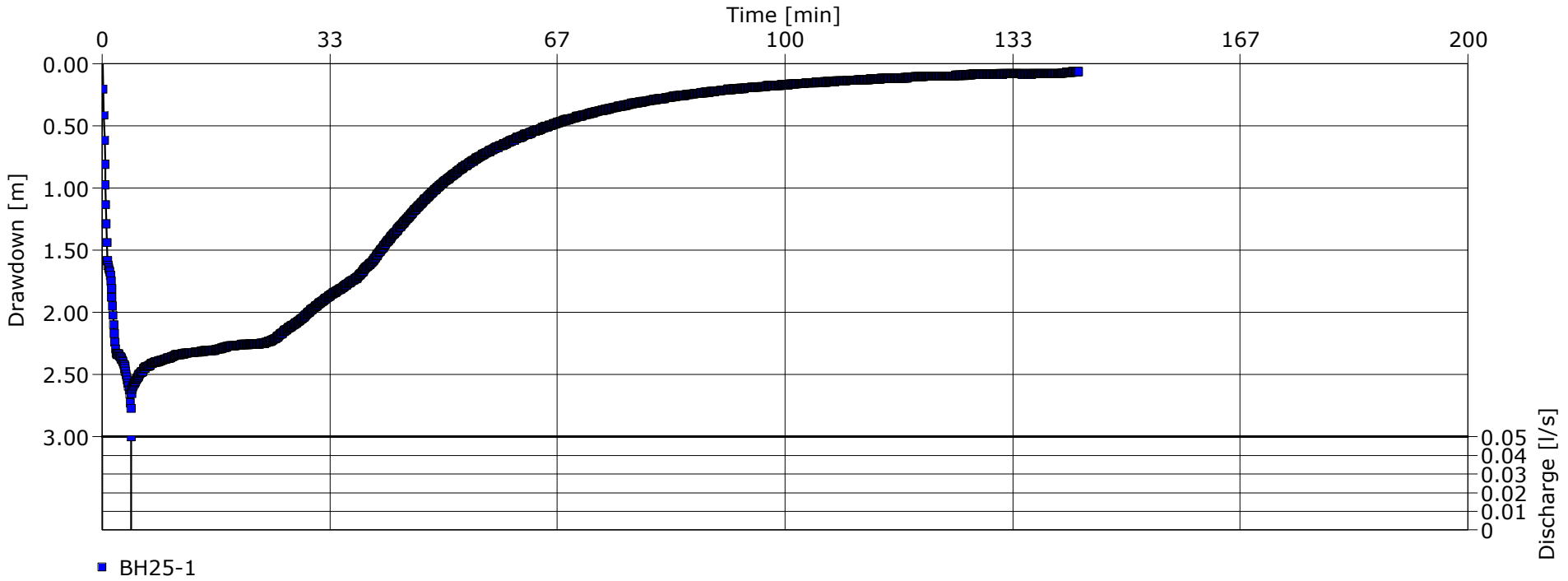
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-1	Pumping Well: BH25-1
Test Conducted by: DM		Test Date: 2025-12-17
Analysis Performed by: DM/DC/BK	BH25-1, Time-Drawdown (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 3.81 m	Discharge: variable, average rate 0.05 [l/s]	



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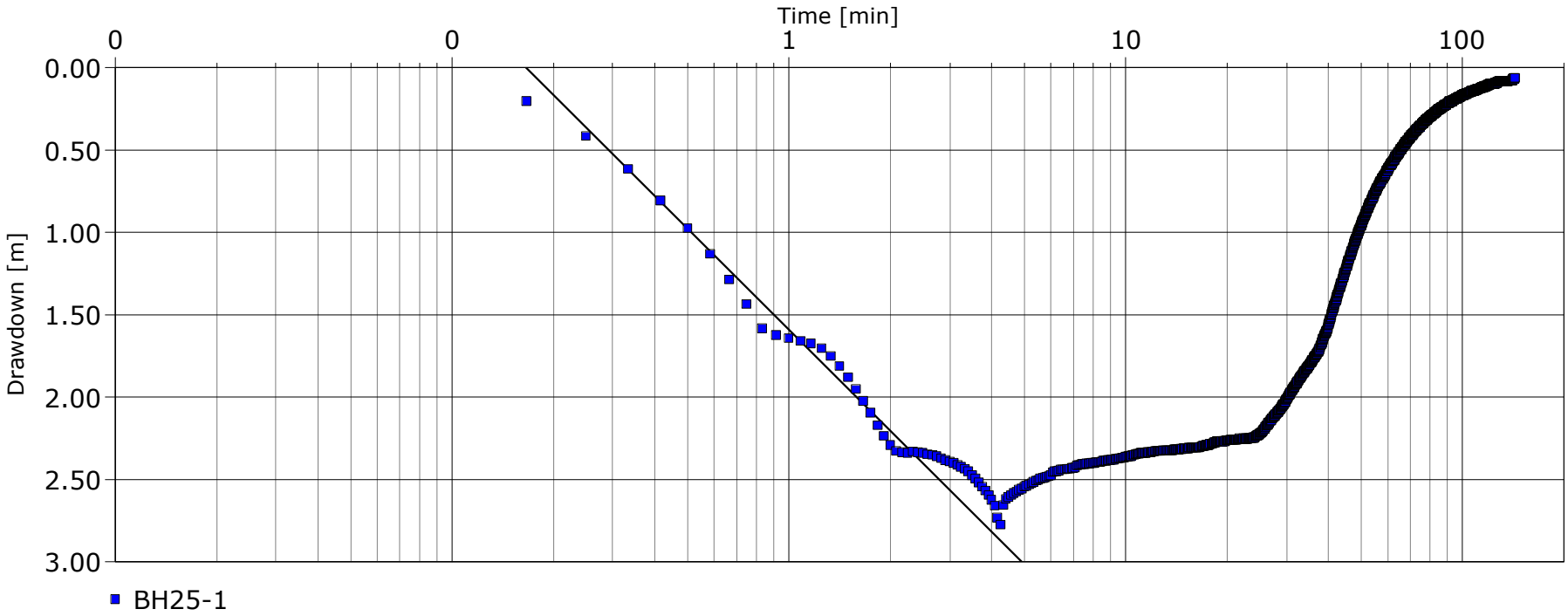
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-1	Pumping Well: BH25-1
Test Conducted by: DM		Test Date: 2025-12-17
Analysis Performed by: DM/DC/BK	BH25-1, Cooper-Jacob (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 3.81 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using COOPER & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Storage coefficient	Radial Distance to PW [m]	
BH25-1	3.88×10^{-1}	1.02×10^{-1}		0.03	

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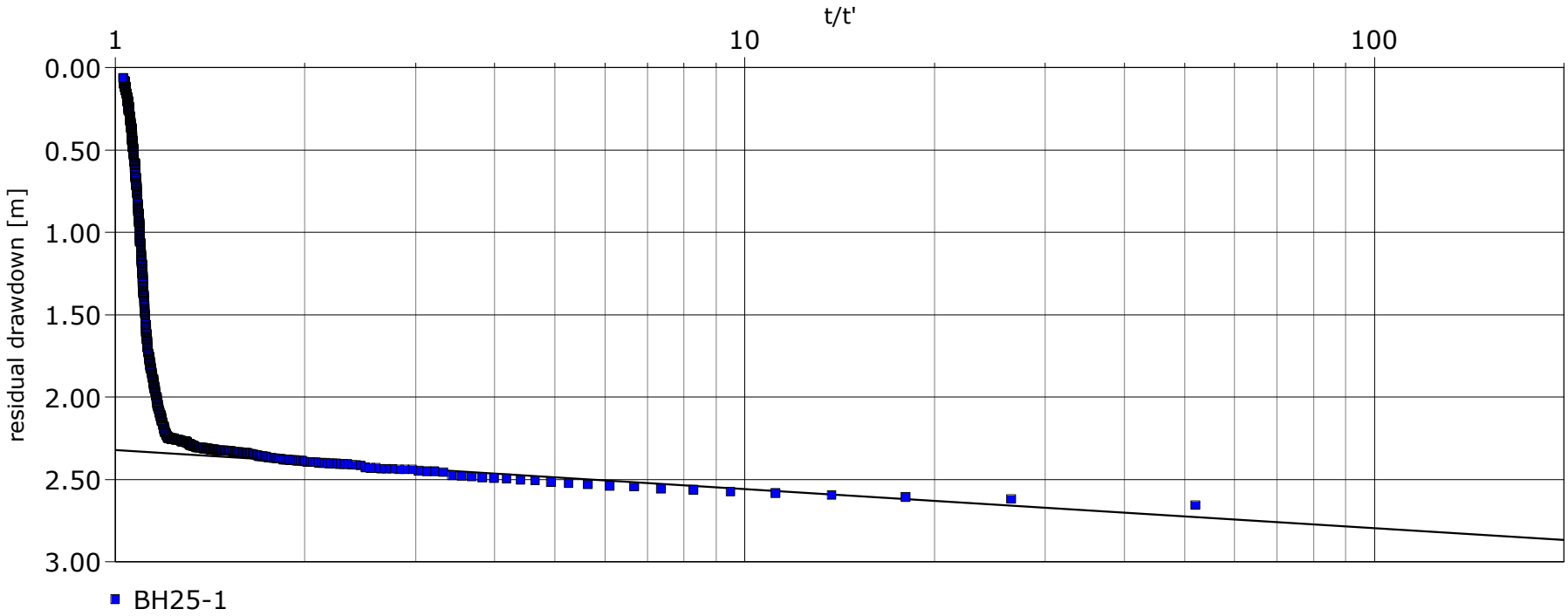
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-1	Pumping Well: BH25-1
Test Conducted by: DM		Test Date: 2025-12-17
Analysis Performed by: DM/DC/BK	BH25-1, Theis Recovery (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 3.81 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using THEIS & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Radial Distance to PW [m]
BH25-1	3.30×10^{0}	8.66×10^{-1}	0.03

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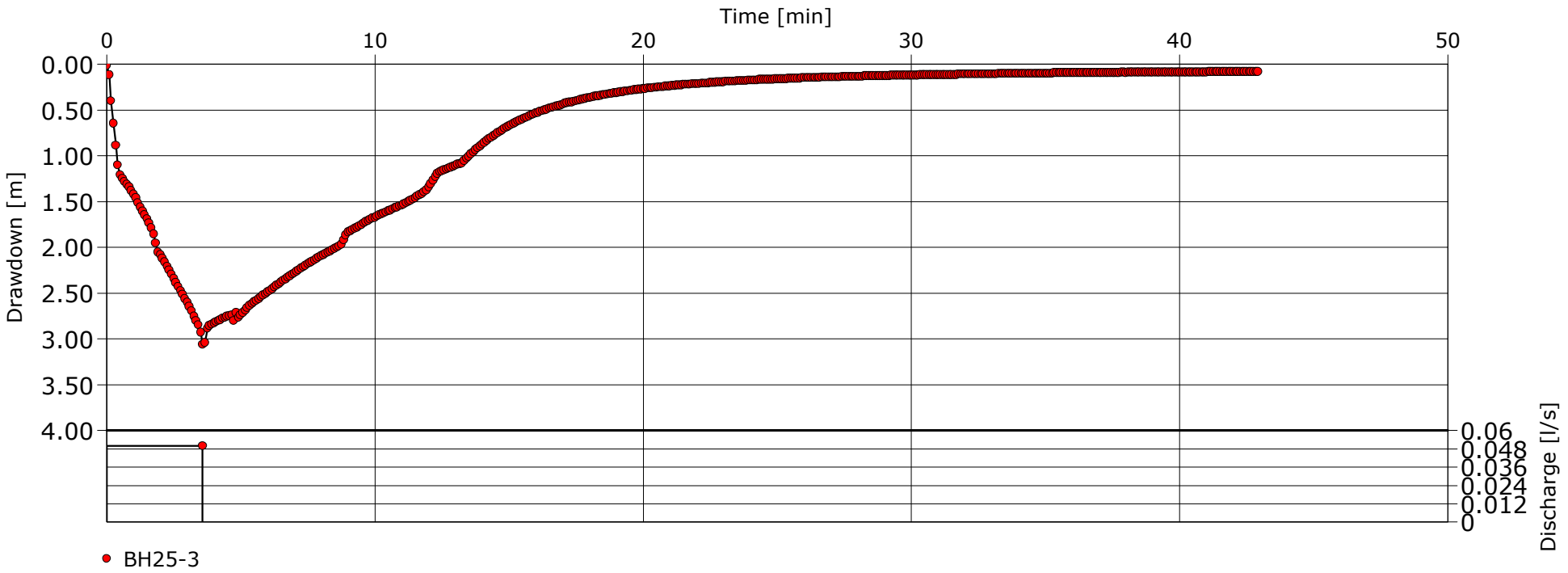
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-3	Pumping Well: BH25-3
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-3, Time-Drawdown (pumped well)	Analysis Date: 2026-01-16
Aquifer Thickness: 3.85 m	Discharge: variable, average rate 0.05 [l/s]	



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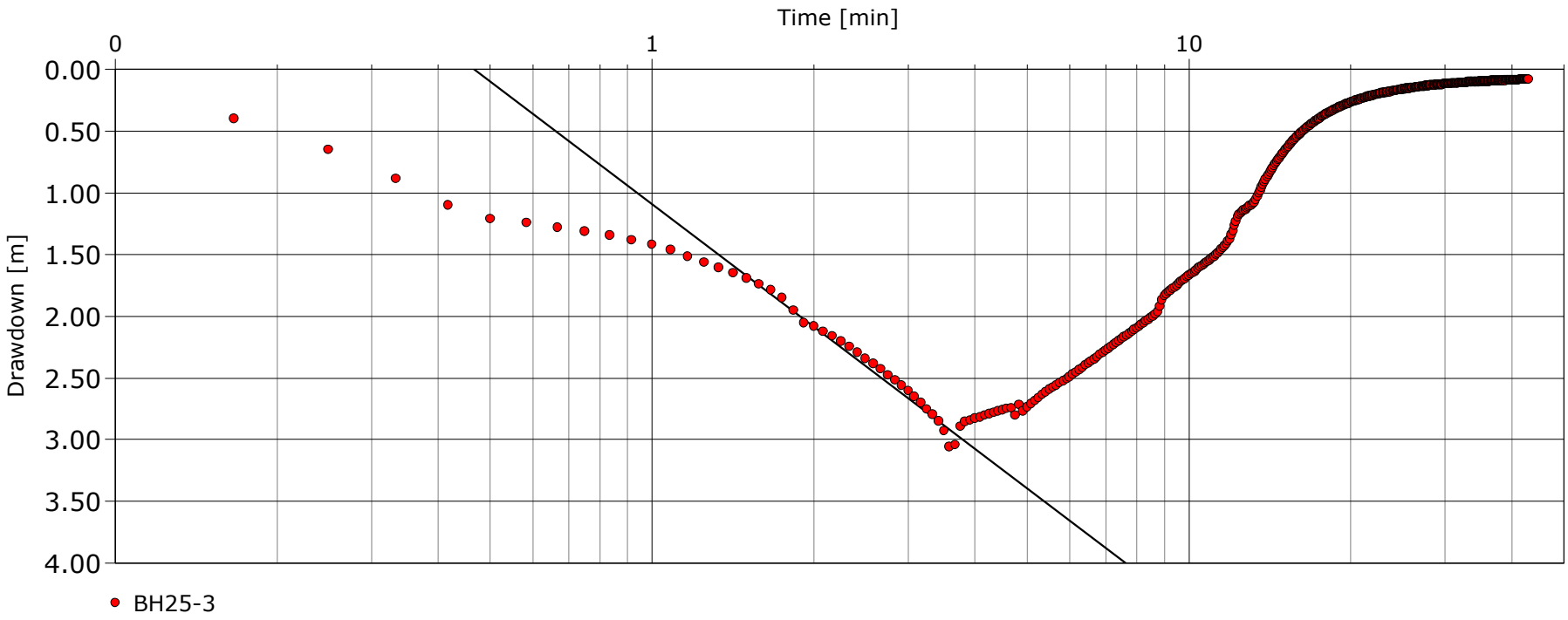
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-3	Pumping Well: BH25-3
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-3, Cooper-Jacob (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 3.85 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using COOPER & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Storage coefficient	Radial Distance to PW [m]	
BH25-3	2.40×10^{-1}	6.23×10^{-2}		0.03	

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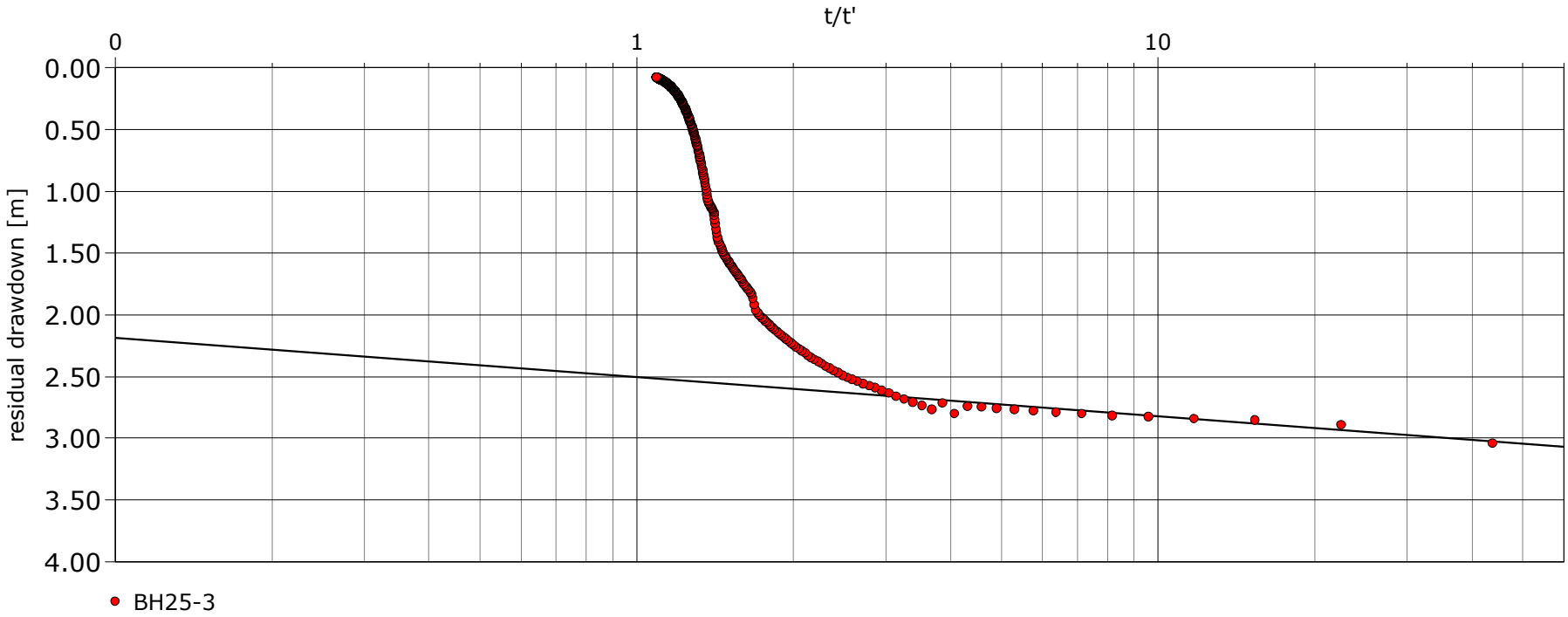
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-3	Pumping Well: BH25-3
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DC/DC/BK	BH25-3, Theis Recovery (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 3.85 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using THEIS & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Radial Distance to PW [m]
BH25-3	2.50×10^{0}	6.49×10^{-1}	0.03

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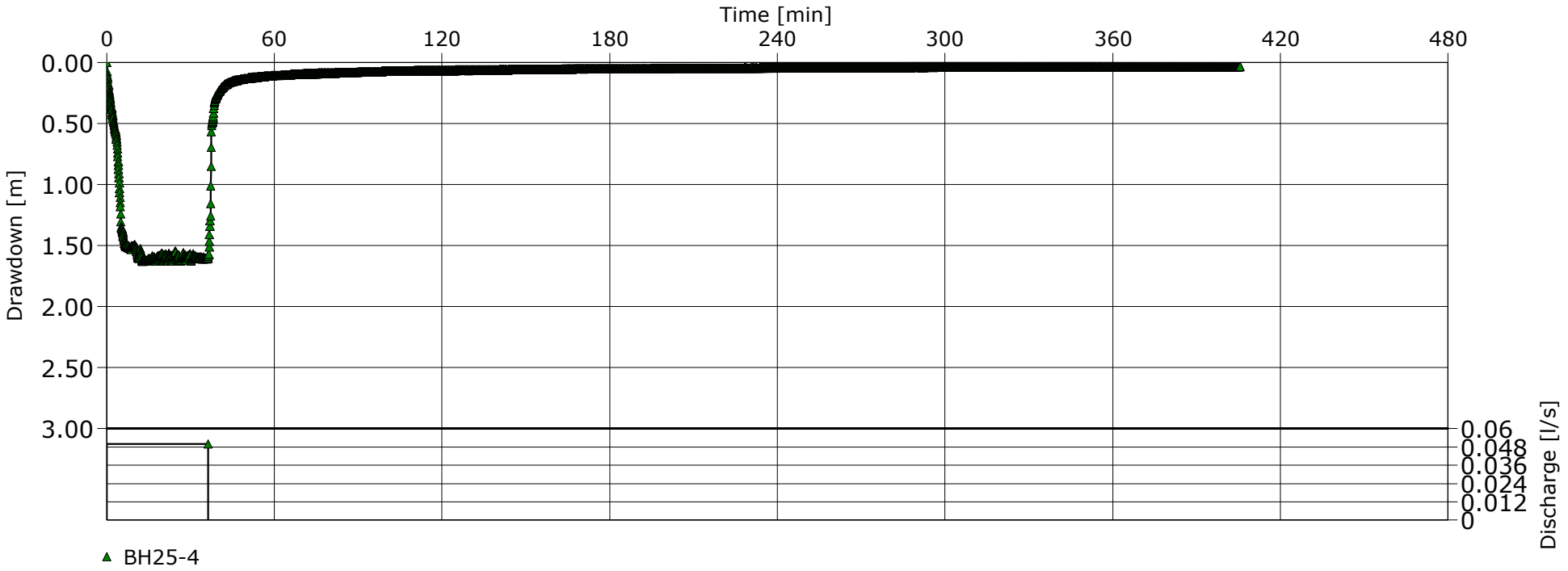
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-4	Pumping Well: BH25-4
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-4, Time-Drawdown (pumped well)	Analysis Date: 2026-01-16
Aquifer Thickness: 2.05 m	Discharge: variable, average rate 0.05 [l/s]	



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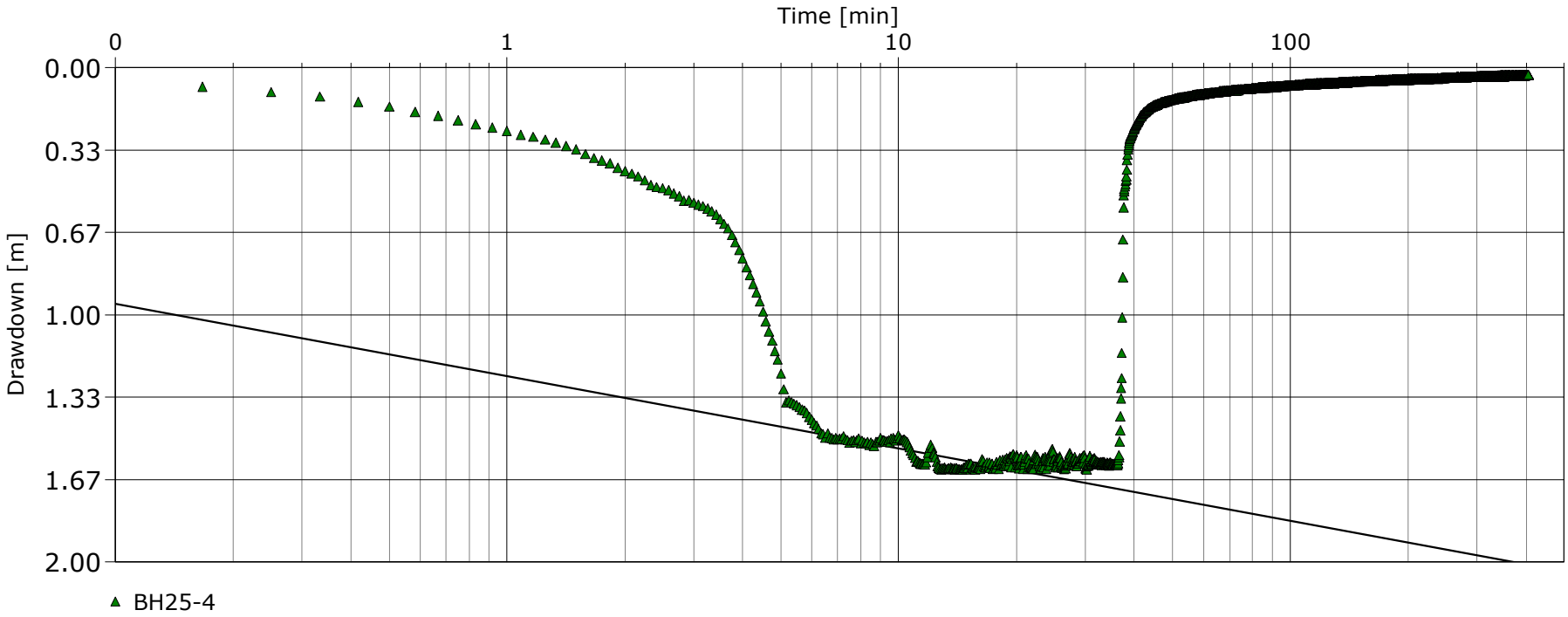
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-4	Pumping Well: BH25-4
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-4, Cooper-Jacob (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 3.05 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using COOPER & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Storage coefficient	Radial Distance to PW [m]	
BH25-4	2.70×10^{0}	8.85×10^{-1}		0.03	

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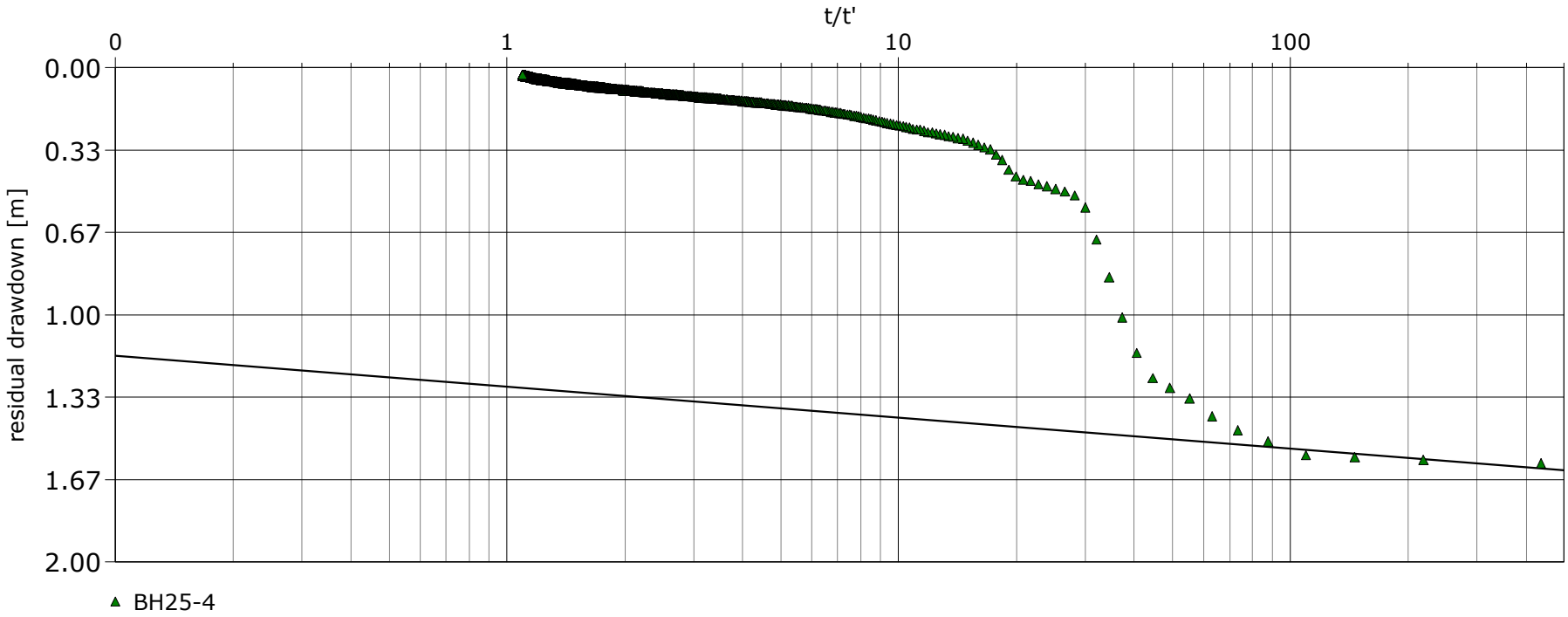
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-4	Pumping Well: BH25-4
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-4, Theis Recovery (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 3.05 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using THEIS & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Radial Distance to PW [m]
BH25-4	6.30×10^{0}	2.07×10^{0}	0.03

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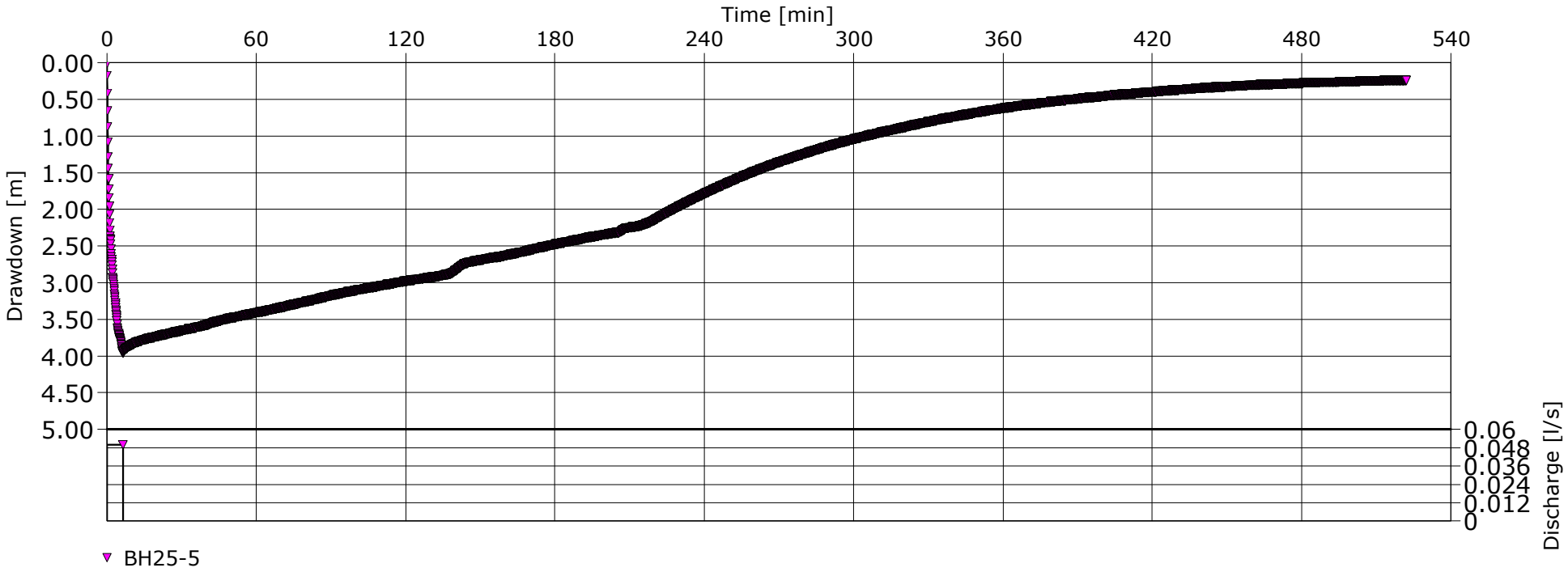
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-5	Pumping Well: BH25-5
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-5, Time-Drawdown (pumped well)	Analysis Date: 2026-01-16
Aquifer Thickness: 5.15 m	Discharge: variable, average rate 0.05 [l/s]	



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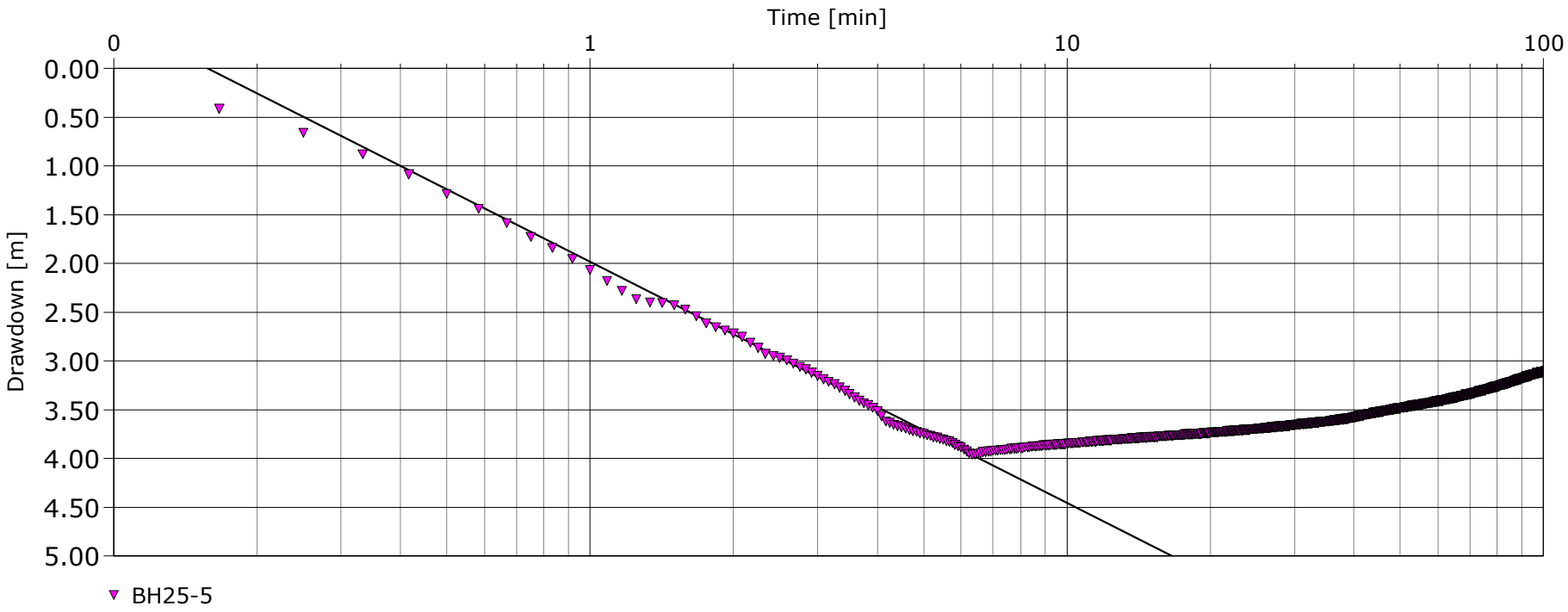
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-5	Pumping Well: BH25-5
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-5, Cooper-Jacob (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 5.15 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using COOPER & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Storage coefficient	Radial Distance to PW [m]	
BH25-5	3.20×10^{-1}	6.21×10^{-2}		0.03	

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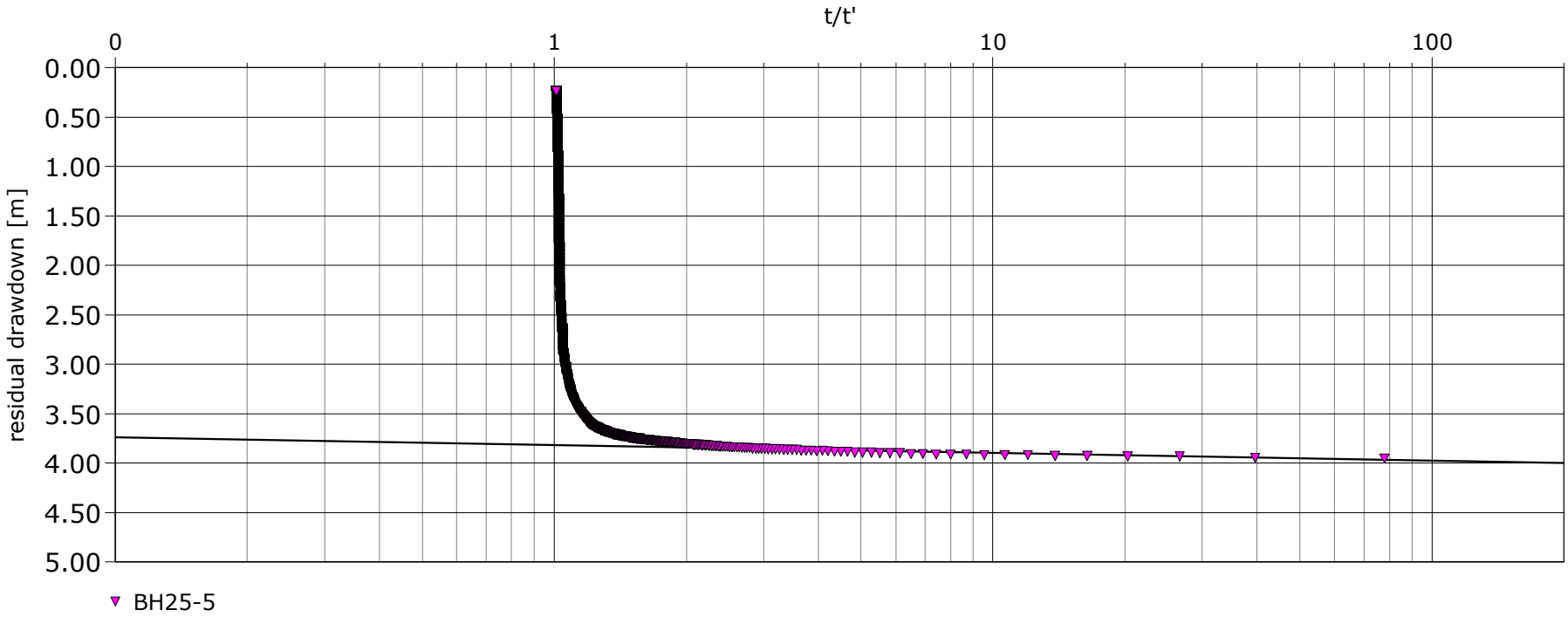
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-5	Pumping Well: BH25-5
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM?DC/BK	BH25-5, Theis Recovery (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 5.15 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using THEIS & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Radial Distance to PW [m]
BH25-5	1.00×10^{1}	1.94×10^{0}	0.03

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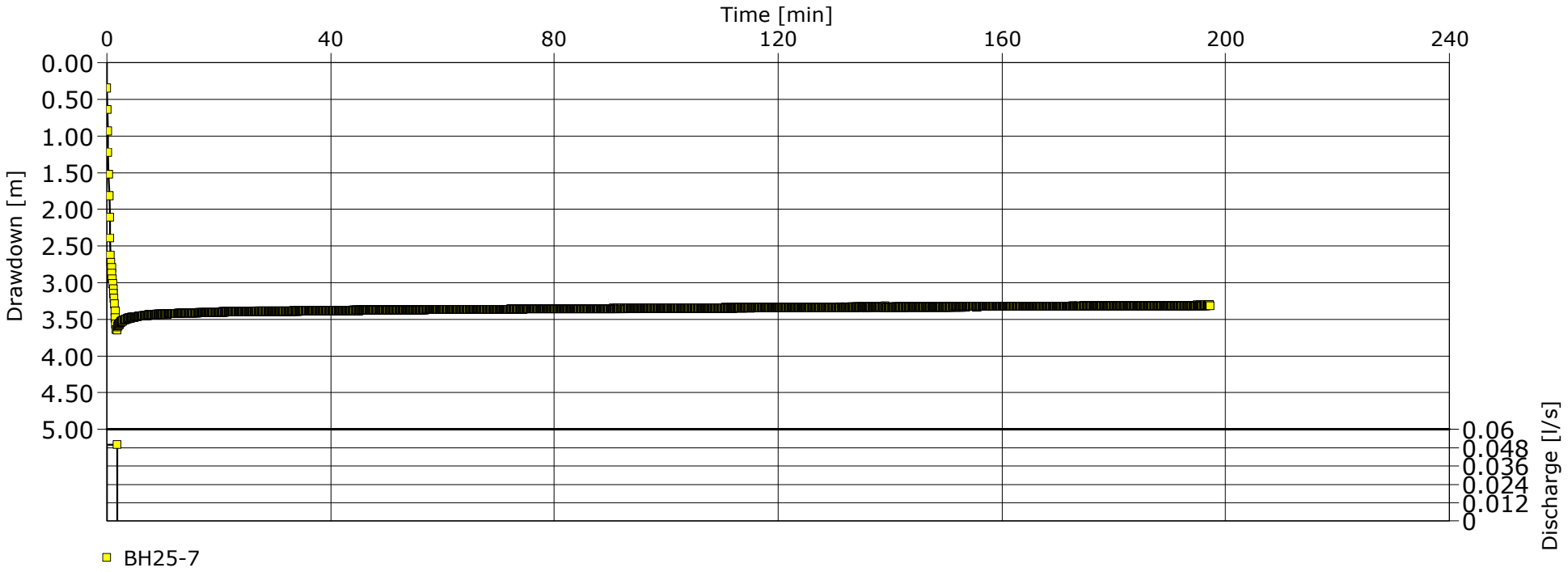
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-7	Pumping Well: BH25-7
Test Conducted by: DC		Test Date: 2025-12-17
Analysis Performed by: DM/DC/BK	BH25-7, Time-Drawdown (pumped well)	Analysis Date: 2026-01-16
Aquifer Thickness: 3.97 m	Discharge: variable, average rate 0.05 [l/s]	



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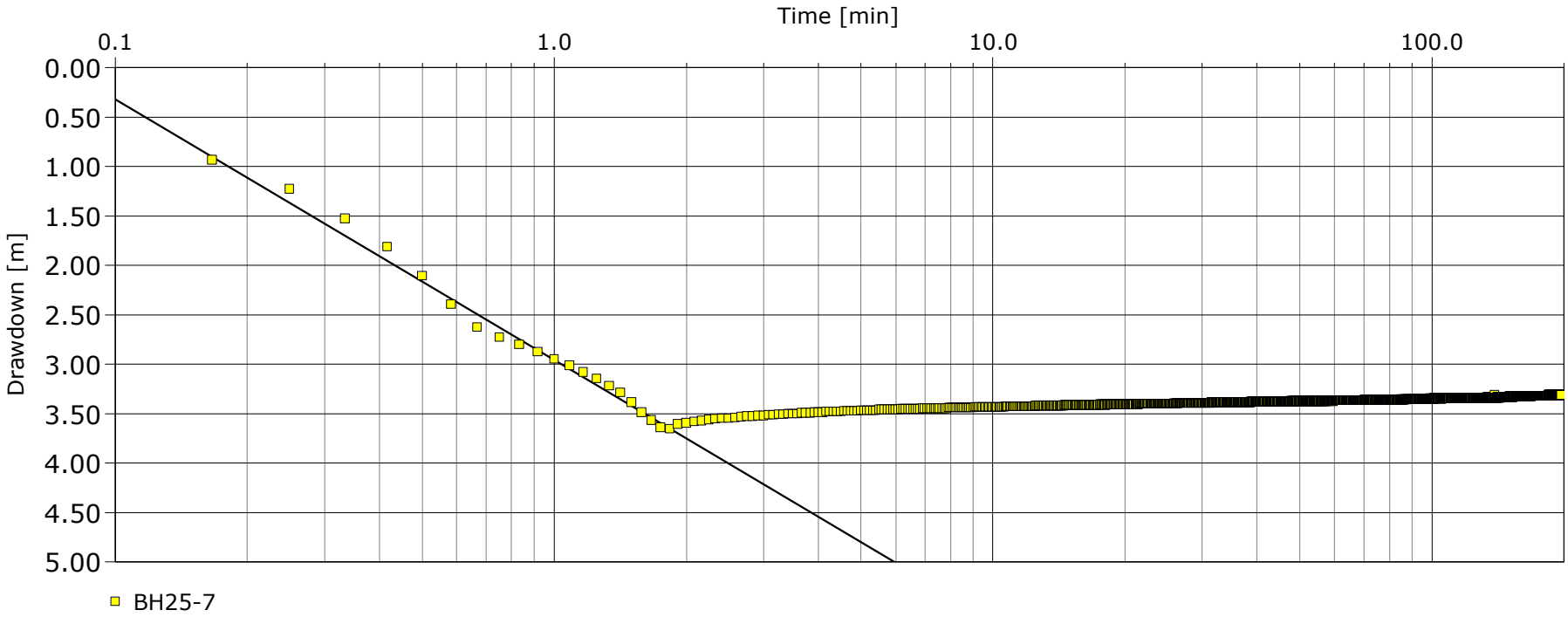
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-7	Pumping Well: BH25-7
Test Conducted by: DC		Test Date: 2025-12-17
Analysis Performed by: DM/DC/BK	BH25-7, Cooper-Jacob (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 3.97 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using COOPER & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Storage coefficient	Radial Distance to PW [m]	
BH25-7	3.00×10^{-1}	7.56×10^{-2}		0.03	

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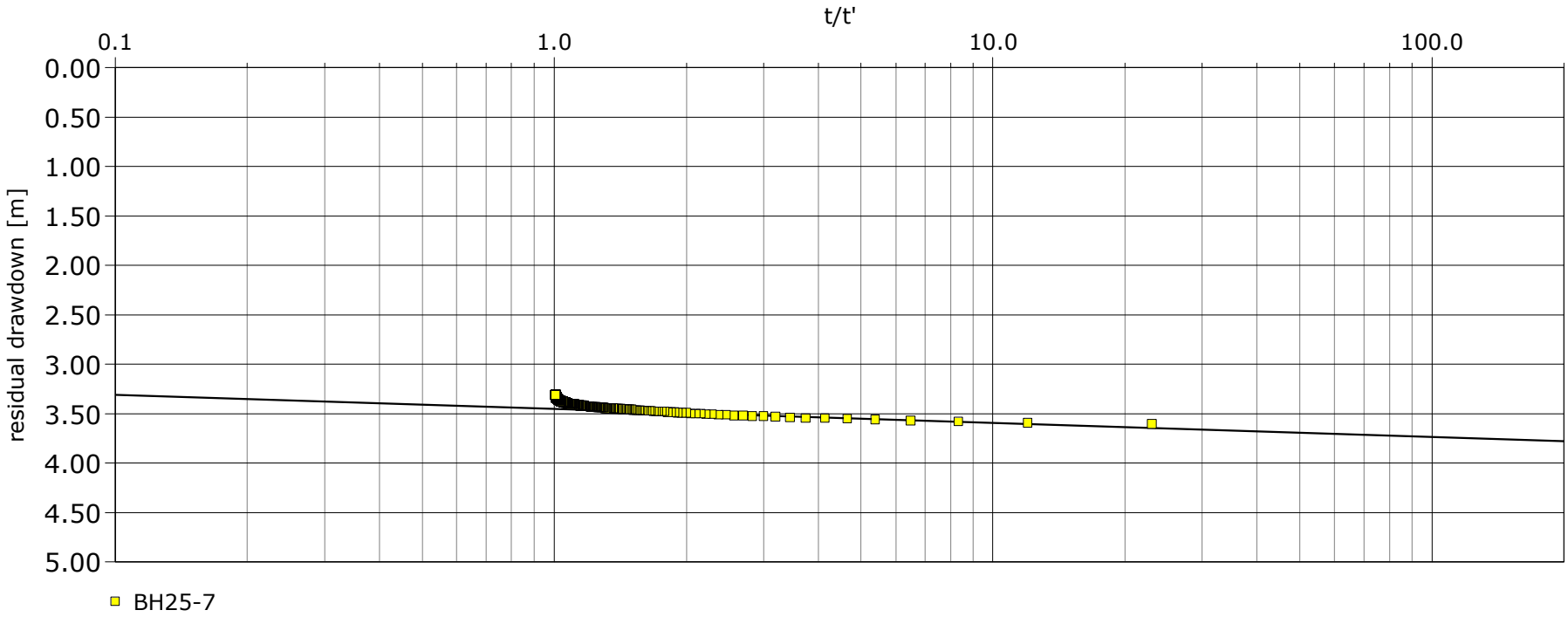
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-7	Pumping Well: BH25-7
Test Conducted by: DC		Test Date: 2025-12-17
Analysis Performed by: DM/DC/BK	BH25-7, Theis Recovery (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 3.97 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using THEIS & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Radial Distance to PW [m]
BH25-7	5.50×10^{0}	1.39×10^{0}	0.03

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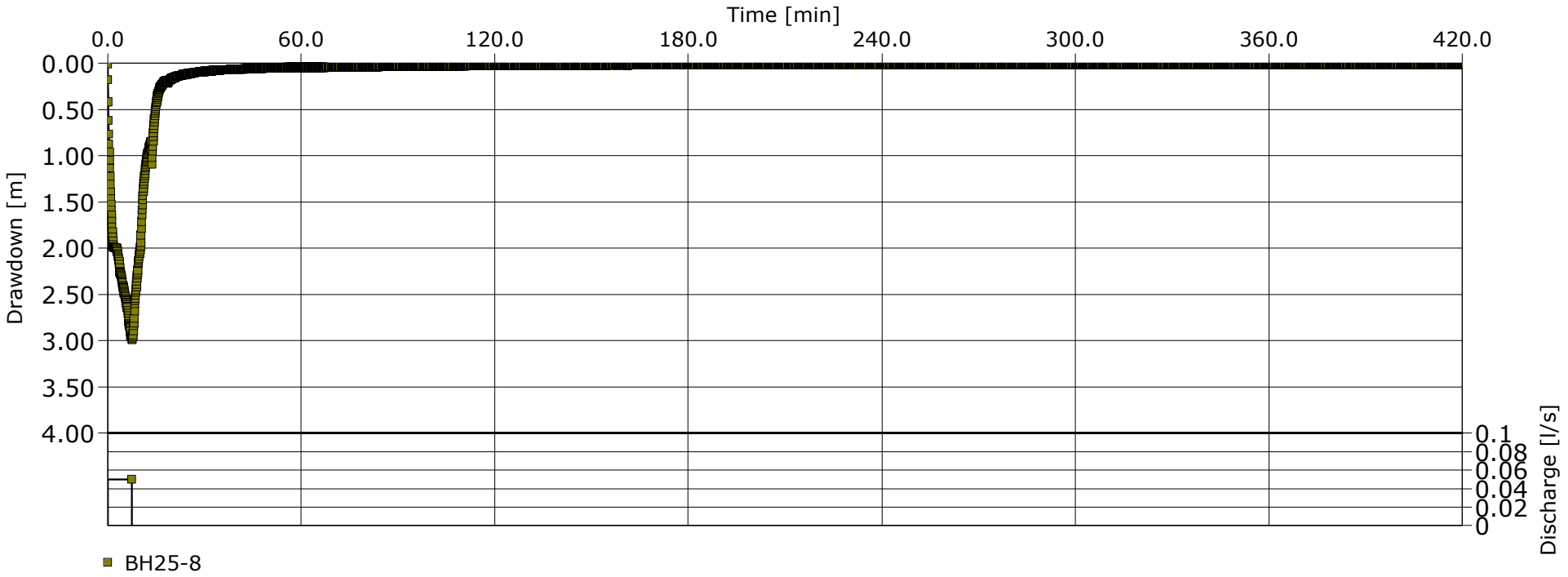
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-8	Pumping Well: BH25-8
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-8, Time-Drawdown (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 4.97 m	Discharge: variable, average rate 0.05 [l/s]	



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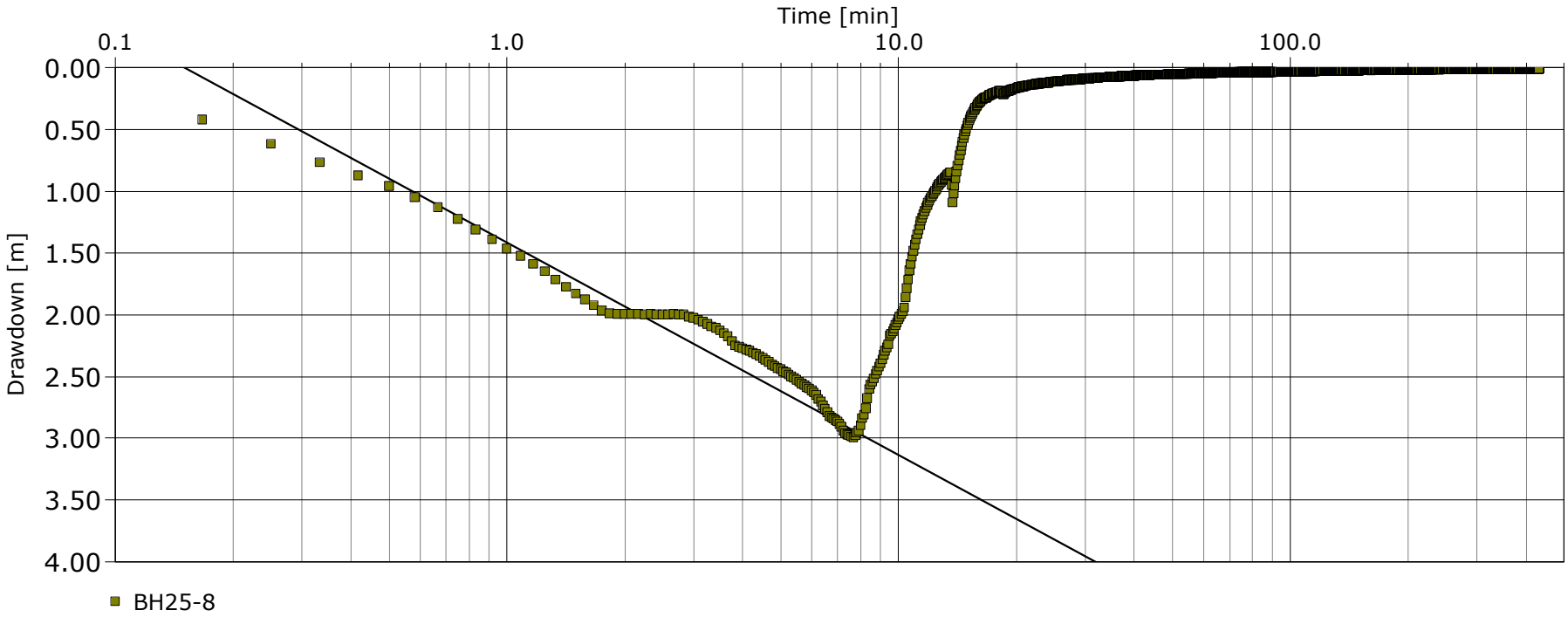
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-8	Pumping Well: BH25-8
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-8, Cooper-Jacob (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 4.97 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using COOPER & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Storage coefficient	Radial Distance to PW [m]	
BH25-8	4.60×10^{-1}	9.26×10^{-2}		0.03	

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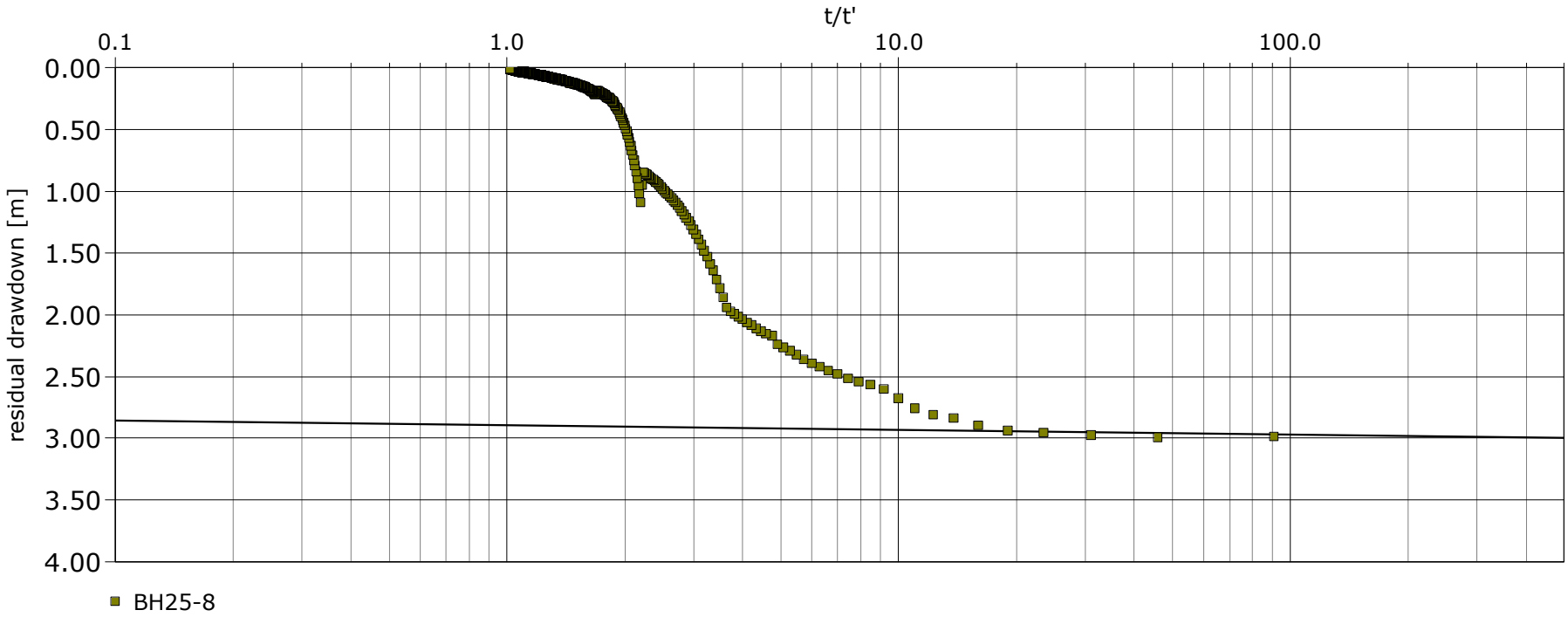
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: BH25-8	Pumping Well: BH25-8
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/DC/BK	BH25-8, Theis Recovery (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 4.97 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using THEIS & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Radial Distance to PW [m]
BH25-8	2.00×10^{1}	4.02×10^{0}	0.03

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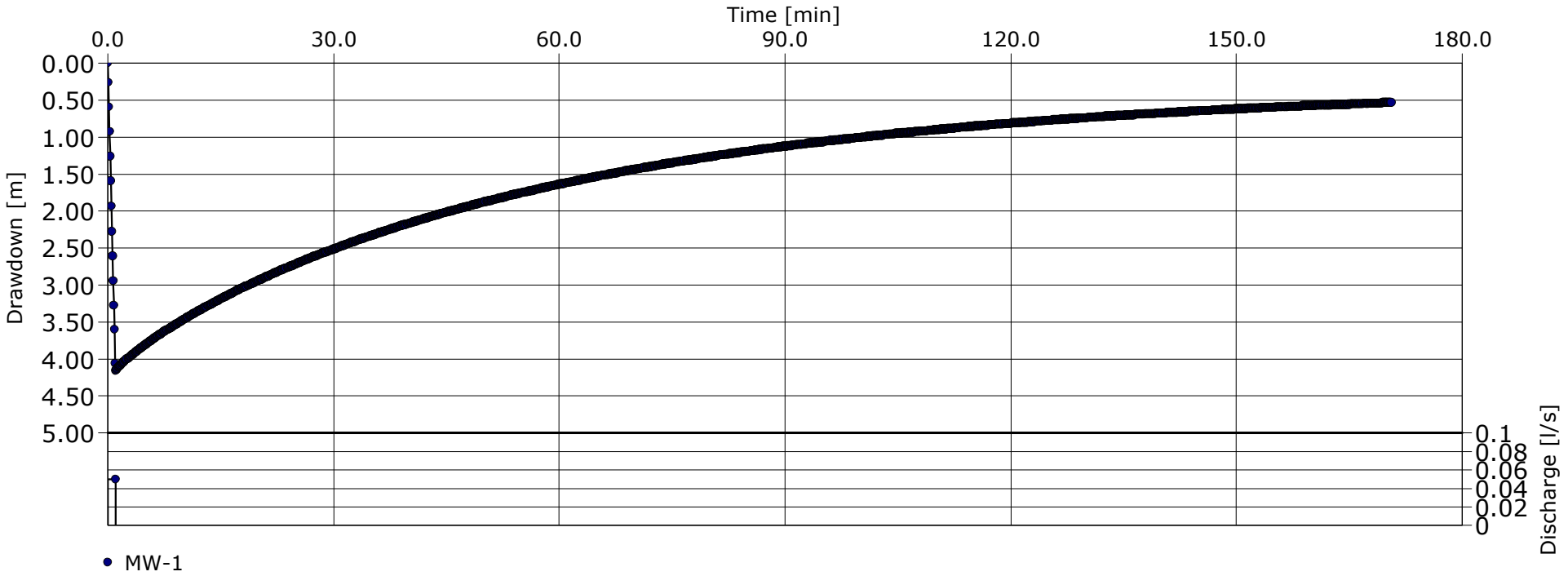
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: MW-1	Pumping Well: MW-1
Test Conducted by: DC		Test Date: 2025-12-17
Analysis Performed by: DM/DC/BK	W-1, Time-Drawdown (pumped well)	Analysis Date: 2026-01-16
Aquifer Thickness: 7.58 m	Discharge: variable, average rate 0.05 [l/s]	



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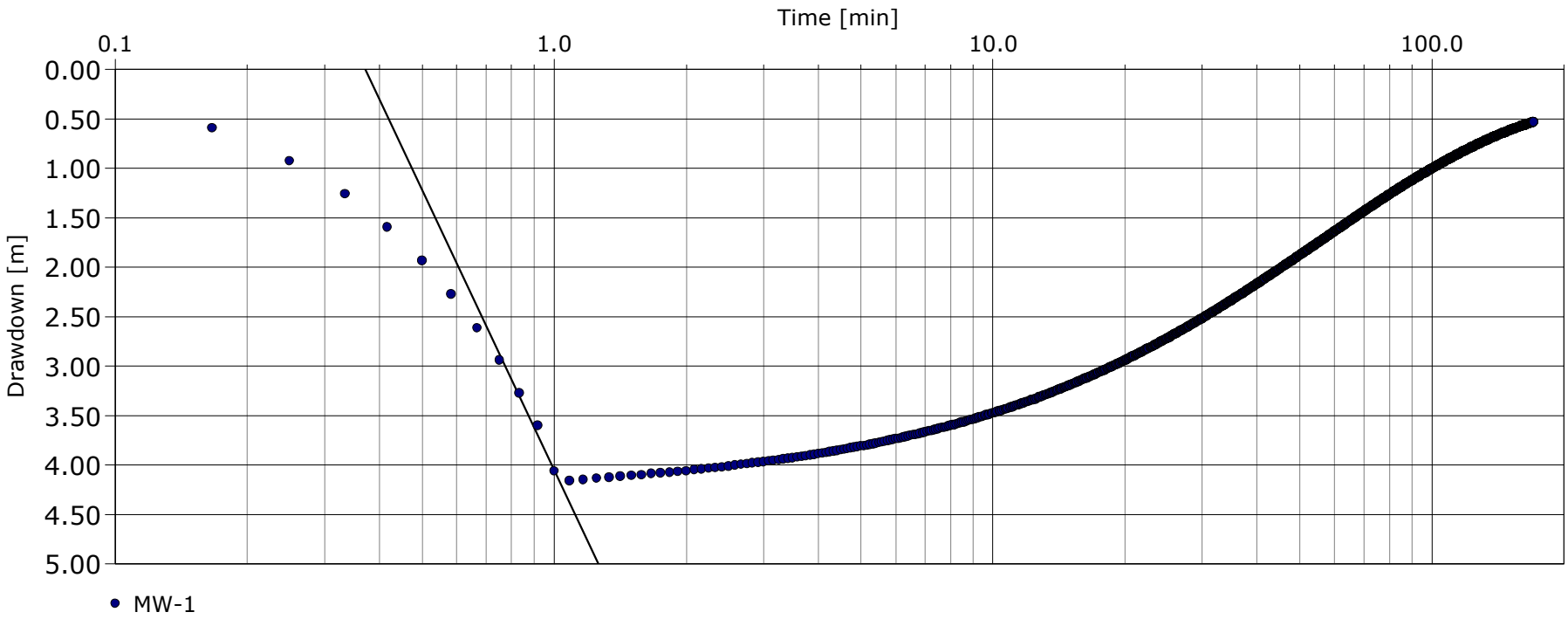
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: MW-1	Pumping Well: MW-1
Test Conducted by: DC		Test Date: 2025-12-17
Analysis Performed by: DM/DC/BK	W-1, Cooper-Jacob (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 7.58 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using COOPER & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Storage coefficient	Radial Distance to PW [m]	
MW-1	8.40×10^{-2}	1.11×10^{-2}		0.03	

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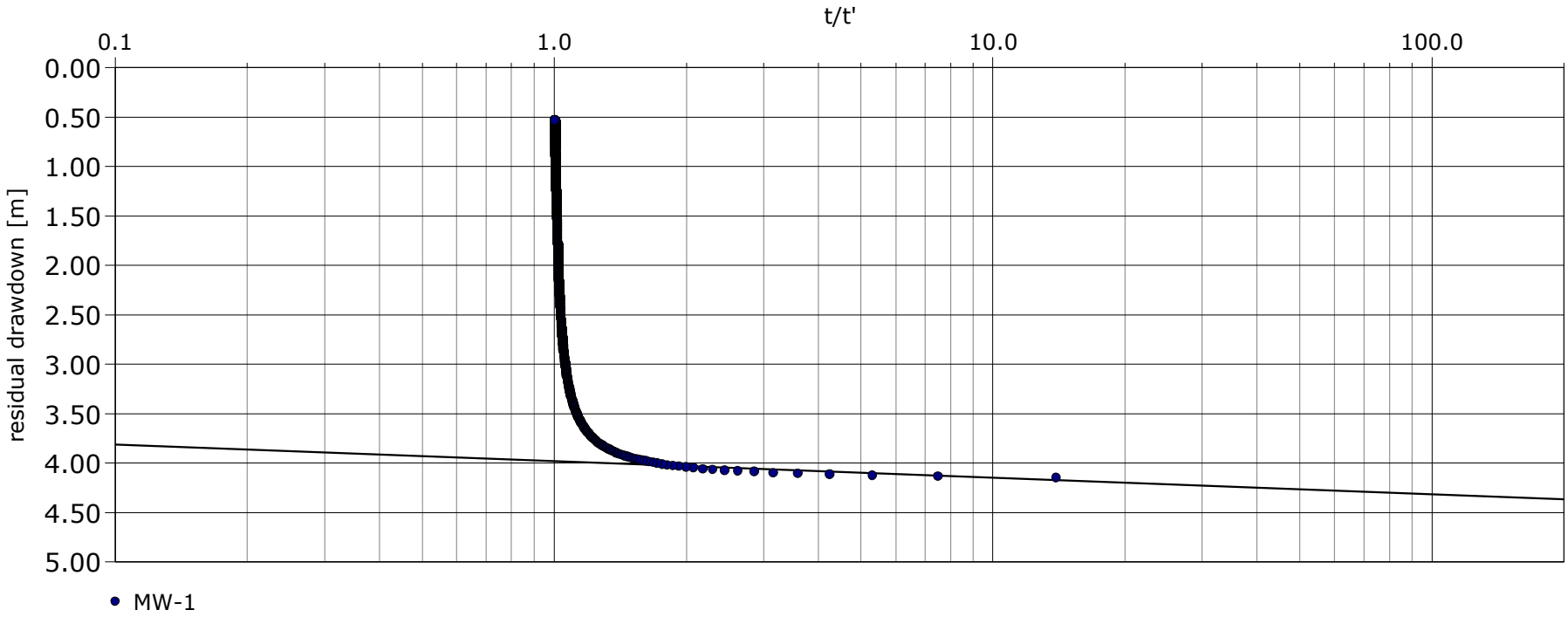
Pumping Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Pumping Test: MW-1	Pumping Well: MW-1
Test Conducted by: DC		Test Date: 2025-12-17
Analysis Performed by: DM/DC/BK	W-1, Theis Recovery (pumped well)	Analysis Date: 2026-01-19
Aquifer Thickness: 7.58 m	Discharge: variable, average rate 0.05 [l/s]	



Calculation using THEIS & JACOB

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Radial Distance to PW [m]
MW-1	4.70×10^{0}	6.20×10^{-1}	0.03

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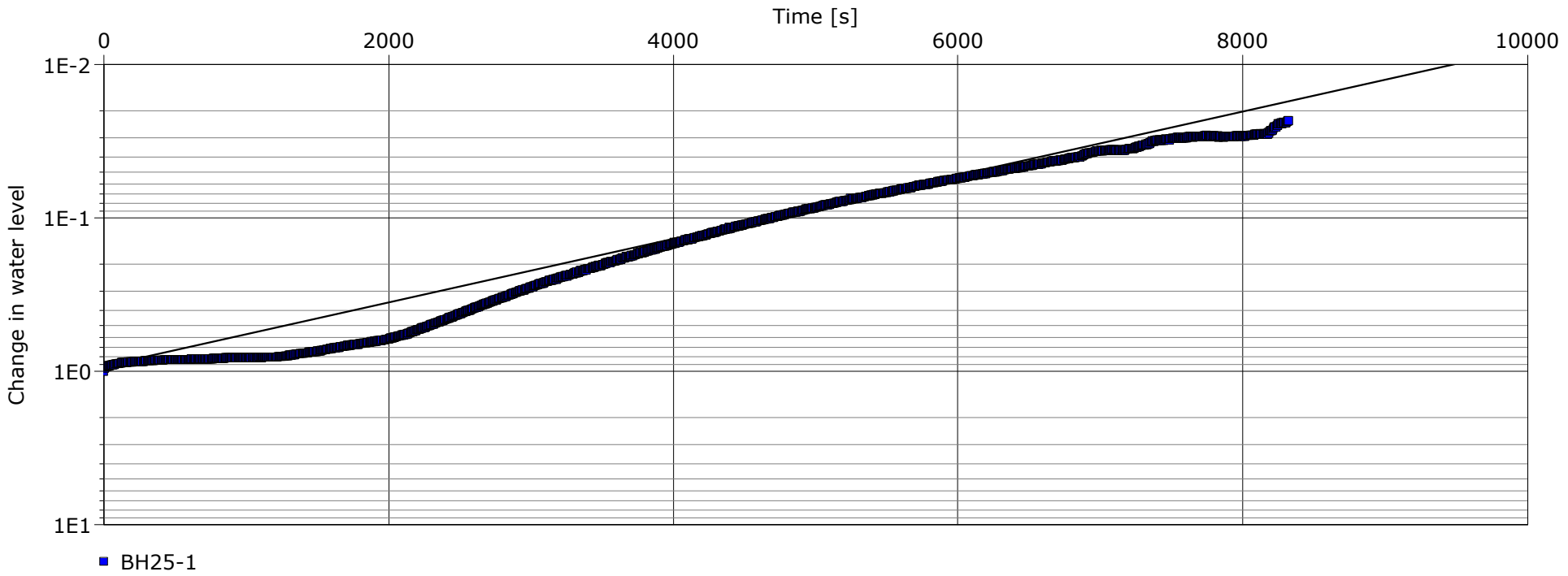
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-1	Test Well: BH25-1
Test Conducted by: DM		Test Date: 2025-12-17
Analysis Performed by: DM/BK	Hvorslev Method	Analysis Date: 2026-01-15
Aquifer Thickness: 3.81 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]
BH25-1	2.10×10^{-2}

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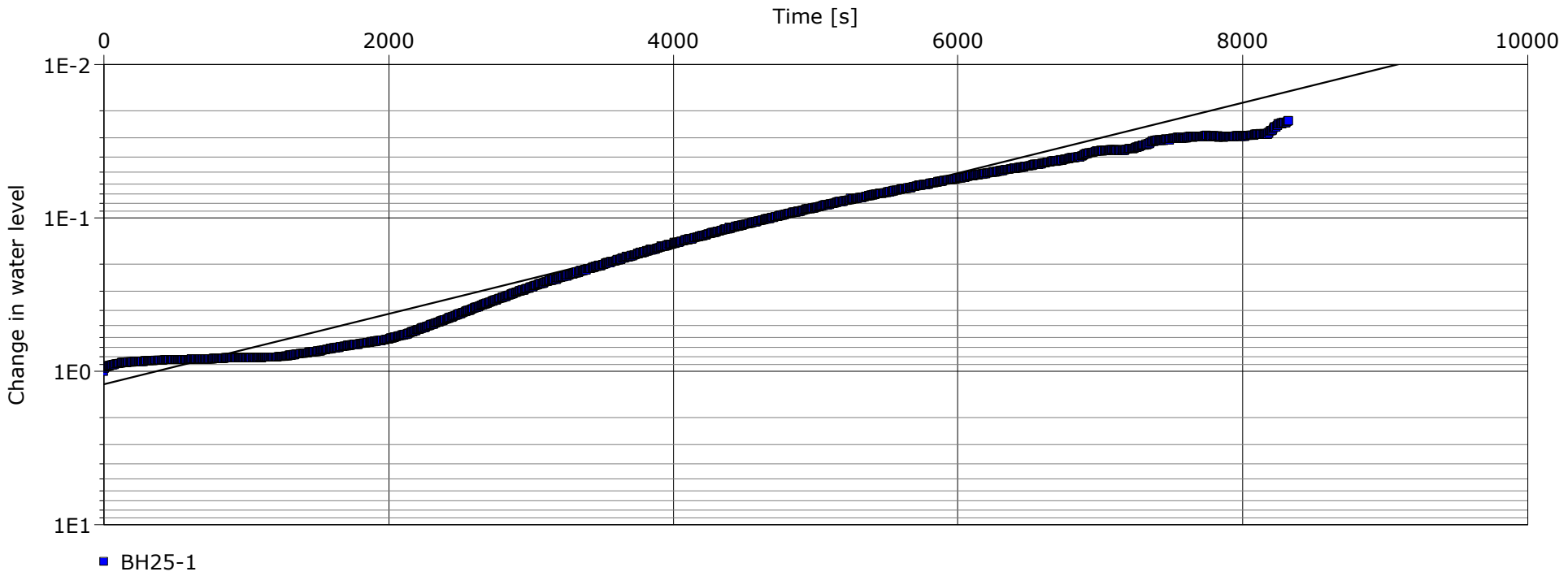
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-1	Test Well: BH25-1
Test Conducted by: DM		Test Date: 2025-12-17
Analysis Performed by: DM/BK	Bouwer & Rice Method	Analysis Date: 2026-01-16
Aquifer Thickness: 3.81 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]
BH25-1	1.80×10^{-2}

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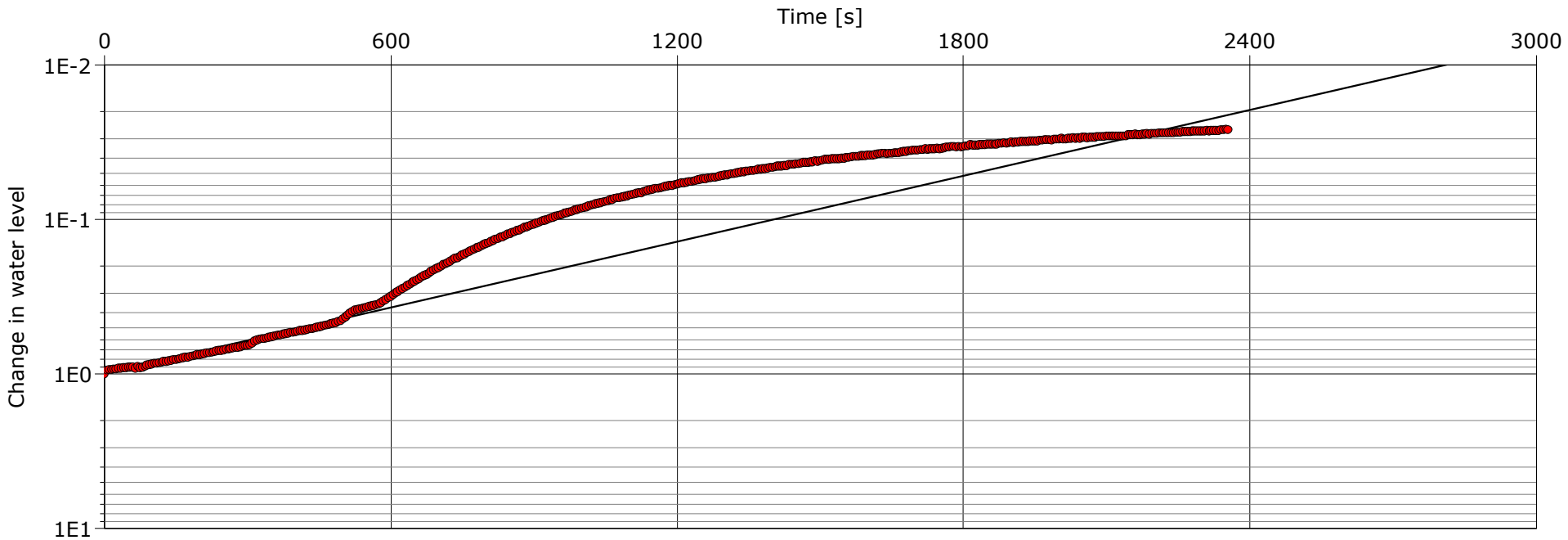
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-3	Test Well: BH25-3
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM	Hvorslev Method	Analysis Date: 2026-01-16
Aquifer Thickness: 3.85 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]
BH25-3	7.20×10^{-2}

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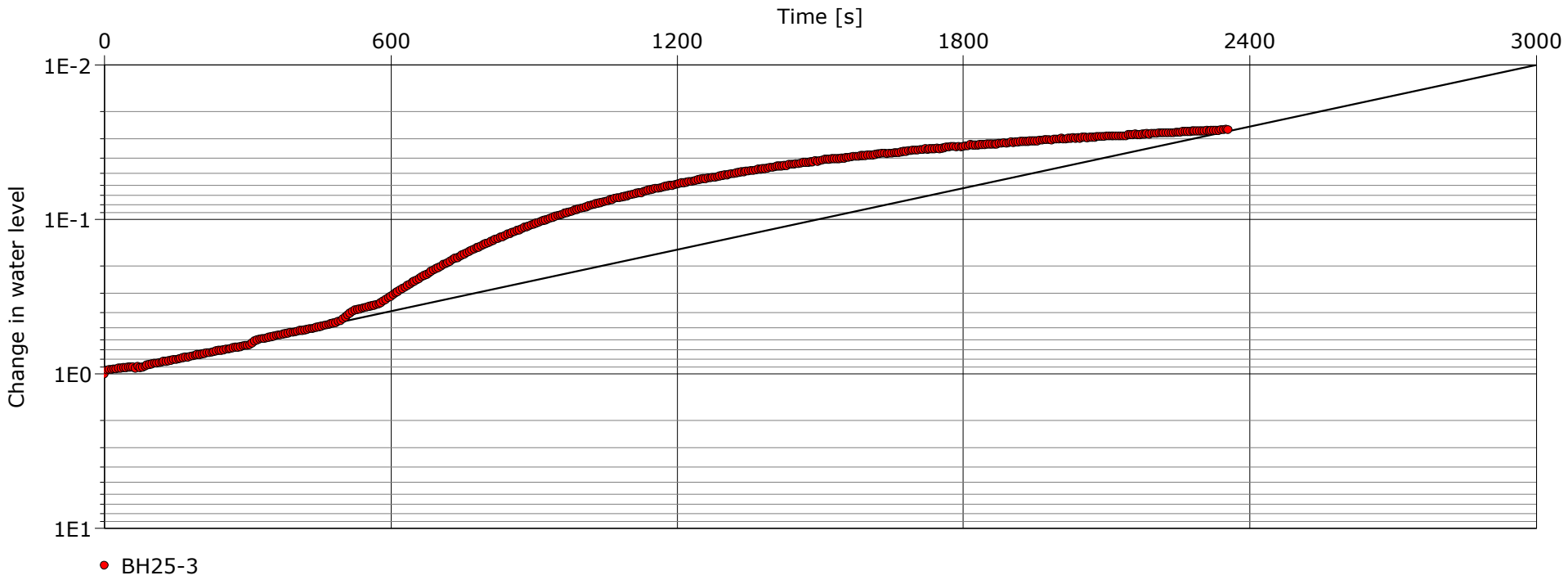
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-3	Test Well: BH25-3
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/BK	Bouwer & Rice Method	Analysis Date: 2026-01-16
Aquifer Thickness: 3.85 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]
BH25-3	5.20×10^{-2}

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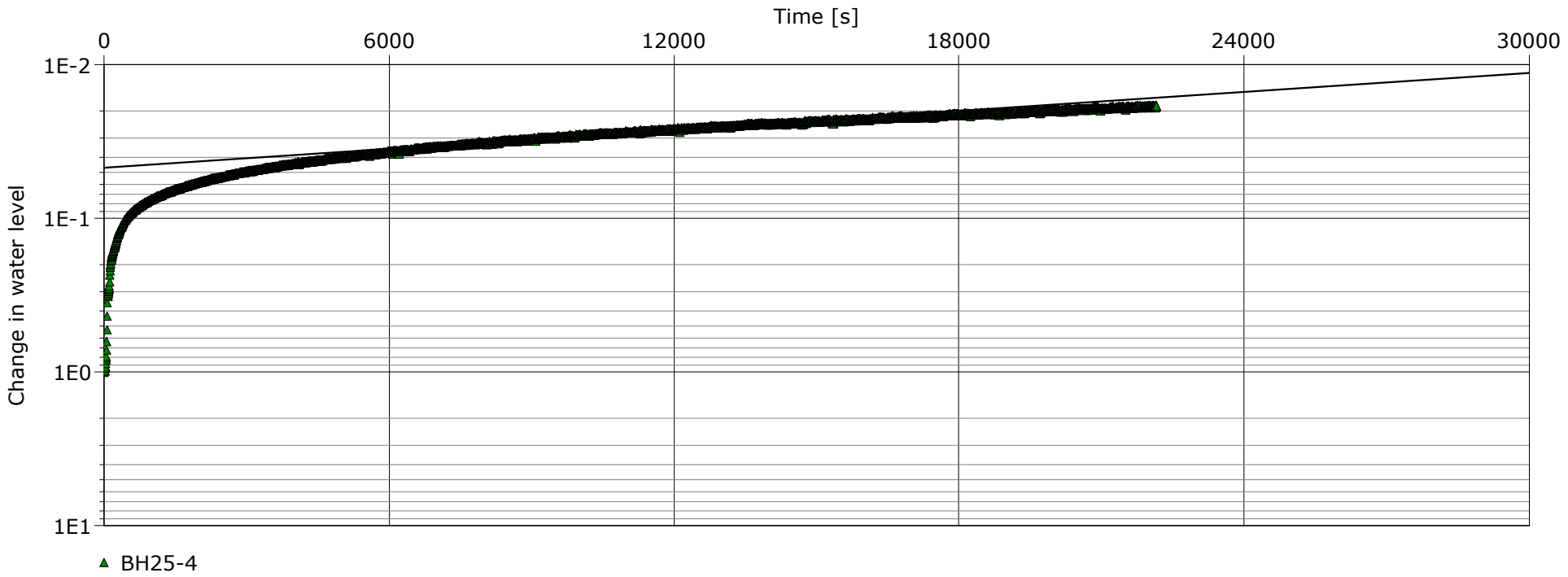
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-4	Test Well: BH25-4
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM	Hvorslev Method	Analysis Date: 2026-01-16
Aquifer Thickness: 3.05 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]
BH25-4	2.10×10^{-3}

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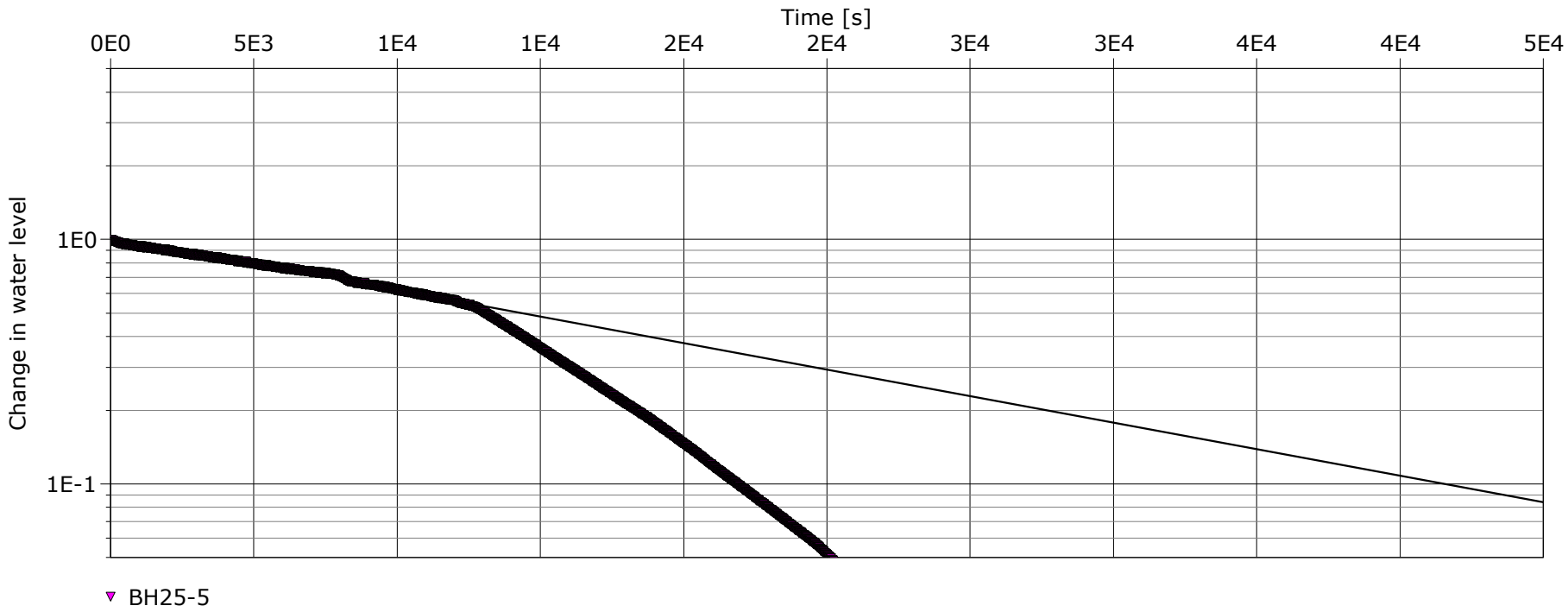
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-5	Test Well: BH25-5
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/BK	Hvorslev Method	Analysis Date: 2026-01-16
Aquifer Thickness: 5.15 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]
BH25-5	2.20×10^{-3}

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Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-5	Test Well: BH25-5
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/BK	Bouwer & Rice Method	Analysis Date: 2026-01-16
Aquifer Thickness: 5.15 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]
BH25-5	6.30×10^{-3}

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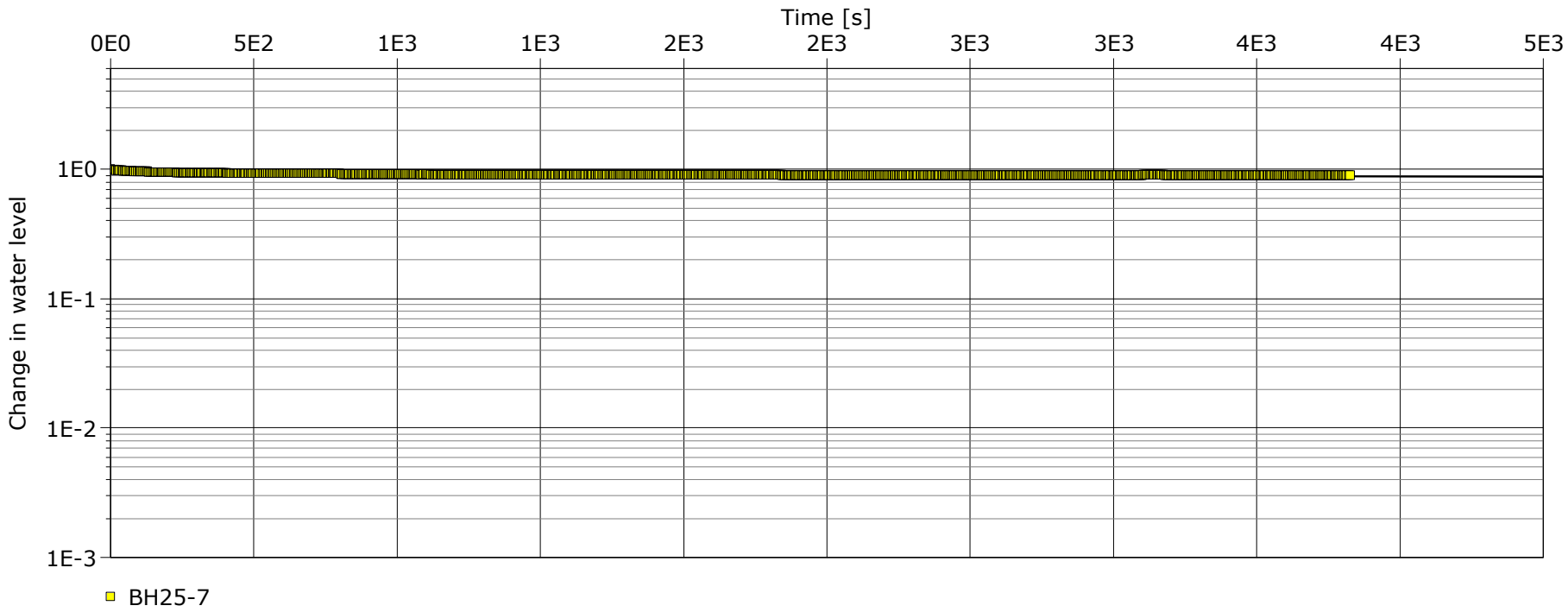
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-7 Test #1	Test Well: BH25-7
Test Conducted by: DC		Test Date: 2025-12-08
Analysis Performed by: DM/BK	Hvorslev Method	Analysis Date: 2026-01-16
Aquifer Thickness: 3.97 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]
BH25-7	5.10×10^{-4}

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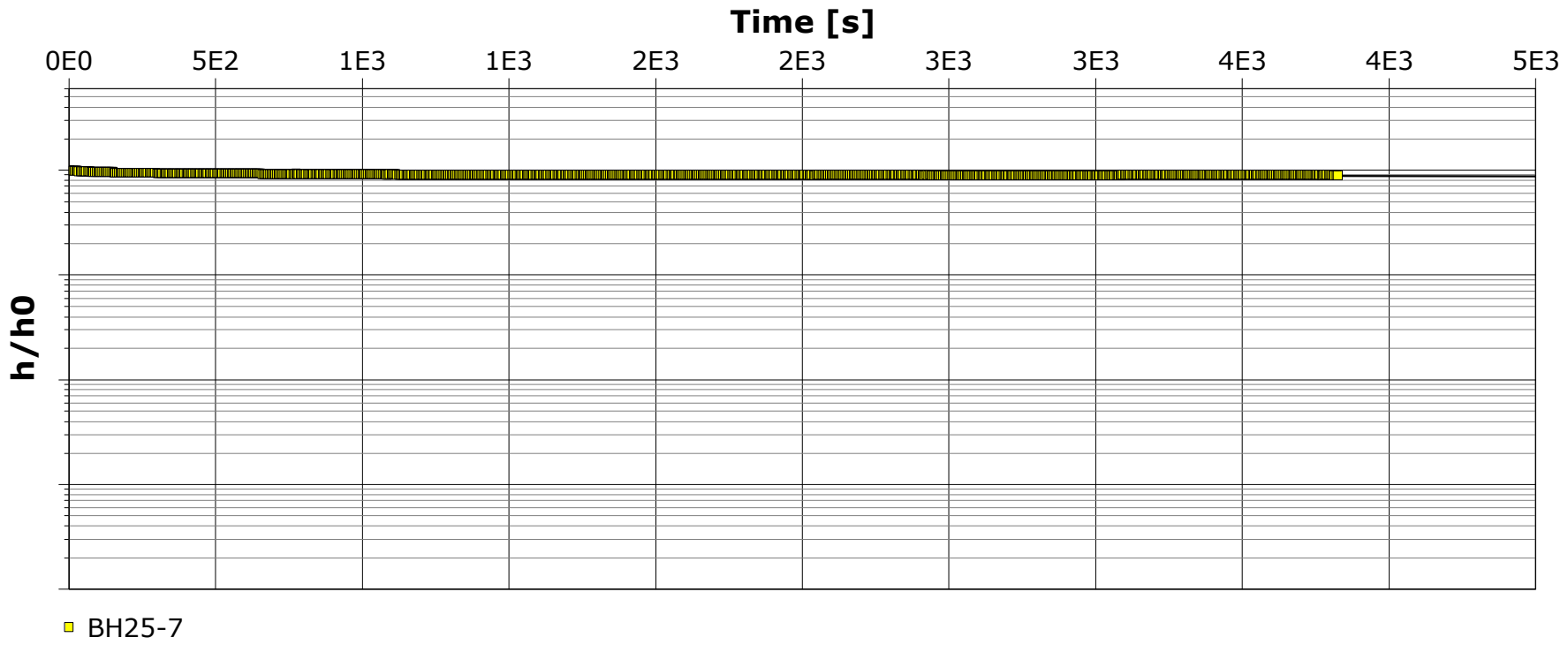
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-7 Test #1	Test Well: BH25-7
Test Conducted by: DC		Test Date: 2025-12-08
Analysis Performed by: DM	Bouwer & Rice Method	Analysis Date: 2026-01-16
Aquifer Thickness: 3.97 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]
BH25-7	3.90×10^{-4}

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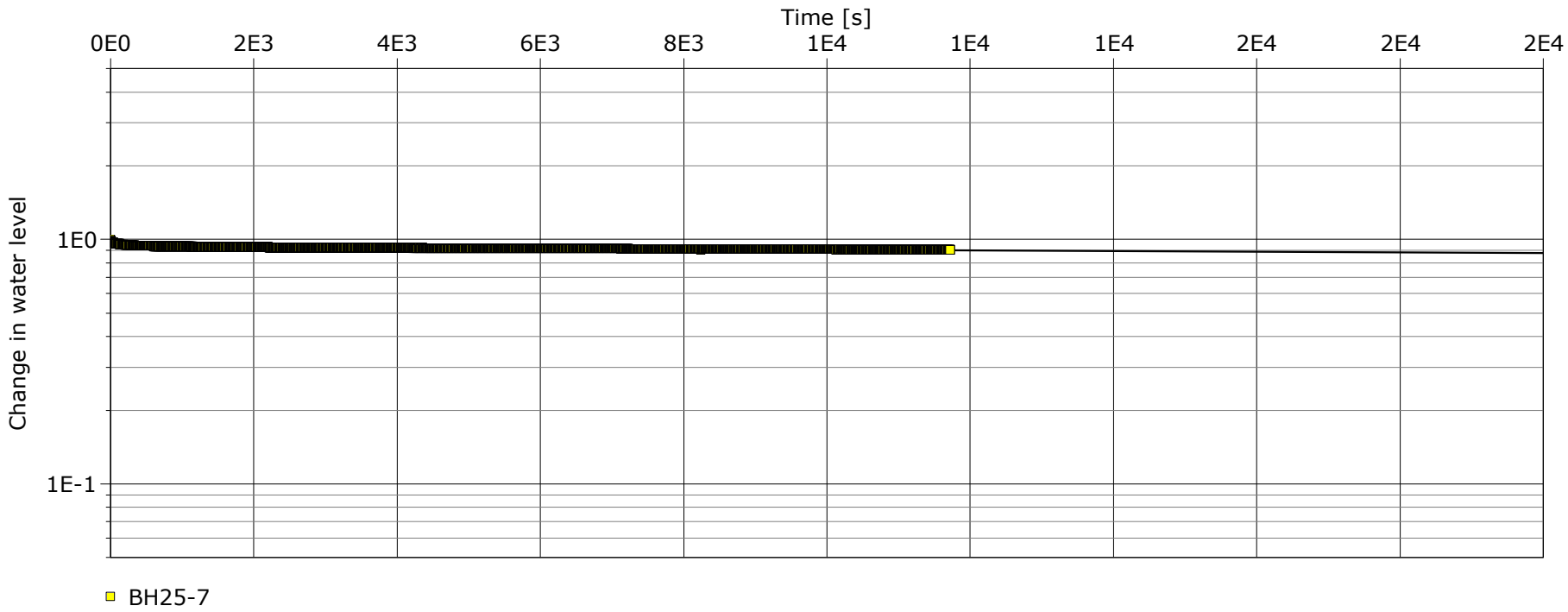
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-7 Test #2	Test Well: BH25-7
Test Conducted by: DC		Test Date: 2025-12-17
Analysis Performed by: DM/BK	Hvorslev Method	Analysis Date: 2026-01-16
Aquifer Thickness: 3.97 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]
BH25-7	1.30×10^{-4}

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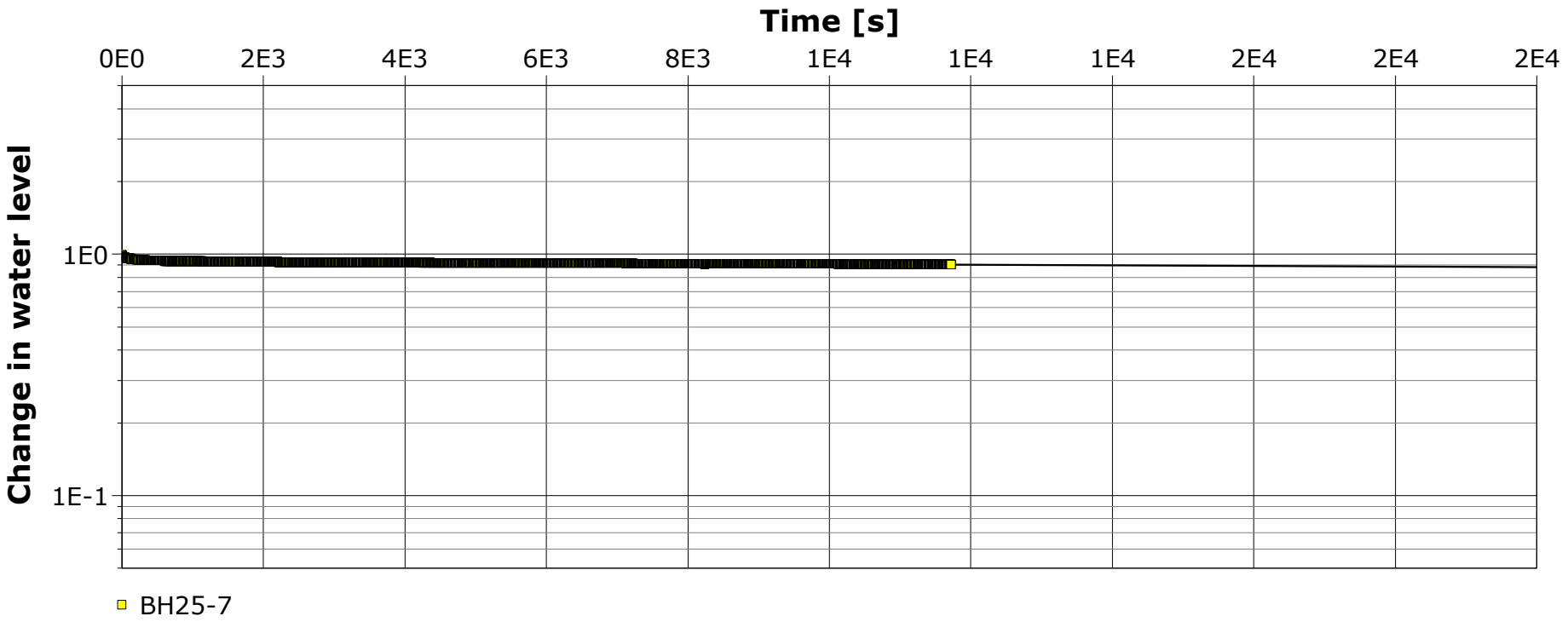
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-7 Test #2	Test Well: BH25-7
Test Conducted by: DC		Test Date: 2025-12-17
Analysis Performed by: DM	Bouwer & Rice Method	Analysis Date: 2026-01-16
Aquifer Thickness: 3.97 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]
BH25-7	9.90×10^{-5}

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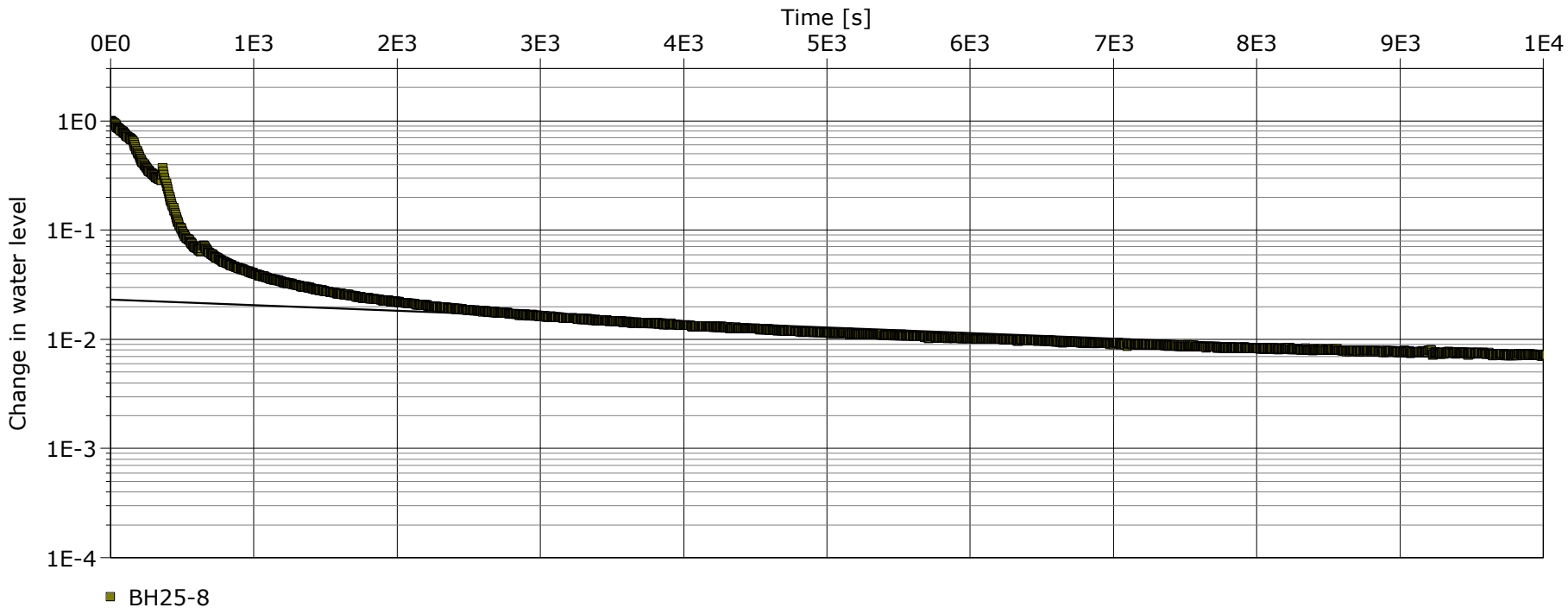
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-8	Test Well: BH25-8
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/BK	Hvorslev Method	Analysis Date: 2026-01-16
Aquifer Thickness: 4.97 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]
BH25-8	5.20×10^{-3}

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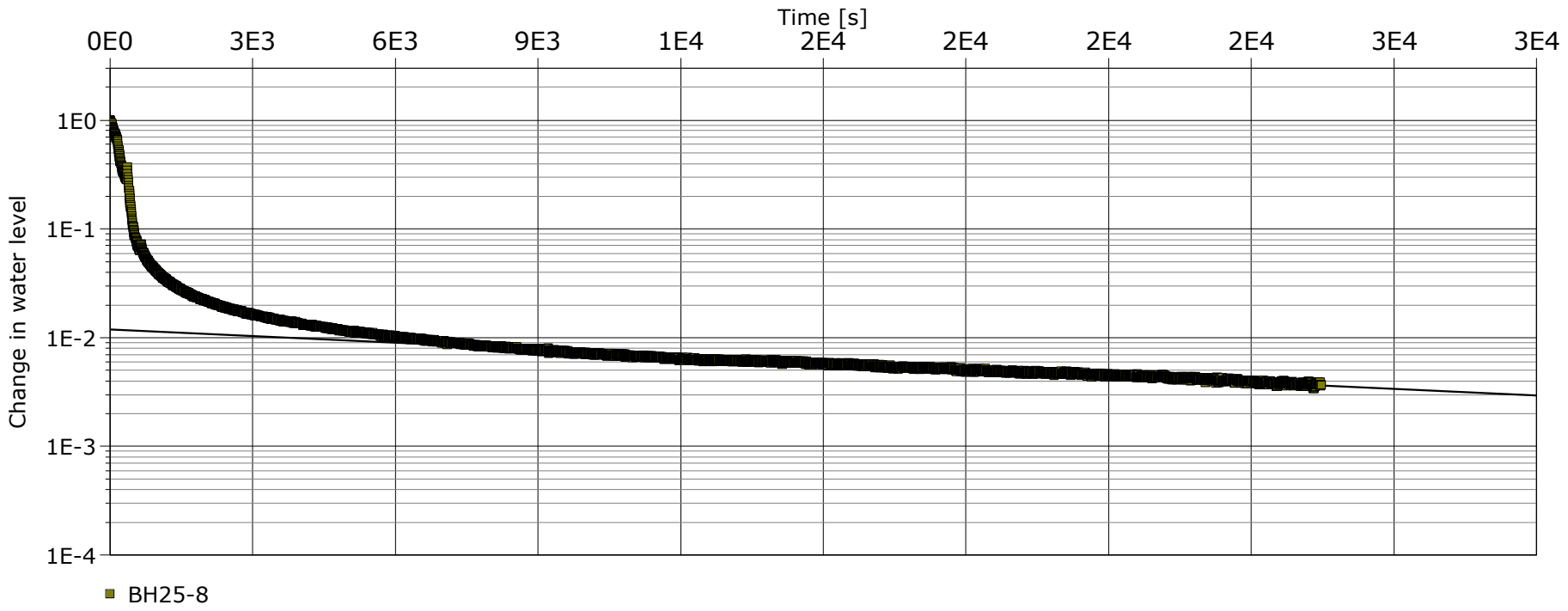
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: BH25-8	Test Well: BH25-8
Test Conducted by: DC		Test Date: 2025-12-03
Analysis Performed by: DM/BK	Bouwer & Rice Method	Analysis Date: 2026-01-16
Aquifer Thickness: 4.97 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]
BH25-8	1.60×10^{-3}

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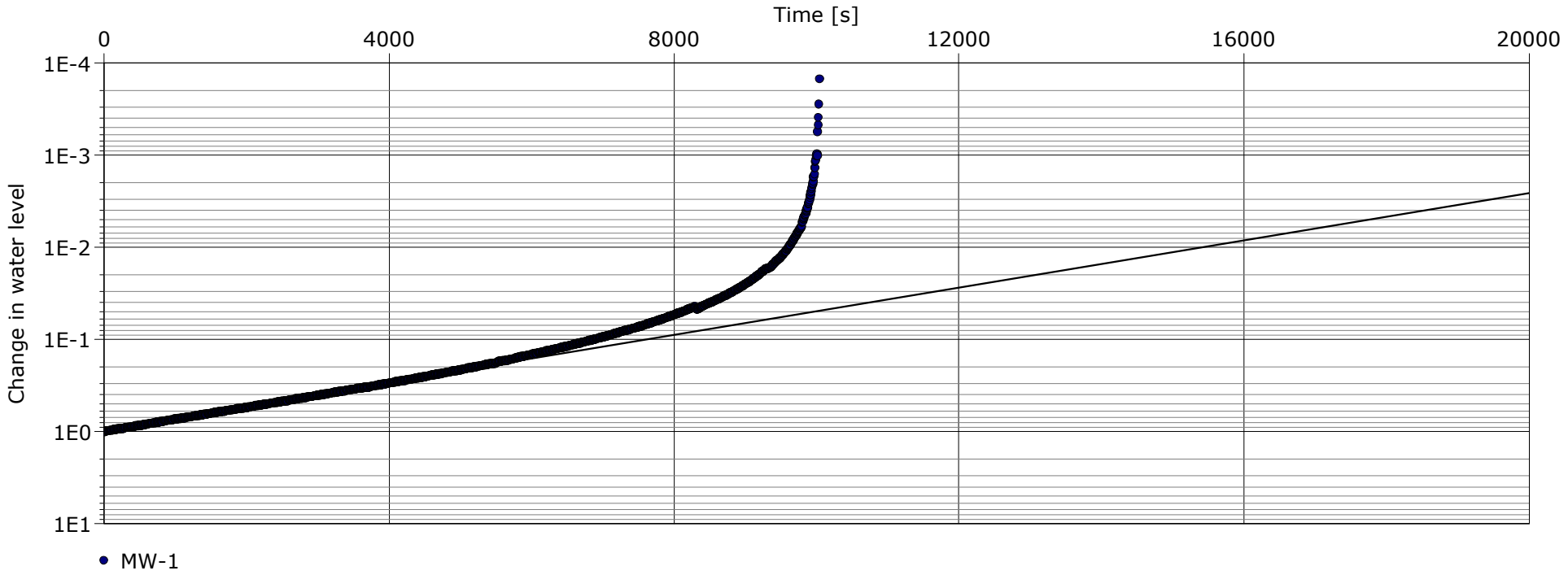
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: MW-1 Test #1	Test Well: MW-1
Test Conducted by: DC		Test Date: 2025-12-08
Analysis Performed by: DM/BK	Hvorslev Method	Analysis Date: 2026-01-16
Aquifer Thickness: 7.58 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]
MW-1	1.30×10^{-2}

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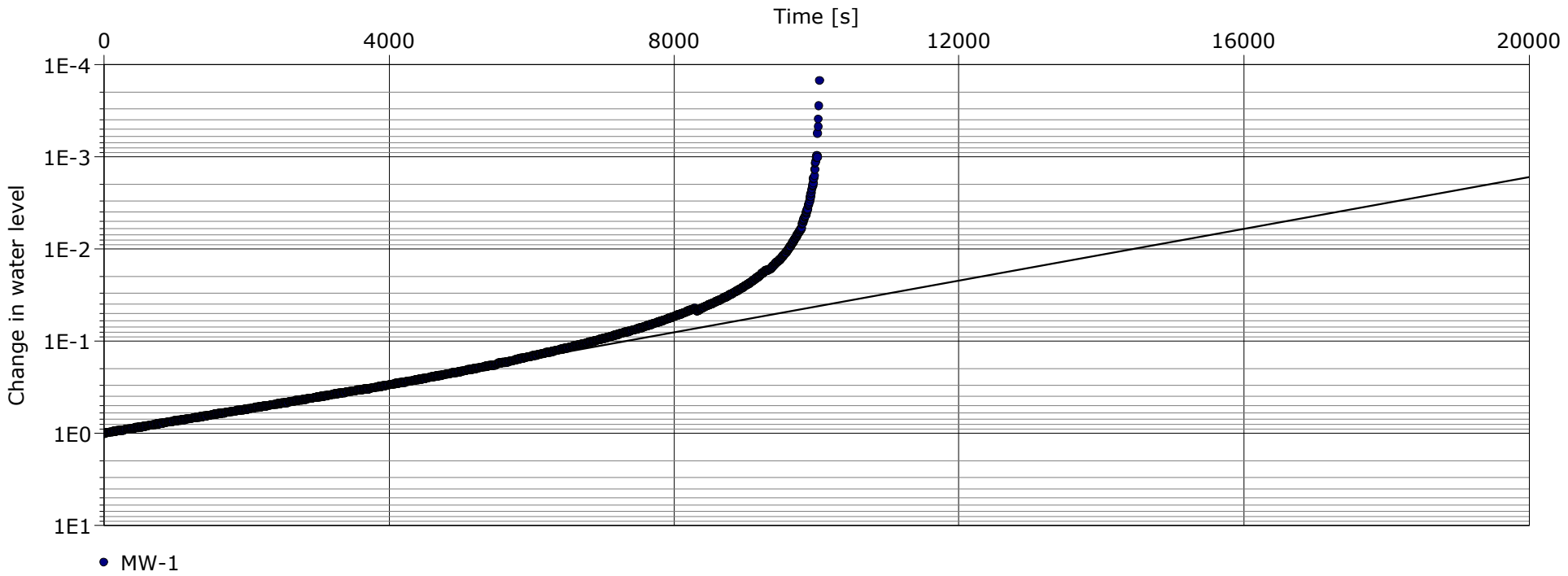
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: MW-1 Test #1	Test Well: MW-1
Test Conducted by: DC		Test Date: 2025-12-08
Analysis Performed by: DM/BK	Bouwer & Rice Method	Analysis Date: 2026-01-16
Aquifer Thickness: 7.58 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]
MW-1	1.10×10^{-2}

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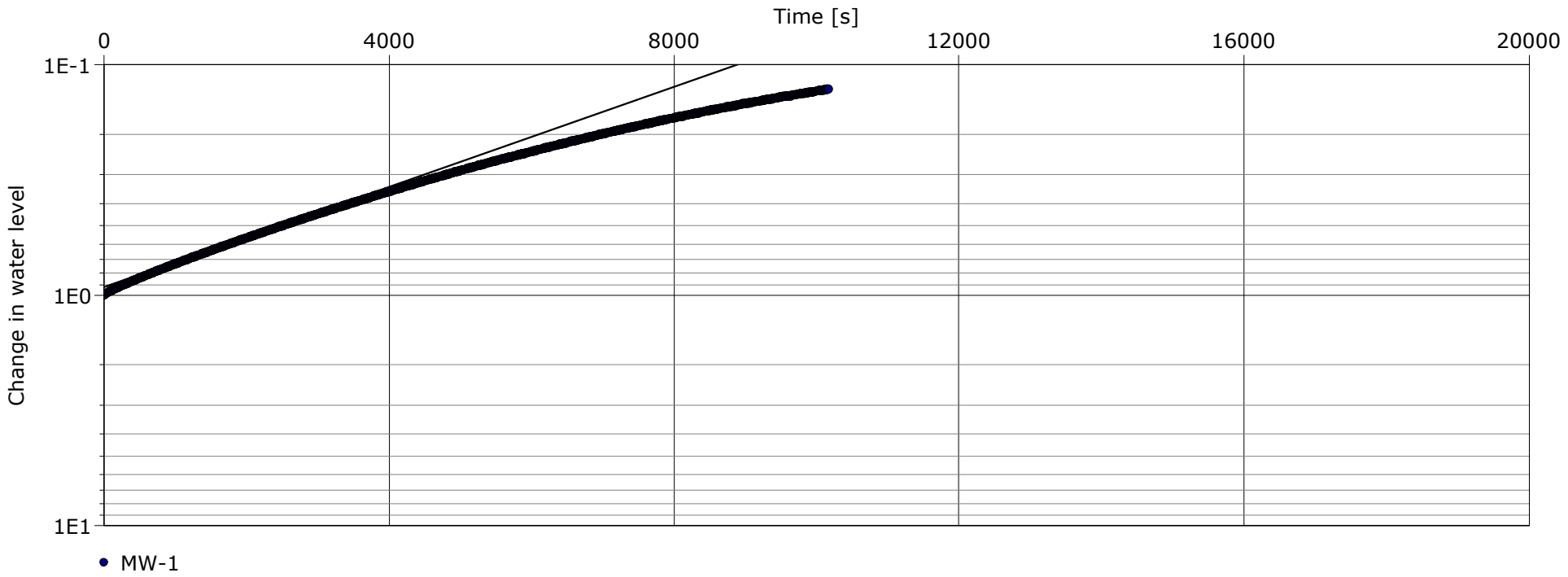
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: MW-1 Test #2	Test Well: MW-1
Test Conducted by: DM		Test Date: 2026-01-16
Analysis Performed by: DM/BK	Hvorslev Method	Analysis Date: 2026-01-16
Aquifer Thickness: 7.58 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [m/d]
MW-1	1.10×10^{-2}

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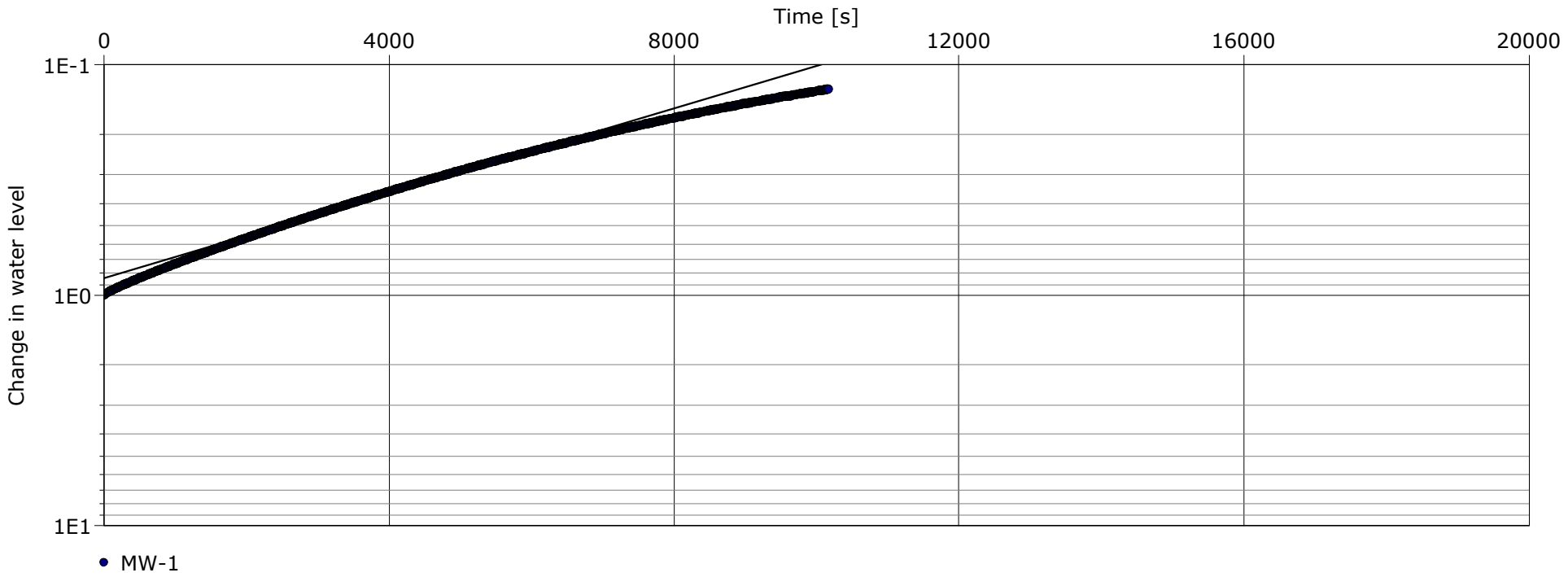
Slug Test Analysis Report

Project: Reach Street

Number: 25-3614

Client: Rick Wannop Developments

Location: Port Perry, Ontario	Slug Test: MW-1 Test #2	Test Well: MW-1
Test Conducted by: DM		Test Date: 2026-01-16
Analysis Performed by: DM/BK	Bouwer & Rice Method	Analysis Date: 2026-01-16
Aquifer Thickness: 7.58 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/d]
MW-1	7.20×10^{-3}

Appendix H

Soil Quality Data

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured. Proudly Canadian.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G132041 **REPORT No: 25-037154 - Rev. 0**

Report To:
Oakridge Environmental
PO Box 431
Peterborough, ON K9J 6Z3

CADUCEON Environmental Laboratories
285 Dalton Ave
Kingston, ON K7K 6Z1

Attention: Dan MacIntyre

DATE RECEIVED: 2025-Dec-03
DATE REPORTED: 2025-Dec-09
SAMPLE MATRIX: Soil

CUSTOMER PROJECT: Reach
P.O. NUMBER: PO#25-3614

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Conductivity Meter (Solid)	9	OTTAWA	ABAILEY	2025-Dec-05	A-COND-03	MECP E3530
Cyanide WAD (Solid)	9	KINGSTON	EHINCH	2025-Dec-08	CN-001	EPA 9012B
Boron-HWS (Solid)	9	OTTAWA	NSAUNDERS	2025-Dec-05	D-ICP-01	MECP E3470
Chromium VI (Solid)	9	OTTAWA	AGRAF	2025-Dec-04	D-CRVI-02	EPA 7196A
ICP/MS (Solid)	9	OTTAWA	GFENTON	2025-Dec-05	D-ICPMS-01	EPA 6020B
ICP/OES (Solid)	9	OTTAWA	NSAUNDERS	2025-Dec-05	D-ICP-02	EPA 6010
Mercury (Solid)	9	OTTAWA	TBENNETT	2025-Dec-05	D-HG-01	EPA 7471A
SAR analysed by ICPOES (Solid)	9	OTTAWA	NSAUNDERS	2025-Dec-05	D-ICP-02	EPA 6010
Moisture	9	KINGSTON	ROHANLEY	2025-Dec-04	% Moisture	SM 2540
OC Pesticides (Solid)	6	KINGSTON	CSUMMERHAYS	2025-Dec-05	PESTCL-002	EPA 8081
pH Meter (Solid)	9	OTTAWA	ABAILEY	2025-Dec-05	pH-03	MECP E3530
PHC F1 (Solid)	9	RICHMOND_HILL	JEVANS	2025-Dec-04	C-VPHS-01	CWS Tier 1
PHC F2-4 (Solid)	9	KINGSTON	STHOMPSON	2025-Dec-05	PHC-S-001	CWS Tier 1
SVOC - Semi-Volatiles (Solid)	4	KINGSTON	KPARKER	2025-Dec-05	NAB-S-001	EPA 8270D
VOC-Volatiles (Solid)	9	RICHMOND_HILL	JEVANS	2025-Dec-04	C-VOC-02	EPA 8260

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is within 30% of response factor for toluene:
nC10,nC16 and nC34 response factors within 10% of each other:
C50 response factors within 70% of nC10+nC16+nC34 average:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

R.L. = Reporting Limit
NC = Not Calculated
Test methods may be modified from specified reference method unless indicated by an *

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

Michelle Dubien
Data Specialist

The analytical results reported herein refer to the samples as received and relate only to the items tested. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

				Client I.D.	BH25-1	BH25-3	BH25-4	BH25-5(2.5-7)
				Sample I.D.	25-037154-1	25-037154-2	25-037154-3	25-037154-4
				Date Collected	2025-Nov-25	2025-Nov-25	2025-Nov-25	2025-Nov-27
Parameter	Units	R.L.	Limits	Reg 153/406	-	-	-	-
Conductivity @25°C	mS/cm	0.001	0.57	T1RPI	0.110	0.144	0.157	0.114
pH @25°C	-	-			7.11	7.30	7.29	7.90
Sodium Adsorption Ratio (Calculated)	-	-	2.4	T1RPI	0.12	0.27	0.15	0.23
Cyanide (WAD)	µg/g	0.05	0.051	T1RPI	<0.05	<0.05	<0.05	<0.05
Barium	µg/g	1	220	T1RPI	22	46	31	41
Beryllium	µg/g	0.2	2.5	T1RPI	<0.2	<0.2	0.2	<0.2
Boron	µg/g	0.5	36	T1RPI	6.3	10.8	6.7	7.4
Cadmium	µg/g	0.5	1.2	T1RPI	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	1	70	T1RPI	7	10	19	9
Cobalt	µg/g	1	21	T1RPI	4	4	6	5
Copper	µg/g	1	92	T1RPI	8	10	8	7
Lead	µg/g	5	120	T1RPI	<5	<5	<5	<5
Molybdenum	µg/g	1	2	T1RPI	<1	<1	<1	<1
Nickel	µg/g	1	82	T1RPI	5	7	9	7
Vanadium	µg/g	1	86	T1RPI	17	17	24	18
Zinc	µg/g	3	290	T1RPI	17	22	21	21
Antimony	µg/g	0.5	1.3	T1RPI	<0.5	<0.5	<0.5	<0.5
Arsenic	µg/g	0.5	18	T1RPI	1.2	1.4	1.5	1.3
Selenium	µg/g	0.5	1.5	T1RPI	<0.5	<0.5	<0.5	<0.5
Silver	µg/g	0.2	0.5	T1RPI	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	0.1	1	T1RPI	<0.1	<0.1	<0.1	<0.1

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				Client I.D.	BH25-1	BH25-3	BH25-4	BH25-5(2.5-7)
				Sample I.D.	25-037154-1	25-037154-2	25-037154-3	25-037154-4
				Date Collected	2025-Nov-25	2025-Nov-25	2025-Nov-25	2025-Nov-27
Parameter	Units	R.L.	Limits	Reg 153/406	-	-	-	-
Uranium	µg/g	0.1	2.5	T1RPI	0.3	0.4	0.4	0.4
Boron (HWS)	µg/g	0.02			0.09	0.08	0.11	0.13
Chromium (VI)	µg/g	0.2	0.66	T1RPI	<0.2	<0.2	<0.2	<0.2
Mercury	µg/g	0.01	0.27	T1RPI	<0.01	<0.01	0.01	<0.01

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				Client I.D.	BH25-5(~ 18 Ft)	BH25-7	BH25-9	BH25-9(7.5-12)
				Sample I.D.	25-037154-5	25-037154-6	25-037154-7	25-037154-8
				Date Collected	2025-Nov-27	2025-Nov-26	2025-Nov-25	2025-Nov-26
Parameter	Units	R.L.	Limits	Reg 153/406	-	-	-	-
Conductivity @25°C	mS/cm	0.001	0.57	T1RPI	0.123	0.220	0.120	0.177
pH @25°C	-	-			7.23	7.88	7.92	7.83
Sodium Adsorption Ratio (Calculated)	-	-	2.4	T1RPI	0.35	0.64	0.10	0.05
Cyanide (WAD)	µg/g	0.05	0.051	T1RPI	<0.05	<0.05	<0.05	<0.05
Barium	µg/g	1	220	T1RPI	38	124	28	92
Beryllium	µg/g	0.2	2.5	T1RPI	<0.2	0.4	<0.2	0.4
Boron	µg/g	0.5	36	T1RPI	7.6	11.8	7.2	18.3
Cadmium	µg/g	0.5	1.2	T1RPI	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	1	70	T1RPI	11	17	7	16
Cobalt	µg/g	1	21	T1RPI	4	8	3	8
Copper	µg/g	1	92	T1RPI	8	13	5	16
Lead	µg/g	5	120	T1RPI	<5	5	<5	7
Molybdenum	µg/g	1	2	T1RPI	<1	<1	<1	<1
Nickel	µg/g	1	82	T1RPI	6	14	5	15
Vanadium	µg/g	1	86	T1RPI	17	25	17	22
Zinc	µg/g	3	290	T1RPI	19	33	13	38
Antimony	µg/g	0.5	1.3	T1RPI	<0.5	<0.5	<0.5	<0.5
Arsenic	µg/g	0.5	18	T1RPI	1.3	1.8	0.9	2.5
Selenium	µg/g	0.5	1.5	T1RPI	<0.5	<0.5	<0.5	<0.5
Silver	µg/g	0.2	0.5	T1RPI	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	0.1	1	T1RPI	<0.1	0.1	<0.1	0.1

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Parameter	Units	R.L.	Limits	Reg 153/406	Client I.D.	BH25-5(~ 18 Ft)	BH25-7	BH25-9	BH25-9(7.5-12)
					Sample I.D.	25-037154-5	25-037154-6	25-037154-7	25-037154-8
					Date Collected	2025-Nov-27	2025-Nov-26	2025-Nov-25	2025-Nov-26
						-	-	-	-
Uranium	µg/g	0.1	2.5	T1RPI		0.4	0.6	0.3	0.6
Boron (HWS)	µg/g	0.02				0.10	0.15	0.09	0.11
Chromium (VI)	µg/g	0.2	0.66	T1RPI		<0.2	<0.2	<0.2	<0.2
Mercury	µg/g	0.01	0.27	T1RPI		<0.01	<0.01	<0.01	0.03

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				Client I.D.	Berm
				Sample I.D.	25-037154-9
				Date Collected	2025-Nov-26
Parameter	Units	R.L.	Limits	Reg 153/406	-
Conductivity @25°C	mS/cm	0.001	0.57	T1RPI	0.189
pH @25°C	-	-			7.71
Sodium Adsorption Ratio (Calculated)	-	-	2.4	T1RPI	0.05
Cyanide (WAD)	µg/g	0.05	0.051	T1RPI	<0.05
Barium	µg/g	1	220	T1RPI	38
Beryllium	µg/g	0.2	2.5	T1RPI	0.2
Boron	µg/g	0.5	36	T1RPI	5.7
Cadmium	µg/g	0.5	1.2	T1RPI	<0.5
Chromium	µg/g	1	70	T1RPI	11
Cobalt	µg/g	1	21	T1RPI	3
Copper	µg/g	1	92	T1RPI	8
Lead	µg/g	5	120	T1RPI	14
Molybdenum	µg/g	1	2	T1RPI	<1
Nickel	µg/g	1	82	T1RPI	6
Vanadium	µg/g	1	86	T1RPI	19
Zinc	µg/g	3	290	T1RPI	42
Antimony	µg/g	0.5	1.3	T1RPI	<0.5
Arsenic	µg/g	0.5	18	T1RPI	1.9
Selenium	µg/g	0.5	1.5	T1RPI	<0.5
Silver	µg/g	0.2	0.5	T1RPI	<0.2
Thallium	µg/g	0.1	1	T1RPI	<0.1

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				Client I.D.	Berm
				Sample I.D.	25-037154-9
				Date Collected	2025-Nov-26
Parameter	Units	R.L.	Limits	Reg 153/406	-
Uranium	µg/g	0.1	2.5	T1RPI	0.9
Boron (HWS)	µg/g	0.02			0.21
Chromium (VI)	µg/g	0.2	0.66	T1RPI	<0.2
Mercury	µg/g	0.01	0.27	T1RPI	0.03

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				Client I.D.	BH25-1	BH25-3	BH25-4	BH25-5(2.5-7)
				Sample I.D.	25-037154-1	25-037154-2	25-037154-3	25-037154-4
				Date Collected	2025-Nov-25	2025-Nov-25	2025-Nov-25	2025-Nov-27
Parameter	Units	R.L.	Limits	Reg 153/406	-	-	-	-
Acetone	µg/g	0.5	0.5	T1RPI	<0.5	<0.5	<0.5	<0.5
Benzene	µg/g	0.02	0.02	T1RPI	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Bromoform	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Bromomethane	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Chloroform	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dibromochloromethane	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Ethylene Dibromide	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichlorobenzene,1,2-	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene,1,3-	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene,1,4-	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane (Freon 12)	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Dichloroethane,1,1-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethane,1,2-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethylene,1,1-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethylene,1,2-cis-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethylene,1,2-trans-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloropropane,1,2-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloropropene,1,3-cis-	µg/g	0.02			<0.02	<0.02	<0.02	<0.02

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Parameter	Units	R.L.	Limits	Reg 153/406	Client I.D.	BH25-1	BH25-3	BH25-4	BH25-5(2.5-7)
					Sample I.D.	25-037154-1	25-037154-2	25-037154-3	25-037154-4
					Date Collected	2025-Nov-25	2025-Nov-25	2025-Nov-25	2025-Nov-27
						-	-	-	-
Dichloropropene,1,3-cis+trans-(Calculated)	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Dichloropropene,1,3-trans-	µg/g	0.02				<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Hexane	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Dichloromethane (Methylene Chloride)	µg/g	0.05	0.05	T1RPI		0.18	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	µg/g	0.5	0.5	T1RPI		<0.5	<0.5	<0.5	<0.5
Methyl Isobutyl Ketone	µg/g	0.5	0.5	T1RPI		<0.5	<0.5	<0.5	<0.5
Methyl tert-Butyl Ether (MTBE)	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Styrene	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Tetrachloroethane,1,1,1,2-	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	0.2	0.2	T1RPI		<0.2	<0.2	<0.2	<0.2
Trichloroethane,1,1,1-	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Trichloroethane,1,1,2-	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Trichloroethylene	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane (Freon 11)	µg/g	0.02	0.25	T1RPI		<0.02	<0.02	<0.02	<0.02
Vinyl Chloride	µg/g	0.02	0.02	T1RPI		<0.02	<0.02	<0.02	<0.02
Xylene, m,p-	µg/g	0.03				<0.03	<0.03	<0.03	<0.03
Xylene, m,p,o- (Calculated)	µg/g	0.03	0.05	T1RPI		<0.03	<0.03	<0.03	<0.03
Xylene, o-	µg/g	0.03				<0.03	<0.03	<0.03	<0.03

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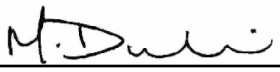
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				Client I.D.	BH25-1	BH25-3	BH25-4	BH25-5(2.5-7)
				Sample I.D.	25-037154-1	25-037154-2	25-037154-3	25-037154-4
				Date Collected	2025-Nov-25	2025-Nov-25	2025-Nov-25	2025-Nov-27
Parameter	Units	R.L.	Limits	Reg 153/406	-	-	-	-
PHC F1 (C6-C10)	µg/g	10	25	T1RPI	<10	<10	<10	<10
PHC F2 (>C10-C16)	µg/g	5	10	T1RPI	<5	<5	<5	<5
PHC F3 (>C16-C34)	µg/g	10	240	T1RPI	<10	21	19	<10
PHC F4 (>C34-C50)	µg/g	10	120	T1RPI	<10	<10	<10	<10
Moisture	%	-			9.68	8.35	6.58	9.70

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				Client I.D.	BH25-5(~ 18 Ft)	BH25-7	BH25-9	BH25-9(7.5-12)
				Sample I.D.	25-037154-5	25-037154-6	25-037154-7	25-037154-8
				Date Collected	2025-Nov-27	2025-Nov-26	2025-Nov-25	2025-Nov-26
Parameter	Units	R.L.	Limits	Reg 153/406	-	-	-	-
Acetone	µg/g	0.5	0.5	T1RPI	<0.5	<0.5	<0.5	<0.5
Benzene	µg/g	0.02	0.02	T1RPI	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Bromoform	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Bromomethane	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Chloroform	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dibromochloromethane	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Ethylene Dibromide	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichlorobenzene,1,2-	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene,1,3-	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene,1,4-	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane (Freon 12)	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Dichloroethane,1,1-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethane,1,2-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethylene,1,1-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethylene,1,2-cis-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloroethylene,1,2-trans-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloropropane,1,2-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Dichloropropene,1,3-cis-	µg/g	0.02			<0.02	<0.02	<0.02	<0.02



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Parameter	Units	R.L.	Limits	Reg 153/406	Client I.D.	BH25-5(~ 18 Ft)	BH25-7	BH25-9	BH25-9(7.5-12)
					Sample I.D.	25-037154-5	25-037154-6	25-037154-7	25-037154-8
					Date Collected	2025-Nov-27	2025-Nov-26	2025-Nov-25	2025-Nov-26
						-	-	-	-
Dichloropropene,1,3-cis+trans-(Calculated)	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Dichloropropene,1,3-trans-	µg/g	0.02				<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Hexane	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Dichloromethane (Methylene Chloride)	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	0.16	<0.05
Methyl Ethyl Ketone	µg/g	0.5	0.5	T1RPI		<0.5	<0.5	<0.5	<0.5
Methyl Isobutyl Ketone	µg/g	0.5	0.5	T1RPI		<0.5	<0.5	<0.5	<0.5
Methyl tert-Butyl Ether (MTBE)	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Styrene	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Tetrachloroethane,1,1,1,2-	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	0.2	0.2	T1RPI		<0.2	<0.2	<0.2	<0.2
Trichloroethane,1,1,1-	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Trichloroethane,1,1,2-	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Trichloroethylene	µg/g	0.05	0.05	T1RPI		<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane (Freon 11)	µg/g	0.02	0.25	T1RPI		<0.02	<0.02	<0.02	<0.02
Vinyl Chloride	µg/g	0.02	0.02	T1RPI		<0.02	<0.02	<0.02	<0.02
Xylene, m,p-	µg/g	0.03				<0.03	<0.03	<0.03	<0.03
Xylene, m,p,o- (Calculated)	µg/g	0.03	0.05	T1RPI		<0.03	<0.03	<0.03	<0.03
Xylene, o-	µg/g	0.03				<0.03	<0.03	<0.03	<0.03



Michelle Dubien
Data Specialist

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				Client I.D.	BH25-5(~ 18 Ft)	BH25-7	BH25-9	BH25-9(7.5-12)
				Sample I.D.	25-037154-5	25-037154-6	25-037154-7	25-037154-8
				Date Collected	2025-Nov-27	2025-Nov-26	2025-Nov-25	2025-Nov-26
Parameter	**Units**	**R.L.**	**Limits**	**Reg 153/406**	-	-	-	-
PHC F1 (C6-C10)	µg/g	10	25	T1RPI	<10	<10	<10	<10
PHC F2 (>C10-C16)	µg/g	5	10	T1RPI	7	<5	<5	<5
PHC F3 (>C16-C34)	µg/g	10	240	T1RPI	16	22	<10	21
PHC F4 (>C34-C50)	µg/g	10	120	T1RPI	<10	<10	<10	<10
Moisture	%	-			11.3	12.3	18.4	20.4

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				Client I.D.	Berm
				Sample I.D.	25-037154-9
				Date Collected	2025-Nov-26
Parameter	Units	R.L.	Limits	Reg 153/406	-
Acetone	µg/g	0.5	0.5	T1RPI	<0.5
Benzene	µg/g	0.02	0.02	T1RPI	<0.02
Bromodichloromethane	µg/g	0.02	0.05	T1RPI	<0.02
Bromoform	µg/g	0.02	0.05	T1RPI	<0.02
Bromomethane	µg/g	0.05	0.05	T1RPI	<0.05
Carbon Tetrachloride	µg/g	0.05	0.05	T1RPI	<0.05
Chlorobenzene	µg/g	0.02	0.05	T1RPI	<0.02
Chloroform	µg/g	0.02	0.05	T1RPI	<0.02
Dibromochloromethane	µg/g	0.02	0.05	T1RPI	<0.02
Ethylene Dibromide	µg/g	0.02	0.05	T1RPI	<0.02
Dichlorobenzene,1,2-	µg/g	0.05	0.05	T1RPI	<0.05
Dichlorobenzene,1,3-	µg/g	0.05	0.05	T1RPI	<0.05
Dichlorobenzene,1,4-	µg/g	0.05	0.05	T1RPI	<0.05
Dichlorodifluoromethane (Freon 12)	µg/g	0.05	0.05	T1RPI	<0.05
Dichloroethane,1,1-	µg/g	0.02	0.05	T1RPI	<0.02
Dichloroethane,1,2-	µg/g	0.02	0.05	T1RPI	<0.02
Dichloroethylene,1,1-	µg/g	0.02	0.05	T1RPI	<0.02
Dichloroethylene,1,2-cis-	µg/g	0.02	0.05	T1RPI	<0.02
Dichloroethylene,1,2-trans-	µg/g	0.02	0.05	T1RPI	<0.02
Dichloropropane,1,2-	µg/g	0.02	0.05	T1RPI	<0.02
Dichloropropene,1,3-cis-	µg/g	0.02			<0.02

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				Client I.D.	Berm
				Sample I.D.	25-037154-9
				Date Collected	2025-Nov-26
Parameter	Units	R.L.	Limits	Reg 153/406	-
Dichloropropene,1,3-cis+trans-(Calculated)	µg/g	0.02	0.05	T1RPI	<0.02
Dichloropropene,1,3-trans-	µg/g	0.02			<0.02
Ethylbenzene	µg/g	0.02	0.05	T1RPI	<0.02
Hexane	µg/g	0.02	0.05	T1RPI	<0.02
Dichloromethane (Methylene Chloride)	µg/g	0.05	0.05	T1RPI	<0.05
Methyl Ethyl Ketone	µg/g	0.5	0.5	T1RPI	<0.5
Methyl Isobutyl Ketone	µg/g	0.5	0.5	T1RPI	<0.5
Methyl tert-Butyl Ether (MTBE)	µg/g	0.05	0.05	T1RPI	<0.05
Styrene	µg/g	0.05	0.05	T1RPI	<0.05
Tetrachloroethane,1,1,1,2-	µg/g	0.02	0.05	T1RPI	<0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.05	0.05	T1RPI	<0.05
Tetrachloroethylene	µg/g	0.05	0.05	T1RPI	<0.05
Toluene	µg/g	0.2	0.2	T1RPI	<0.2
Trichloroethane,1,1,1-	µg/g	0.02	0.05	T1RPI	<0.02
Trichloroethane,1,1,2-	µg/g	0.02	0.05	T1RPI	<0.02
Trichloroethylene	µg/g	0.05	0.05	T1RPI	<0.05
Trichlorofluoromethane (Freon 11)	µg/g	0.02	0.25	T1RPI	<0.02
Vinyl Chloride	µg/g	0.02	0.02	T1RPI	<0.02
Xylene, m,p-	µg/g	0.03			<0.03
Xylene, m,p,o- (Calculated)	µg/g	0.03	0.05	T1RPI	<0.03
Xylene, o-	µg/g	0.03			<0.03

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				Client I.D.	Berm
				Sample I.D.	25-037154-9
				Date Collected	2025-Nov-26
Parameter	Units	R.L.	Limits	Reg 153/406	-
PHC F1 (C6-C10)	µg/g	10	25	T1RPI	<10
PHC F2 (>C10-C16)	µg/g	5	10	T1RPI	<5
PHC F3 (>C16-C34)	µg/g	10	240	T1RPI	32
PHC F4 (>C34-C50)	µg/g	10	120	T1RPI	<10
Moisture	%	-			19.9

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Parameter	Units	R.L.	Limits	Reg 153/406	Client I.D.	BH25-3	BH25-5(~ 18 Ft)	BH25-7	BH25-9(7.5-12)
					Sample I.D.	25-037154-2	25-037154-5	25-037154-6	25-037154-8
					Date Collected	2025-Nov-25	2025-Nov-27	2025-Nov-26	2025-Nov-26
						-	-	-	-
Acenaphthene	µg/g	0.05	0.072	T1RPI		<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	T1RPI		<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.16	T1RPI		<0.05	<0.05	<0.05	<0.05
Benzo[a]anthracene	µg/g	0.05	0.36	T1RPI		<0.05	<0.05	0.11	<0.05
Benzo(a)pyrene	µg/g	0.05	0.3	T1RPI		<0.05	<0.05	0.11	<0.05
Benzo(b)fluoranthene	µg/g	0.05	0.47	T1RPI		<0.05	<0.05	0.14	<0.05
Benzo(b+k)fluoranthene (Calculated)	µg/g	0.05				<0.09 (3.)	<0.18 (3.)	<0.45 (3.)	<0.11 (3.)
Benzo(g,h,i)perylene	µg/g	0.05	0.68	T1RPI		<0.05	<0.05	0.08	<0.05
Benzo(k)fluoranthene	µg/g	0.05	0.48	T1RPI		<0.05	<0.05	0.05	<0.05
Biphenyl, 1, 1-	µg/g	0.02	0.05	T1RPI		<0.02	<0.02	<0.02	<0.02
Bis(2-Chloroethyl)ether	µg/g	0.02	0.5	T1RPI		<0.02	<0.02	<0.02	<0.02
Bis(2-Chloroisopropyl)ether	µg/g	0.02	0.5	T1RPI		<0.02	<0.02	<0.03 (3.)	<0.02
Bis(2-ethylhexyl) Phthalate	µg/g	0.5	5	T1RPI		<0.5	<0.5	<0.6 (3.)	<0.5
Chloroaniline,4-	µg/g	0.02	0.5	T1RPI		<0.02	<0.02	<0.05	<0.02
Chlorophenol,2-	µg/g	0.02	0.1	T1RPI		<0.02	<0.02	<0.02	<0.02
Chrysene	µg/g	0.05	2.8	T1RPI		<0.05	<0.05	0.11	<0.05
Dibenzo(a,h)anthracene	µg/g	0.05	0.1	T1RPI		<0.05	<0.05	<0.05	<0.05
Dichlorobenzidine,3,3'-	µg/g	0.05	1	T1RPI		<0.05	<0.05	<0.08 (3.)	<0.05
Dichlorophenol,2,4-	µg/g	0.02	0.1	T1RPI		<0.02	<0.02	<0.02	<0.02
Diethyl Phthalate	µg/g	0.1	0.5	T1RPI		<0.1	<0.1	<0.1	<0.1
Dimethylphenol,2,4-	µg/g	0.1	0.2	T1RPI		<0.1	<0.1	<0.1	<0.1

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				Client I.D.	BH25-3	BH25-5(~ 18 Ft)	BH25-7	BH25-9(7.5-12)
				Sample I.D.	25-037154-2	25-037154-5	25-037154-6	25-037154-8
				Date Collected	2025-Nov-25	2025-Nov-27	2025-Nov-26	2025-Nov-26
Parameter	Units	R.L.	Limits	Reg 153/406	-	-	-	-
Dimethyl Phthalate	µg/g	0.1	0.5	T1RPI	<0.1	<0.1	<0.1	<0.1
Dinitrophenol,2,4-	µg/g	1	2	T1RPI	<1	<1	<1	<1
Dinitrotoluene,2,4-	µg/g	0.02			<0.02	<0.02	<0.04 (3.)	<0.02
Dinitrotoluene,2,6-	µg/g	0.02			<0.02	<0.02	<0.03 (3.)	<0.02
Dinitrotoluene,2,4 & 2,6- (Calculated)	µg/g	0.2	0.5	T1RPI	<0.2	<0.2	<0.2	<0.2
Fluoranthene	µg/g	0.05	0.56	T1RPI	<0.05	<0.05	0.26	<0.05
Fluorene	µg/g	0.05	0.12	T1RPI	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3,-cd)Pyrene	µg/g	0.05	0.23	T1RPI	<0.05	<0.05	0.07	<0.05
Methylnaphthalene,1-	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
Methylnaphthalene,2-	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
Methylnaphthalene,2-(1-) (Calculated)	µg/g	0.05	0.59	T1RPI	<0.05	<0.05	<0.05	<0.05
Naphthalene	µg/g	0.01	0.09	T1RPI	<0.01	<0.01	<0.02 (3.)	<0.01
Pentachlorophenol	µg/g	0.1	0.1	T1RPI	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/g	0.01	0.69	T1RPI	<0.01	0.01	0.21	<0.01
Phenol	µg/g	0.01	0.5	T1RPI	<0.01	<0.01	<0.02 (3.)	<0.01
Pyrene	µg/g	0.05	1	T1RPI	<0.05	<0.05	0.20	<0.05
Trichlorobenzene,1,2,4-	µg/g	0.02	0.05	T1RPI	<0.02	<0.02	<0.02	<0.02
Trichlorophenol,2,4,5-	µg/g	0.02	0.1	T1RPI	<0.02	<0.02	<0.02	<0.02
Trichlorophenol,2,4,6-	µg/g	0.02	0.1	T1RPI	<0.02	<0.02	<0.02	<0.02

Michelle Dubien
Data Specialist

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				Client I.D.	BH25-1	BH25-3	BH25-4	BH25-5(~ 18 Ft)
				Sample I.D.	25-037154-1	25-037154-2	25-037154-3	25-037154-5
				Date Collected	2025-Nov-25	2025-Nov-25	2025-Nov-25	2025-Nov-27
Parameter	Units	R.L.	Limits	Reg 153/406	-	-	-	-
Aldrin	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Chlordane (alpha)	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
Chlordane (gamma)	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
Chlordane (Alpha + Gamma) (Calculated)	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
o,p'-DDD	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
p,p'-DDD	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
DDD (Total) (Calculated)	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
o,p'-DDE	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
p,p'-DDE	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
DDE (Total) (Calculated)	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
o,p'-DDT	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
p,p'-DDT	µg/g	0.05			<0.05	<0.05	<0.05	<0.05
DDT (Total) (Calculated)	µg/g	0.05	1.4	T1RPI	<0.05	<0.05	<0.05	<0.05
Dieldrin	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Endosulfan I	µg/g	0.04			<0.04	<0.04	<0.04	<0.04
Endosulfan II	µg/g	0.04			<0.04	<0.04	<0.04	<0.04
Endosulfan (Total) (Calculated)	µg/g	0.04	0.04	T1RPI	<0.04	<0.04	<0.04	<0.04
Endrin	µg/g	0.04	0.04	T1RPI	<0.04	<0.04	<0.04	<0.04
Heptachlor	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Heptachlor Epoxide	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05
Hexachloroethane	µg/g	0.01	0.01	T1RPI	<0.01	<0.01	<0.01	<0.01

Michelle Dubien
Data Specialist

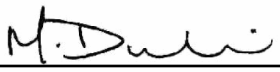
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				Client I.D.	BH25-1	BH25-3	BH25-4	BH25-5(~ 18 Ft)
				Sample I.D.	25-037154-1	25-037154-2	25-037154-3	25-037154-5
				Date Collected	2025-Nov-25	2025-Nov-25	2025-Nov-25	2025-Nov-27
Parameter	**Units**	**R.L.**	**Limits**	**Reg 153/406**	-	-	-	-
Hexachlorobutadiene	µg/g	0.01	0.01	T1RPI	<0.01	<0.01	<0.01	<0.01
Hexachlorobenzene	µg/g	0.01	0.01	T1RPI	<0.01	<0.01	<0.01	<0.01
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	0.01	T1RPI	<0.01	<0.01	<0.01	<0.01
Methoxychlor	µg/g	0.05	0.05	T1RPI	<0.05	<0.05	<0.05	<0.05

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Parameter	Units	R.L.	Limits	Reg 153/406	Client I.D.	BH25-9	BH25-9(7.5-12)
					Sample I.D.	25-037154-7	25-037154-8
					Date Collected	2025-Nov-25	2025-Nov-26
						-	-
Aldrin	µg/g	0.05	0.05	T1RPI		<0.05	<0.05
Chlordane (alpha)	µg/g	0.05				<0.05	<0.05
Chlordane (gamma)	µg/g	0.05				<0.05	<0.05
Chlordane (Alpha + Gamma) (Calculated)	µg/g	0.05	0.05	T1RPI		<0.05	<0.05
o,p'-DDD	µg/g	0.05				<0.05	<0.05
p,p'-DDD	µg/g	0.05				<0.05	<0.05
DDD (Total) (Calculated)	µg/g	0.05	0.05	T1RPI		<0.05	<0.05
o,p'-DDE	µg/g	0.05				<0.05	<0.05
p,p'-DDE	µg/g	0.05				<0.05	<0.05
DDE (Total) (Calculated)	µg/g	0.05	0.05	T1RPI		<0.05	<0.05
o,p'-DDT	µg/g	0.05				<0.05	<0.05
p,p'-DDT	µg/g	0.05				<0.05	<0.05
DDT (Total) (Calculated)	µg/g	0.05	1.4	T1RPI		<0.05	<0.05
Dieldrin	µg/g	0.05	0.05	T1RPI		<0.05	<0.05
Endosulfan I	µg/g	0.04				<0.04	<0.04
Endosulfan II	µg/g	0.04				<0.04	<0.04
Endosulfan (Total) (Calculated)	µg/g	0.04	0.04	T1RPI		<0.04	<0.04
Endrin	µg/g	0.04	0.04	T1RPI		<0.04	<0.04
Heptachlor	µg/g	0.05	0.05	T1RPI		<0.05	<0.05
Heptachlor Epoxide	µg/g	0.05	0.05	T1RPI		<0.05	<0.05
Hexachloroethane	µg/g	0.01	0.01	T1RPI		<0.01	<0.01



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				Client I.D.	BH25-9	BH25-9(7.5-12)
				Sample I.D.	25-037154-7	25-037154-8
				Date Collected	2025-Nov-25	2025-Nov-26
Parameter	**Units**	**R.L.**	**Limits**	**Reg 153/406**	-	-
Hexachlorobutadiene	µg/g	0.01	0.01	T1RPI	<0.01	<0.01
Hexachlorobenzene	µg/g	0.01	0.01	T1RPI	<0.01	<0.01
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	0.01	T1RPI	<0.01	<0.01
Methoxychlor	µg/g	0.05	0.05	T1RPI	<0.05	<0.05

Comments:

3. Elevated RL due to sample matrix interferences/dilution

Reg 153/406: Reg 153/406
T1RPI: R406 Tbl. 1 - RPI

Summary of Exceedances		
R406 Tbl. 1 - RPI		
BH25-1	**Found Value**	**Limit**
Dichloromethane (Methylene Chloride)	0.18	0.05
BH25-9	**Found Value**	**Limit**
Dichloromethane (Methylene Chloride)	0.16	0.05

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G132044 **REPORT No: 25-038414 - Rev. 0**

Report To:
Oakridge Environmental
PO Box 431
Peterborough, ON K9J 6Z3

CADUCEON Environmental Laboratories
285 Dalton Ave
Kingston, ON K7K 6Z1

Attention: Dan MacIntyre

DATE RECEIVED: 2025-Dec-16
DATE REPORTED: 2025-Dec-19
SAMPLE MATRIX: Soil

CUSTOMER PROJECT: Reach
P.O. NUMBER: PO#25-3614

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Moisture	2	KINGSTON	ROHANLEY	2025-Dec-17	% Moisture	SM 2540
VOC-Volatiles (Solid)	2	RICHMOND_HILL	JEVANS	2025-Dec-19	C-VOC-02	EPA 8260

R.L. = Reporting Limit
NC = Not Calculated
Test methods may be modified from specified reference method unless indicated by an *

				Client I.D.	HA25-13	HA25-14
				Sample I.D.	25-038414-1	25-038414-2
				Date Collected	2025-Dec-15	2025-Dec-15
Parameter	**Units**	**R.L.**	**Limits**	**Reg 153/406**	-	-
Dichloromethane (Methylene Chloride)	µg/g	0.05	0.05	T1RPI	<0.05	<0.05
Moisture	%	-			11.2	12.9

Reg 153/406: Reg 153/406
T1RPI: R406 Tbl. 1 - RPI

Michelle Dubien
Data Specialist

The analytical results reported herein refer to the samples as received and relate only to the items tested. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

Appendix I

Well Record Data

Water Well Records

November 21, 2025
11:09:05 AM

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
PORT PERRY VILLAGE	17 663754 4886343 W	2017-04 7437	2	0018		TH MO	0010 10	7306290 (Z259927) A218188	BRWN SAND GRVL 0002 BRWN CLAY SILT 0008 GREY CLAY SILT 0020
PORT PERRY VILLAGE	17 662914 4886173 W	2021-12 6988						7414007 (C54653) A314412 P	
PORT PERRY VILLAGE	17 662972 4886076 W	2018-07 7644	2	0040		TH MO	0030 10	7318511 (Z283325) A245141	FILL SAND CLAY 0040
PORT PERRY VILLAGE	17 662099 4885262 W	2015-04 7215						7269523 (C29327) A178827 P	
PORT PERRY VILLAGE	17 661997 4885094 W	2022-06 7464						7425121 (C56037) A347013 P	
PORT PERRY VILLAGE	17 662211 4885002 W	2023-03 7241						7450127 (Z406229) A354861 P	
PORT PERRY VILLAGE	17 663668 4884925 W	1955-10 2801						4601934 ()	LOAM 0001 BRWN CLAY 0002 GREY CLAY BLDR 0005 FSND 0006 FSND BLDR GRVL 0050 BLUE CLAY MSND GRVL 0071 CLAY MSND GRVL 0111 BLUE CLAY MSND GRVL 0314 BLUE CLAY GRVL 0329 BLCK SHLE 0331
PORT PERRY VILLAGE	17 663555 4885511 W	1947-01 2801	5					4601928 () A	MSND CLAY 0007 FSND CLAY BLDR 0025 HPAN 0038
PORT PERRY VILLAGE	17 662225 4885060 W	2023-03 7241						7450123 (Z406226) A351280 P	
PORT PERRY VILLAGE	17 662240 4885022 W	2023-03 7241						7450126 (Z406227) A354971 P	
PORT PERRY VILLAGE	17 662208 4885023 W	2023-03 7241						7450125 (Z400742) A370510 P	
PORT PERRY VILLAGE	17 662274 4885068 W	2023-03 7241						7450124 (Z406230) A367868 P	
PORT PERRY VILLAGE	17 663591 4885523 W	1947-01 2801	5					4601927 () A	MSND CLAY 0005 MSND BLDR CLAY 0027 HPAN 0030 HPAN BLDR 0038 HPAN 0061 FSND 0100 CLAY MSND 0118
PORT PERRY VILLAGE	17 662836 4886123 W	2007-10 6809			///:	MO		7054142 (Z69269) A057001 A	

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
PORT PERRY VILLAGE	17 662407 4884425 W	2018-08 7360	2	UT 0016		MO	0010 10	7316027 (Z293660) A253224	LOAM 0002 SILT CLAY 0006 SAND CLAY SLTY 0020
PORT PERRY VILLAGE	17 663941 4887005 W	2017-09 7247	2	UT 0022		TH MO	0020 2	7307078 (Z272445) A223239	BRWN LOAM 0001 BRWN SAND SILT WBRG 0007 BRWN SAND SILT WBRG 0008 GREY SAND SLTY WBRG 0022
SCUGOG TOWNSHIP (REA	17 662903 4886153 W	2012-05 7215						7188977 (C18400) A126347 P	
SCUGOG TOWNSHIP (REA	17 663935 4884126 W	2016-11 7247	2			TH MO	0015 5	7283600 (Z254670) A217031	BRWN SAND SLTY TILL 0020
SCUGOG TOWNSHIP (REA	17 663847 4886357 W	7303						7171103 (Z132390) A	
SCUGOG TOWNSHIP (REA	17 662543 4884967 W	2016-08 7215						7286153 (C34146) A206744 P	
SCUGOG TOWNSHIP (REA	17 661643 4885447 W	2015-05 7247	2	UT 0005		MT	0010 10	7256823 (Z214028) A174010	BRWN SILT GRVL DNSE 0004 BRWN SAND SILT DNSE 0013 GREY SILT CLAY LOOS 0020
SCUGOG TOWNSHIP (REA	17 664057 4886323 W	2015-01 7247		UT 0010				7238157 (Z198510) A155979 A	
SCUGOG TOWNSHIP (REA	17 664015 4886333 W	2014-01 7247	2	UT 0010		MT	0010 10	7218422 (Z179632) A155979	BRWN SAND SILT FILL 0002 BRWN SAND SILT GRVL 0005 BRWN SAND FSND DNSE 0022
SCUGOG TOWNSHIP (REA	17 661201 4884515 W	2016-08 1413	6.25	FR 0092	/80/8/1:	CO	0088 4	7272367 (Z233777) A188955	BRWN SAND PCKD 0015 GREY CLAY SOFT 0075 GREY SAND CLAY FGRD 0084 GREY SAND CLN FGRD 0092
SCUGOG TOWNSHIP (REA	17 661333 4885151 W	2012-04 7241	1.25			MT	0004 5	7181286 (Z148470) A125665	BRWN LOAM SAND SOFT 0004 GREY SILT CLAY SILT 0009
SCUGOG TOWNSHIP (REA	17 661402 4885138 W	2012-04 7241	1.25			MT	0004 10	7181285 (Z148471) A129225	BRWN LOAM SAND SOFT 0004 GREY SILT SAND CLAY 0014
SCUGOG TOWNSHIP (REA	17 662135 4884965 W	2011-12 7241	1.5			MT	0005 10	7174320 (Z143313) A122387 A	BRWN SAND GRVL LOOS 0000 BRWN SILT CLAY LOOS 0010 GREY SILT CLAY LOOS 0015
SCUGOG TOWNSHIP (REA	17 662189 4884998 W	2011-12 7241	1.5			MT	0005 10	7174319 (Z143312) A116686	
SCUGOG TOWNSHIP (REA	17 662112 4885034 W	2011-12 7241	1.5			MT	0005 10	7174317 (Z143315) A118775	

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA	17 661653 4885554 W	2009-08 7241	20			MO	0010 5	7127960 (Z102325) A089148	BRWN LOAM 0005 GREY CLAY WBRG 0015
SCUGOG TOWNSHIP (REA	17 663847 4886357 W	2011-09 7303						7169552 (M02322) P	
SCUGOG TOWNSHIP (REA	17 663858 4886334 W	2011-09 7303						7169551 (M02323) P	
SCUGOG TOWNSHIP (REA	17 661689 4885609 W	2009-08 7241	2			MO	0010 5	7127961 (Z102324) A089149	BRWN LOAM 0003 BRWN SAND 0010 GREY CLAY 0015
SCUGOG TOWNSHIP (REA	17 661638 4885581 W	2009-08 7241	2			MO	0010 5	7127959 (Z102323) A089150	BRWN LOAM 0005 GREY CLAY WBRG 0015
SCUGOG TOWNSHIP (REA	17 663091 4884319 W	2005-09 6607	2.00				0011 14	1918201 (Z35416) A031708	BRWN SILT GRVL 0015 BRWN GRVL SAND 0020 GREY SILT SAND WBRG 0025
SCUGOG TOWNSHIP (REA	17 663231 4884446 W	2005-06 5459						1917656 (Z22462) A022230 A	
SCUGOG TOWNSHIP (REA	17 662184 4885065 W	2011-12 7241	1.5			MT	0005 10	7174318 (Z143314) A122386	BRWN SAND GRVL LOOS 0000 BRWN SILT CLAY LOOS 0010 GREY SILT CLAY LOOS 0015
SCUGOG TOWNSHIP (REA	17 662332 4884365 W	2019-10 7247						7366848 (C47142) A275274 P	
SCUGOG TOWNSHIP (REA	17 661940 4885077 W	2021-05 7215						7407202 (C52082) A317331 P	
SCUGOG TOWNSHIP (REA	17 661396 4885231 W	2021-10 7464						7410607 (C54202) A328764 P	
SCUGOG TOWNSHIP (REA	17 663038 4886565 W	2021-12 6988						7414193 (Z356072) A P	
SCUGOG TOWNSHIP (REA	17 662912 4886166 W	2021-12 6988						7414194 (Z356071) A P	
SCUGOG TOWNSHIP (REA	17 663596 4885683 W	2021-12 7230						7417836 (Z376779) A320682 P	
SCUGOG TOWNSHIP (REA	17 663953 4886482 W	2020-11 7610			///:			7376760 (Z347107) A	
SCUGOG TOWNSHIP (REA	17 663459 4885771 W	2021-09 7644						7402351 (Z373998) A322131 P	

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA	17 661985 4885034 W	2019-09 7247	2	UT 0008	///:	MT	0010 5	7355739 (Z317740) A275283	LOAM 0001 BRWN FILL SILT SAND 0007 GREY TILL SAND SILT 0015
SCUGOG TOWNSHIP (REA	17 663947 4886458 W	2020-06 7464						7365969 (C47494) A292287 P	
SCUGOG TOWNSHIP (REA	17 661658 4885484 W	2009-08 7241	2				0010 5	7127958 (Z102174) A088964	BRWN LOAM 0005 GREY CLAY WBRG 0015
SCUGOG TOWNSHIP (REA	17 663966 4886498 W	2020-11 7610			///:			7376759 (Z347108) A	
SCUGOG TOWNSHIP (REA 05 015	17 662803 4886411 W	2007-03 5459				NU		7043575 (Z56450) A051003 A	GREY CLAY 0057 BRWN SAND 0068 GREY CLAY SILT 0189 GREY SILT GRVL 0192 GREY CLAY 0342
SCUGOG TOWNSHIP (REA 06	17 662070 4885491 W	2008-05 1413	6.25	FR 0258	5/100/15/1:	IN		7108816 (Z92756) A060346	BRWN SAND PCKD 0017 GREY CLAY DNSE 0050 GREY STNS CLAY CMTD 0058 SILT GREY CLAY DNSE 0237 WHIT CLAY GRVL LYRD 0251 GREY LMSN HARD 0258
SCUGOG TOWNSHIP (REA 06 014	17 661930 4885181 W	2007-08 7067	6.26	FR 0253	10/69/10/1:	CO		7051766 (Z60001) A050583	BRWN CLAY SAND SOFT 0022 GREY CLAY GRVL STNS 0087 GREY CLAY SOFT 0111 GREY SILT LOOS 0124 GREY CLAY GRVL SOFT 0200 GREY CLAY GRVL HARD 0252 GREY LMSN HARD 0260
SCUGOG TOWNSHIP (REA CON 05 015	17 662847 4884121 W	2022-12 5459						7439281 (Z386890) A310955 P	
SCUGOG TOWNSHIP (REA CON 05 016	17 663045 4884244 W	3136	6	FR 0101	15/42/17/10:0	DO CO		1910993 (70329)	BRWN LOAM 0001 BRWN CLAY SNDS 0052 GREY CLAY SNDY 0101 GREY SAND MSND 0106
SCUGOG TOWNSHIP (REA CON 05 016	17 663120 4884254 W	1966-05 2104	6 6	FR 0231	175/222/6/4:0	ST DO	0231 4	4602218 ()	LOAM 0002 BRWN CLAY MSND GRVL 0020 GREY CLAY MSND GRVL 0075 GREY FSND CLAY 0110 GREY FSND 0160 GREY CLAY MSND 0230 BLCK CSND CLAY 0235 GREY CLAY STNS 0240
SCUGOG TOWNSHIP (REA CON 05 016	17 663365 4884608 W	1989-04 3129	30	FR 0025	18/26/8/1:0	DO		1909766 (54794)	LOAM 0001 BRWN CLAY STNS 0030 GREY CLAY 0039 BRWN CLAY GRVL 0048
SCUGOG TOWNSHIP (REA CON 05 016	17 662943 4884095 W	1958-10 2615	36	FR 0009	1///:	DO		4602217 ()	LOAM MSND 0003 GRVL MSND 0009 MSND 0018
SCUGOG TOWNSHIP (REA CON 05 016	17 663105 4884438 W	1956-01 2632	36	FR 0035	16///:	CO		4602215 ()	LOAM CLAY 0003 GREY CLAY STNS 0035 GRVL 0038 MSND 0040
SCUGOG TOWNSHIP (REA CON 05 016	17 663237 4884472 W	2005-06 5459	6	FR 0130	17//126/1:	DO	0126 4	1917649 (Z22453) A022205	BRWN SAND SOFT 0050 GREY GRVL SILT LOOS 0075 GREY SILT FSND SOFT 0125 GREY GRVL MSND LOOS 0130
SCUGOG TOWNSHIP (REA CON 05 016	17 663059 4884457 W	1993-09 3136	6	FR 0288 FR 0311	48/218/8/2:30	DO		1911793 (24150)	BRWN LOAM 0001 BRWN CLAY STNS 0027 GREY CLAY SOFT 0032 GREY CLAY SNDY 0050 GREY CLAY BLDR 0056 GREY CLAY GRVL HARD 0288 BRWN SAND PCKD 0290 BRWN SAND CSND HARD 0311 BRWN SAND DKCL MGRD 0314

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA CON 05 016	17 663266 4884555 W	2017-07 7437	2	0014		MO	0020 5	7306945 (Z259884) A227620	BRWN SAND SILT GRVL 0002 BRWN SAND SILT GRVL 0005 BRWN SAND SILT GRVL 0040
SCUGOG TOWNSHIP (REA CON 05 016	17 663117 4884259 W	2020-05 7560	6.25 6.25	UT 0173 UT 0240	35///:	DO	0231 4	7360093 (NB8NWXQ3) _NO_TAG A	
SCUGOG TOWNSHIP (REA CON 05 017	17 663656 4884637 W	2021-05 7386	40		///:			7390244 (Z261273) A228052 A	
SCUGOG TOWNSHIP (REA CON 05 017	17 663852 4884763 W	2021-09 7732	1.97	UT 0015	///:		0015 10	7400445 (75FKAKB7) A256424 A	
SCUGOG TOWNSHIP (REA CON 05 017	17 663383 4884638 W	1985-09 2214	30	FR 0012	12/27/7/:30	DO		1907431 ()	BLCK LOAM 0001 BRWN CLAY BLDR PCKD 0012 GREY CLAY SAND WBRG 0027
SCUGOG TOWNSHIP (REA CON 05 017	17 663935 4884126 W	2019-11 7444			///:			7347491 (Z324604) A217031 A	
SCUGOG TOWNSHIP (REA CON 05 017	17 663515 4884553 W	1970-04 1556	30	FR 0015 FR 0030	15/37/2/:	DO		4604380 ()	BLCK LOAM 0001 BRWN CLAY MSND 0010 GREY CLAY BLDR 0015 GREY CLAY BLDR MSND 0020 GREY CLAY BLDR 0030 GREY MSND GRVL 0034 GREY CLAY BLDR 0038
SCUGOG TOWNSHIP (REA CON 05 017	17 663852 4884763 W	2019-02 6988	2.00		///:	TH	0015 10	7347127 (Z279831) A256424	BRWN SAND SILT 0025
SCUGOG TOWNSHIP (REA CON 06 001	17 661069 4884220 W	2005-06 2214	24 18	FR 0042	0/13/5/3:0	DO		1917595 (Z29590) A027590	BLCK LOAM 0009 BRWN SAND 0025 BLUE CLAY 0038 GREY SAND 0042
SCUGOG TOWNSHIP (REA CON 06 013	17 661370 4884119 W	1991-04 2214	6	FR	0/8/5/2:0	CO	0062 4	1911163 (44605)	BLCK LOAM 0001 BRWN CLAY 0020 BRWN SAND WBRG 0025 GREY CLAY 0060 GREY SAND WBRG FSND 0065 GRVL WBRG FSND 0070
SCUGOG TOWNSHIP (REA CON 06 013	17 661318 4884375 W	2009-10 7067	6.26	FR 0144	-6/-1/33/1:0	CO		7139788 (Z107417) A067910	BRWN SAND 0009 GREY CLAY SAND SOFT 0046 GREY SILT LOOS 0107 GREY CLAY SILT LYRD 0144 GREY SAND GRVL WBRG 0150
SCUGOG TOWNSHIP (REA CON 06 013	17 661427 4884061 W	2023-04 7360	2		///:	MO	0005 10	7444428 (5BW6JUMM) A377486	FILL 0005 GREY CLAY 0020 GRVL 0030
SCUGOG TOWNSHIP (REA CON 06 013	17 661328 4884477 W	1990-10 2214	6	MN GS	0/122/5/1:0	CO		1910887 (44653)	BRWN CLAY SAND WBRG 0012 BLUE CLAY SAND LYRD 0060 GRVL WBRG 0061 GREY CLAY SAND LYRD 0094 GREY CLAY SAND WBRG 0095 GREY CLAY STNS 0187 GREY SILT WBRG 0217 GREY SAND WBRG 0224
SCUGOG TOWNSHIP (REA CON 06 013	17 661428 4884104 W	2023-04 7360	2	UT 0002	///:	MO	0030 10	7443785 (27PJZ8X4) A378734	ROCK 0002 CLAY SLTY 0010 CLAY 0020 SAND ROCK 0040

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA CON 06 013	17 661415 4884189 W	2022-03 7360	2	UT 0004	///:	MO	0005 10	7416201 (TK7A7GYC) A326044	CLAY SLTY 0015
SCUGOG TOWNSHIP (REA CON 06 013	17 661430 4884161 W	2023-04 7360	2	UT 0007	///:	MO	0005 10	7444429 (KOERSZCM) A377506	LOAM 0001 SAND GRVL 0003 SAND 0015
SCUGOG TOWNSHIP (REA CON 06 013	17 661428 4884205 W	2022-12 5459						7439278 (Z386894) A310974 P	
SCUGOG TOWNSHIP (REA CON 06 013	17 661134 4884140 W	1947-04 2801	5					4602229 () A	LOAM CLAY 0004 CLAY FSND BLDR 0027 CLAY FSND 0045 CLAY 0050
SCUGOG TOWNSHIP (REA CON 06 013	17 661399 4884154 W	2023-04 7360	2	UT 0012	///:	MO	0010 10	7444313 (RLQNSUVQ) A377487	FILL 0005 SAND 0010 GREY CLAY SOFT 0030
SCUGOG TOWNSHIP (REA CON 06 013	17 661094 4884701 L	2000-05 2662						1914587 (216557) A	BLCK LOAM 0001 BRWN SAND GRVL 0005 GREY SAND SLTY WBRG 0012 GREY CLAY SAND GRVL 0035 GREY CLAY SLTY 0064 GREY CLAY GRVL 0080 GREY CLAY HARD 0086 GREY CLAY SAND GRVL 0093 GREY SAND GRVL SILT 0095 GREY CLAY GRVL 0098
SCUGOG TOWNSHIP (REA CON 06 013	17 661211 4884635 W	1991-06 2104	6	UK 0247	0/200/13/4:0	CO		1911102 (098392)	BRWN LOAM MGRD 0002 BRWN CLAY MGRD 0018 GREY CLAY MGRD 0070 GREY SAND SLTY WBRG 0071 GREY CLAY MGRD 0190 GREN CLAY GRVL MGRD 0224 GREN SAND SLTY WBRG 0228 WHIT CLAY GRVL HARD 0245 BRWN LMSN WBRG HARD 0247
SCUGOG TOWNSHIP (REA CON 06 013	17 661094 4884701 L	2000-03 2662	6	FR 0248	-1/26/5/10:	DO		1914586 (207368)	BLCK LOAM 0001 BRWN CLAY SNDY 0019 GREY CLAY 0089 GREY SAND GRVL WBRG 0090 GREY CLAY 0098 GREY CLAY SILT 0130 GREY HPAN 0203 GREY CLAY SILT 0235 GREY GRVL CLAY SILT 0248 BLCK SHLE WBRG 0248
SCUGOG TOWNSHIP (REA CON 06 013	17 661390 4884243 W	2022-03 7360	2	UT 0004	///:	MO	0005 10	7416200 (JNQOJ4MM) A326043	CLAY SLTY 0015
SCUGOG TOWNSHIP (REA CON 06 013	17 661094 4884701 L	2000-04 2662	6	FR 0076	-2/65/2/6:		0072 4	1914588 (216534)	BRWN CLAY SNDY FILL 0001 BLCK LOAM 0002 BRWN SAND GRVL WBRG 0009 GREY CLAY SOFT 0048 GREY CLAY GRVL 0060 GREY CLAY CLAY GRVL 0071 BRWN FSND SILT GRVL 0076
SCUGOG TOWNSHIP (REA CON 06 013	17 661094 4884701 L	2000-05 2662	6 12	UK 0089	/65/2/6:		0082 8	1914589 (216558)	BLCK LOAM 0001 BRWN SAND GRVL 0005 GREY SAND SLTY WBRG 0012 GREY CLAY SAND 0033 GREY CLAY SLTY 0062 GREY CLAY GRVL 0084 GREY SAND GRVL CLAY 0089 GREY CLAY GRVL 0092
SCUGOG TOWNSHIP (REA CON 06 013	17 661465 4884088 W	1991-04 2214	6	FR 0114	0/74/5/1:0	CO	0111 4	1911165 (44604)	BRWN LOAM 0001 BRWN CLAY 0020 BRWN SAND WBRG 0028 GREY CLAY STKY 0060 GREY SAND CLAY 0082 BRWN SAND CLAY FGRD 0100 BRWN SAND FSND 0114 GRVL WBRG 0119
SCUGOG TOWNSHIP (REA CON 06 013	17 661329 4884163 W	2022-03 7360	2	UT 0004	///:	MO	0005 10	7416199 (TUXPKPLN) A326042	CLAY SLTY 0015

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA CON 06 014	17 661895 4885515 W	1999-11 3136	6	FR 0182 FR 0208 FR 0242	2/180/6/1:30	IN CO		1914314 (208372)	BRWN SAND GRVL 0005 GREY CLAY SOFT 0037 GREY CLAY SAND HARD 0182 BRWN FSND 0184 GREY CLAY SOFT 0208 BRWN MSND 0211 GREY CLAY GRVL 0230 BRWN CGVL SAND 0245
SCUGOG TOWNSHIP (REA CON 06 014	17 662175 4885125 W	1990-04 2662	6	FR 0248	8/240/5/3:15	DO		1910571 (25992)	BRWN LOAM 0002 GREY CLAY SLTY 0028 GREY CLAY SAND 0075 GREY CLAY 0242 BRWN SAND GRVL 0248
SCUGOG TOWNSHIP (REA CON 06 014	17 661265 4885500 W	1990-11 3129	30	FR 0005	5//8/1:0	DO		1910902 (71788)	GRVL 0001 SAND CLAY 0005 GREY QSND 0008 BLUE CLAY 0026
SCUGOG TOWNSHIP (REA CON 06 014	17 661608 4884106 W	1998-08 3136	6	FR 0030 FR 0062	3/27/17/48:0	CO	0079 8	1913784 (178703)	GREY CLAY SOFT 0012 GREY CLAY STNS 0030 GREY SAND 0031 GREY CLAY GRVL 0062 BRWN FSND 0083 GREY GRVL SAND CGRD 0087
SCUGOG TOWNSHIP (REA CON 06 014	17 661365 4885423 W	1979-01 1845	6 4	FR 0061 MN 0103 MN 0259	/240/1/2:0	DO		1905681 ()	BLCK LOAM 0001 BRWN SAND 0023 CLAY SILT 0061 GREY FSND SILT STNS 0103 BLCK CLAY HARD 0105 GREY CLAY STNS HARD 0170 BLCK CLAY SAND PCKD 0174 GREY SNDS CLAY HARD 0238 GREY CLAY SHLE HARD 0243 BLCK SHLE HARD 0268
SCUGOG TOWNSHIP (REA CON 06 014	17 661608 4884106 W	1998-08 3136				NU		1913785 (178739) A	
SCUGOG TOWNSHIP (REA CON 06 014	17 662089 4884963 W	1999-02 3136	6	FR 0078	15/84/8/1:30	DO		1914009 (181014)	BLCK LOAM 0001 BRWN SAND CLAY 0009 GREY CLAY STNS 0031 GREY SAND CLAY 0038 GREY CLAY SOFT 0099 GREY SAND CLAY 0103
SCUGOG TOWNSHIP (REA CON 06 014	17 662089 4884963 W	1999-10 3136	6	FR 0046 FR 0054	5/50/4/2:	CO		1914315 (208385)	BRWN SAND 0010 GREY CLAY PCKD STKY 0023 GREY GRVL CLAY HARD 0044 GREY GRVL HARD 0056
SCUGOG TOWNSHIP (REA CON 06 014	17 662008 4885571 W	1999-07 3136	6	FR 0076	5/77/4/2:	DO IN	0077 5	1914157 (208341)	BRWN SAND 0013 GREY CLAY 0030 GREY CLAY STNS HARD 0076 GREY CLAY FSND SOFT 0082 GREY CLAY SOFT 0082
SCUGOG TOWNSHIP (REA CON 06 014	17 661642 4884884 L	2001-07 2214	24 18	FR 0032 FR 0038	17/30/3/1:30	CO		1915285 (207717)	GREY GRVL 0001 BRWN SAND 0010 GREY CLAY 0020 BLUE CLAY 0032 SAND FGVL WBRG 0033 BLUE CLAY STNS 0038 SAND WBRG 0039 GREY CLAY 0042
SCUGOG TOWNSHIP (REA CON 06 014	17 661642 4884884 L	2002-01 6874	30	FR 0024	1/24/25/2:0	DO		1915552 (229291)	UNKN CMTD 0010 BRWN SAND 0024
SCUGOG TOWNSHIP (REA CON 06 014	17 661963 4885201 W	2006-05 7067	6.26	FR 0253	8/145/7/1:	CO		1918321 (Z43531) A039161	BRWN SAND FILL LOOS 0009 BRWN CLAY SAND SOFT 0016 GREY CLAY GRVL SOFT 0046 GREY SILT GRVL LOOS 0063 GREY CLAY GRVL HARD 0090 GREY CLAY GRVL SOFT 0172 GREY CLAY GRVL SOFT 0223 GREY CLAY HARD 0251 GREY LMSN GRVL HARD 0254
SCUGOG TOWNSHIP (REA CON 06 014	17 661642 4884884 L	2001-09 2214	24 18	FR 0030 FR 0040	15/25/5/1:30	CO	0040 3	1915419 (207720)	BLCK LOAM 0001 BRWN SAND 0010 GREY CLAY 0030 BLCK SAND WBRG 0031 GREY CLAY 0040 BLCK SAND GRVL WBRG 0042
SCUGOG TOWNSHIP (REA CON 06 014	17 662007 4885134 W	2005-11 7067	6.26	FR 0258	22/43/9/5:	CO		1917966 (Z22973) A022702	BRWN SAND GRVL FILL 0008 BRWN CLAY SAND SOFT 0015 GREY CLAY GRVL SOFT 0050 GREY SILT GRVL SOFT 0060 GREY CLAY GRVL SILT 0255 GREY LMSN HARD 0261
SCUGOG TOWNSHIP (REA CON 06 014	17 661642 4884884 L	2001-10 3136						1915379 (234016) A	
SCUGOG TOWNSHIP (REA CON 06 014	17 661365 4885423 W	1979-07 2214	30	FR 0010	10/22/6/0:30	DO		1905559 ()	LOAM 0001 BRWN CLAY STNS PCKD 0010 SAND LOOS 0011 BLUE CLAY STNS PCKD 0025

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA CON 06 014	17 661345 4885305 W	1996-07 4743	6	FR 0120	4/110/3/3:30	CO	0124 4	1912916 (163533)	BRWN SAND FILL 0008 BRWN CLAY 0024 BRWN CLAY SAND 0026 BLUE CLAY STNS 0096 GREY BLDR HARD 0104 BRWN CLAY 0120 BRWN SAND VERY 0128
SCUGOG TOWNSHIP (REA CON 06 014	17 661988 4884955 W	2007-01 2214	24 18	FR 0032	4/19/10/1:30	CO		7128584 (Z45648) A041077	BLCK LOAM 0001 BRWN CLAY SNDY 0012 BLUE CLAY 0032 SAND 0036
SCUGOG TOWNSHIP (REA CON 06 014	17 661407 4885091 W	1987-08 2214	30	FR 0005	5/12/4/1:0	IN		1908760 (NA)	BRWN SAND PCKD 0005 BRWN SAND WBRG 0012
SCUGOG TOWNSHIP (REA CON 06 014	17 661354 4884357 W	2021-07 5459	6	UT 0063	/2/7/1:0	DO	0057 6	7394267 (Z353013) A231173	GREY CLAY STNS SOFT 0037 GREY CLAY SILT HARD 0057 GREY GRVL SAND LOOS 0063
SCUGOG TOWNSHIP (REA CON 06 014	17 661233 4884617 W	2009-03 7067	6.26 6.26	FR 0244	-2/141/10/2:30	IN		7121055 (Z90937) A060017	BRWN CLAY SAND SOFT 0014 GREY CLAY SAND SOFT 0057 GREY CLAY GRVL HARD 0074 GREY CLAY SILT LYRD 0111 GREY CLAY GRVL HARD 0157 GREY GRVL CLAY HARD 0243 GREY LMSN HARD 0248
SCUGOG TOWNSHIP (REA CON 06 014	17 661418 4885439 W	2012-04 7241	1.25			MT	0004 5	7181283 (Z148469) A125664	BRWN LOAM SAND SOFT 0004 GREY SILT CLAY SAND 0009
SCUGOG TOWNSHIP (REA CON 06 014	17 661319 4885378 W	1985-12 2214	30	UK 0034	7/7/7/0:0	DO		1907562 ()	BRWN SAND LOOS 0006 GREY CLAY SAND LYRD 0012 BLUE CLAY 0034 GREY SAND WBRG LOOS 0035
SCUGOG TOWNSHIP (REA CON 06 014	17 661404 4885569 W	1989-04 2662	6	FR 0075	1/75/8/3:0	DO	0076 4	1909799 (45865)	BRWN MUCK 0014 BRWN CLAY GRVL 0020 GREY CLAY 0075 GREY SAND 0080
SCUGOG TOWNSHIP (REA CON 06 014	17 661307 4885361 W	1987-06 2214	30	FR 0008 FR 0030	8/11/7/1:0	IN		1908494 (09873)	BLCK LOAM PCKD 0002 BRWN SAND WBRG 0008 BLUE CLAY SOFT 0030 GREY SAND WBRG 0033
SCUGOG TOWNSHIP (REA CON 06 014	17 661359 4885081 W	1986-04 1847	30	FR 0008	6///:	CO		1907659 ()	GRVL 0001 LOAM 0002 BRWN SAND 0008 GREY CLAY 0027
SCUGOG TOWNSHIP (REA CON 06 014	17 661403 4885481 W	1973-12 2214	30	FR 0009	9/15/5/1:0	DO		4605662 ()	BRWN CLAY 0009 BRWN SAND 0018
SCUGOG TOWNSHIP (REA CON 06 014	17 661282 4885518 W	1984-07 3129	30	FR 0023	20/34/7/1:0	CO		1906976 ()	LOAM 0001 CLAY SNDY 0018 CSND 0023 BLUE CLAY WBRG 0036
SCUGOG TOWNSHIP (REA CON 06 015	17 662333 4884968 W	1994-06 4743	6	FR 0278	30/120/15/2:30	IN		1911997 (144966)	BRWN CLAY FILL 0005 BLCK LOAM 0007 BRWN LOAM 0027 BRWN CLAY STNS 0045 BLUE CLAY STNS 0116 GREY SILT CLAY 0117 BLUE CLAY STKY 0185 BLUE CLAY STNS 0235 BLUE CLAY SOFT STKY 0268 GREY CLAY GRVL LYRD 0273 BRWN SNDS HARD 0278 BRWN SNDS PORS 0280
SCUGOG TOWNSHIP (REA CON 06 015	17 662196 4884998 W	2012-04 7241	1.25			MT	0005 10	7181095 (Z148253) A125732	BRWN FILL 0004 BRWN SAND SILT 0010 GREY CLAY SILT 0015
SCUGOG TOWNSHIP (REA CON 06 015	17 662210 4885070 L	2000-12 5459	6	FR 0104	20/90/3/2:	IN	0108 3	1914895 (211786)	BRWN SAND FILL 0006 BRWN CLAY STNY 0012 BRWN CLAY SLTY 0058 GREY CLAY STNY HARD 0082 GREY CLAY SNDY 0089 GREY SAND SILT 0092 GREY FSND 0109 GREY FSND 0111 GREY CLAY STNY 0111

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA CON 06 015	17 662210 4885070 L	2000-08 2214	24 18	FR 0022	4/7/5/1:45	IN	0025 2	1914784 (207706)	BLCK LOAM 0001 BRWN CLAY 0015 BLUE CLAY STNS 0022 SAND GRVL 0023 GREY CLAY STNS 0027
SCUGOG TOWNSHIP (REA CON 06 015	17 662210 4885070 L	2000-08 2214	24 18	FR 0021	4/13/5/1:30	IN	0024 2	1914653 (207703)	BLCK LOAM 0001 BRWN CLAY 0016 BLUE CLAY STNS 0021 GRVL 0022 GREY CLAY STNS 0026
SCUGOG TOWNSHIP (REA CON 06 015	17 662136 4884960 W	2012-04 7241	1.25			MT	0005 10	7181094 (Z148252) A125733	BRWN FILL 0004 BRWN SAND SILT 0010 GREY CLAY SILT 0015
SCUGOG TOWNSHIP (REA CON 06 015	17 662092 4885010 W	2012-04 7241	1.25			MT	0005 10	7181096 (Z148255) A129253	BRWN FILL 0005 BRWN SAND SILT 0010 GREY CLAY SILT 0015
SCUGOG TOWNSHIP (REA CON 06 015	17 662106 4885250 W	2015-08 7241	1.5			MT	0003 7	7249177 (Z207298) A164687	BRWN SAND SILT LOOS 0010
SCUGOG TOWNSHIP (REA CON 06 015	17 662111 4884960 W	2012-04 7241	1.25			MT	0005 10	7181093 (Z148254) A125734	BRWN FILL CMTD 0006 BRWN SAND SILT 0010 GREY CLAY SILT 0015
SCUGOG TOWNSHIP (REA CON 06 015	17 662113 4885110 W	2012-04 7492	36	UT 0006 UT 0011 UT 0026	///:	DO		7182274 (Z141797) A125201	BRWN LOAM 0001 BRWN SAND 0009 GREY SAND 0011 GREY CLAY 0026 GREY CLAY SAND ROCK 0030
SCUGOG TOWNSHIP (REA CON 06 015	17 662100 4885265 W	2015-08 7241	1.25			MT	0010 10	7247092 (Z216463) A186365	BRWN SAND 0006 GREY SILT SAND CLAY 0020
SCUGOG TOWNSHIP (REA CON 06 015	17 661350 4885040 W	2013-06 7455						7204111 (Z115804) A150340 A	
SCUGOG TOWNSHIP (REA CON 06 015	17 661289 4885538 W	1999-05 2214	24 18	FR 0030 FR 0040	12/30/10/2:30	DO		1914050 (193775)	BRWN SAND 0005 GREY CLAY 0030 SAND GRVL WBRG 0031 GREY CLAY STNS 0040 GRVL WBRG FGVL 0042
SCUGOG TOWNSHIP (REA CON 06 015	17 662104 4885265 W	2015-08 7241	1.25			MT	0010 10	7247090 (Z216461) A186549	BRWN SAND 0006 GREY SILT SAND CLAY 0020
SCUGOG TOWNSHIP (REA CON 06 015	17 661895 4885515 W	1996-10 4743	6	FR 0274	/160/10/2:30	DO		1913016 (163537)	BLCK LOAM 0001 BRWN CLAY FILL 0005 BLUE CLAY SOFT 0045 BLUE CLAY STNS UNKN 0090 BLUE CLAY SILT LYRD 0175 BLUE CLAY TILL FILL 0240 GREY UNKN HARD 0243 RED CLAY STNS 0245 BRWN LMSN HARD 0274 BRWN LMSN SHLE 0282 BRWN LMSN HARD 0284
SCUGOG TOWNSHIP (REA CON 06 015	17 662088 4885286 W	2015-08 7241	1.25			MT	0010 10	7247093 (Z216464) A186688	BRWN SAND 0006 GREY SILT SAND CLAY 0020
SCUGOG TOWNSHIP (REA CON 06 015	17 661957 4885050 W	2022-08 7732	1.97		///:		0010 10	7427678 (VQ9OASQB) _NO_TAG A	
SCUGOG TOWNSHIP (REA CON 06 015	17 662015 4885241 W	1990-01 1413	6	FR 0292	/230/50/2:0	IN		1910375 (70862)	BRWN CLAY STNS HARD 0008 GREY CLAY SAND SOFT 0049 GREY CLAY STNS HARD 0117 GREY SAND FSND 0125 GREY CLAY STNS DNSE 0254 GREY LMSN HARD 0292

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA CON 06 015	17 662101 4885243 W	2015-08 7241	1.25			MT	0010 10	7247091 (Z216462) A186541	BRWN SAND 0006 GREY SILT SAND CLAY 0020
SCUGOG TOWNSHIP (REA CON 06 015	17 662548 4884991 W	2008-07 5459	6	GS 0273	84/240/12/1:0	DO	0207 66	7110064 (Z81665) A075006	BRWN FILL HARD 0008 BRWN SAND GRVL SILT 0017 GREY CLAY SILT STNS 0030 GREY CLAY STNS DNSE 0262 GREY SAND GRVL SILT 0273
SCUGOG TOWNSHIP (REA CON 06 015	17 662414 4884883 W	1989-12 1910	6	FR 0285	4/65/30/15:0	IN	0275 10	1910320 (73031)	BRWN SAND FILL 0004 GREY CLAY 0107 BRWN QSND 0127 GREY CLAY 0198 BRWN QSND 0237 GREY CLAY 0263 BRWN SAND 0285
SCUGOG TOWNSHIP (REA CON 06 015	17 662104 4885102 W	1989-08 2662	6	FR 0122	4/20/5/1:30	DO	0110 3	1910116 (68255)	BRWN GRVL FILL 0006 BRWN CLAY 0015 GREY CLAY 0040 GREY GRVL CLAY 0115 BRWN SAND 0122
SCUGOG TOWNSHIP (REA CON 06 015	17 662045 4885183 W	2015-09 2662	6.25 6	UT 0260	19/29/12/4:	DO		7256931 (Z216241) A178424	GREY SAND GRVL FILL 0004 BRWN CLAY GRVL 0013 GREY CLAY 0043 GREY CLAY GRVL SILT 0079 GREY CLAY GRVL 0254 GREY LMSN 0267
SCUGOG TOWNSHIP (REA CON 06 015	17 661927 4885074 W	2022-08 7732	1.97		///:		0010 10	7427679 (WNV5CPTD) _NO_TAG A	
SCUGOG TOWNSHIP (REA CON 06 015	17 662080 4885276 W	2015-08 7241	1.5			MT	0003 7	7249178 (Z207297) A164686	BRWN SAND SILT LOOS 0010
SCUGOG TOWNSHIP (REA CON 06 015	17 662500 4885017 W	1991-04 2104	6	FR 0113	8/113/6/3:0	CO	0008 8	1911047 (098611)	BRWN CLAY MGRD 0018 GREY CLAY MGRD 0113 GREY FSND WBRG MGRD 0120
SCUGOG TOWNSHIP (REA CON 06 015	17 662447 4885073 W	2009-08 2214	24 18	FR 0023 FR 0038	5/10/5/2:30	CO		7134482 (Z80263) A070351	BLCK LOAM 0002 BRWN FILL 0005 BRWN CLAY STNS 0020 BRWN SAND GRVL 0023 BLUE CLAY SOFT 0025 GREY CLAY 0038 BLCK SAND CGRD 0039 GREY CLAY DNSE 0041
SCUGOG TOWNSHIP (REA CON 06 015	17 662009 4884994 W	2010-07 5459	6	GS 0264	11/18/15/1:0	IN		7148844 (Z115853) A102788	BRWN SAND SOFT 0015 GREY CLAY SOFT LYRD 0254 GREY SHLE LMSN LYRD 0264
SCUGOG TOWNSHIP (REA CON 06 015	17 661997 4885094 W	2022-08 7732	1.97		///:		0010 10	7427677 (KTZSLTPT) _NO_TAG A	
SCUGOG TOWNSHIP (REA CON 06 015	17 662210 4885070 L	2003-08 1455	6	FR 0090	19/68/5/2:0	DO		1916941 (256095)	BRWN LOAM 0002 BRWN CLAY 0012 GREY CLAY 0070 BRWN FSND SILT 0086 BRWN CSND 0090
SCUGOG TOWNSHIP (REA CON 06 015	17 662595 4884473 W	1970-02 2104	6	FR 0045	30/54/3/2:30	ST DO	0042 15	4604376 ()	BLCK LOAM 0002 BRWN CLAY MSND 0020 BRWN FSND 0045 BRWN CSND CLAY GRVL 0050 BRWN CLAY MSND 0057
SCUGOG TOWNSHIP (REA CON 06 015	17 662210 4885070 L	2003-11 2214	36 30	FR 0018 FR 0036	18/43/5/2:30	IN		1916854 (263723)	BLCK LOAM 0001 BRWN CLAY STNS 0018 BRWN SAND WBRG 0021 GREY CLAY 0036 SAND GRVL WBRG 0038 GREY CLAY STNS 0045
SCUGOG TOWNSHIP (REA CON 06 015	17 662209 4885070 L	2002-07 1413	6	FR 0258	2/120/20/1:0	DO		1916016 (241544)	BRWN CLAY SOFT 0025 GREY CLAY STNS SOFT 0063 GREY CLAY DNSE 0233 GREY LMSN SHLE HARD 0258
SCUGOG TOWNSHIP (REA CON 06 015	17 661974 4885112 W	2022-08 7732	1.97		///:		0010 10	7427680 (I4H88FJR) _NO_TAG A	

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA CON 06 016	17 662863 4884613 W	1955-11 2801	2		9/16/10/7:30	NU		4602232 () A	LOAM 0001 BRWN CLAY 0003 BRWN CLAY GRVL BLDR 0018 GRVL MSND BLDR 0029 FSND 0032 GRVL MSND BLDR 0045 BLUE CLAY MSND GRVL 0085 BLUE CLAY MSND 0091 BLUE CLAY MSND GRVL 0297
SCUGOG TOWNSHIP (REA CON 06 016	17 662715 4885873 W	1978-12 4867	36	FR 0008	1/6/3/1:0	DO		1905186 ()	BLCK LOAM SNDY SOFT 0001 BRWN CLAY STNS SNDY 0008 GREY GRVL STNS WBRG 0013
SCUGOG TOWNSHIP (REA CON 06 016	17 662817 4885945 W	1986-01 5459	6	FR 0284	30/275/3/1:30	DO	0184 3	1908196 (NA)	LOAM 0002 BRWN CLAY 0011 GREY CLAY STNY 0070 GREY CLAY 0095 GREY CLAY STNY 0125 GREY CLAY 0163 SAND FSND DRTY 0166 GREY CLAY STNY 0185 GREY CLAY 0230 GREY CLAY STNY 0284 SAND FSND 0290
SCUGOG TOWNSHIP (REA CON 06 016	17 662870 4884570 W	1955-11 2801	6					4602231 () A	LOAM 0001 BRWN CLAY GRVL 0004 BRWN CLAY BLDR GRVL 0008 GRVL BLDR MSND 0028 FSND 0035 BLUE CLAY MSND GRVL 0057 MSND GRVL CLAY 0085 MSND GRVL 0087 BLDR 0088
SCUGOG TOWNSHIP (REA CON 06 016	17 662774 4884637 W	1955-12 2801	5					4602233 ()	LOAM 0002 YLLW CLAY BLDR 0018 CLAY GRVL 0030 GRVL MSND CLAY 0039 GRVL CLAY 0044 CLAY HPAN 0060 CLAY GRVL 0081 HPAN 0085 CLAY MSND GRVL 0092 MSND GRVL 0098 BLUE CLAY 0109
SCUGOG TOWNSHIP (REA CON 06 016	17 663191 4884930 W	1956-01 2801	5					4602234 ()	LOAM 0002 CLAY MSND 0005 GRVL MSND BLDR 0008 MSND GRVL CLAY 0069 BLUE CLAY 0091 BLUE CLAY 0111 GREY CLAY 0164
SCUGOG TOWNSHIP (REA CON 06 016	17 662696 4885914 W	1956-01 2801	5					4602235 ()	LOAM 0002 YLLW CLAY BLDR 0007 GREY CLAY BLDR 0016 GREY CLAY 0034 MSND GRVL 0040 GREY CLAY 0071 GREY CLAY 0133 BLUE CLAY 0178
SCUGOG TOWNSHIP (REA CON 06 016	17 663745 4885007 W	2011-05 7067	36		///:	DO		7163364 (Z123347) A	
SCUGOG TOWNSHIP (REA CON 06 016	17 662981 4884718 W	1947-05 2801	5					4602230 () A	CLAY MSND 0005 CLAY 0030 MSND GRVL BLDR 0040 CLAY GRVL BLDR 0076
SCUGOG TOWNSHIP (REA CON 06 017	17 663267 4886100 W	2018-06 7644	2			TH MO	0010 10	7326329 (Z275650) A245196	
SCUGOG TOWNSHIP (REA CON 06 017	17 663617 4885504 W	2018-03 7067	36		6///:	NU		7308345 (Z277112) A	
SCUGOG TOWNSHIP (REA CON 06 017	17 663835 4884839 W	2021-09 7732	1.97	UT 0015	///:		0020 5	7400446 (L4AQGJSL) A262880 A	
SCUGOG TOWNSHIP (REA CON 06 018	17 663746 4885793 W	7147						7288258 (C35724) A107316 P	
SCUGOG TOWNSHIP (REA CON 06 018	17 663587 4885528 W	2016-11 7067	30		7///:	DO NU		7275807 (Z234099) A	
SCUGOG TOWNSHIP (REA CON 06 018	17 663987 4885701 W	2020-09 7067	36 36		///:	DO NU		7380409 (Z347068) A	

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
SCUGOG TOWNSHIP (REA CON 06 018	17 663865 4885823 W	1976-11 2104	6	FR 0053	15/45/6/3:0	DO		4606659 ()	BRWN FILL SOFT 0002 BRWN SAND CLAY PCKD 0010 BRWN SAND STNS LOOS 0020 GREY SAND CLAY STNS 0052 BRWN SAND GRVL WBRG 0053
SCUGOG TOWNSHIP (REA CON 06 04	17 661363 4884270 W	2020-01 1413	6.25 5.5 5.5	FR 0093	/74/5/1:	DO CO	0084 9	7355913 (Z314445) A271491	BRWN GRVL PCKD 0001 BRWN SAND PCKD 0005 GREY CLAY HARD 0070 BRWN SAND CLAY SILT 0079 BRWN SAND FSND 0097 BRWN SAND SILT CLAY 0115 GREY CLAY HARD 0115
SCUGOG TOWNSHIP (REA CON 07 014	17 661174 4886236 L	2002-05 4743	30	FR 0023	3/19/3/1:0	IR		1916194 (246935)	BRWN CLAY LOAM 0007 BRWN CLAY SAND LYRD 0015 BLUE CLAY 0023 BLUE SAND CLAY LYRD 0024 BLUE CLAY LYRD HARD 0026
SCUGOG TOWNSHIP (REA CON 07 014	17 661175 4886236 L	2002-05 4743	30	FR 0022	4/20/4/1:0	IN		1915916 (246936)	BRWN CLAY LOAM 0008 BRWN CLAY LYRD 0017 BLUE UNKN 0022 BLUE CLAY SAND 0024 BLUE CLAY GRVL 0027
SCUGOG TOWNSHIP (REA CON 07 015	17 661915 4885813 W	1972-07 2518	6	FR 0227	0/30/20/4:20	DO		4605252 ()	BLCK LOAM 0002 GREY CLAY 0220 BRWN SAND GRVL 0227
SCUGOG TOWNSHIP (REA CON 07 015	17 661754 4886433 L	2003-03 4743	6	FR 0228	/60/10/1:30	DO CO	0228 4	1916382 (233384)	BRWN CLAY SAND FILL 0008 BLUE CLAY SILT MUCK 0044 BLUE CLAY STNS DNSE 0135 GREY CLAY SOFT STKY 0220 RED CLAY SOFT 0228 GREY GRVL SAND CLAY 0232
SCUGOG TOWNSHIP (REA CON 07 016	17 662327 4885967 W	2005-11 3367						1918013 (Z33034)	
SCUGOG TOWNSHIP (REA CON 07 016	17 662327 4885967 W	2005-02 3367	6.25	GS 0017 GS 0247	20/138/2/24:0	IN	0243 4	1917494 (Z24851) A015192	BRWN FILL PCKD 0003 BLCK MUCK SOFT 0017 GREY SAND GRVL PCKD 0023 GREY CLAY DNSE 0243 GREY CSND WBRG LOOS 0247
SCUGOG TOWNSHIP (REA CON 07 017	17 663227 4886157 W	1990-03 3129	30	FR 0015	10/17/8/1:0	DO		1910518 (71647)	LOAM 0001 SAND 0015 BLUE CLAY SOFT 0031
SCUGOG TOWNSHIP (REA CON 07 017	17 663085 4886121 W	2000-05 6874	24	FR 0013	//25/2:	DO		1914555 (213696)	BRWN GRVL SNDY 0001 UNKN CMTD 0010
SCUGOG TOWNSHIP (REA CON 07 019	17 664040 4886615 W	5459	6.25	0176	14/71/15/1:	DO	0170 6	7309734 (Z265553) A222230	GREY CLAY 0155 GREY CLAY STNS 0162 GREY SILT 0167 GREY SAND 0176
SCUGOG TOWNSHIP (REA CON 05 014	17 661711 4885614 W	2014-08 7067	6.25 6.11	FR 0245 UT	/65/5/1:	CO		7230386 (Z187307) A153275	BRWN CLAY SOFT 0011 GREY CLAY SOFT 0053 GREY CLAY SILT SAND 0237 GREY GRVL HPAN 0241 GREY LMSN ROCK 0256
SCUGOG TOWNSHIP (REA CON 05 014	17 661915 4885698 W	2014-12 7067	36 30		12///:	CO		7235696 (Z187332) A	
SCUGOG TOWNSHIP (SCU 001	17 661397 4884114 W	2006-02 1455	6.26	FR 0091	1/15/10/1:0	DO	0087 4	7042638 (Z36152) A032998	BRWN LOAM 0002 BRWN CLAY STNS 0024 GREY CLAY STNS 0088 BRWN SAND 0091
SCUGOG TOWNSHIP (SCU 05 016	17 663916 4884515 W	2007-12 5459			///:			7102250 (Z61077) A048254 A	
SCUGOG TOWNSHIP (SCU 05 016	17 663001 4884452 W	2008-01 5459			///:			7102251 (Z75611) A064991 A	

TOWNSHIP CON LOT UTM DATE CNTR CASING DIA WATER PUMP TEST WELL USE SCREEN WELL FORMATION

Notes:
UTM: UTM in Zone, Easting, Northing and Datum is NAD83; L: UTM estimated from Centroid of Lot; W: UTM not from Lot Centroid
DATE CNTR: Date Work Completedand Well Contractor Licence Number
CASING DIA: .Casing diameter in inches
WATER: Unit of Depth in Fee. See Table 4 for Meaning of Code
PUMP TEST: Static Water Level in Feet / Water Level After Pumping in Feet / Pump Test Rate in GPM / Pump Test Duration in Hour : Minutes
WELL USE: See Table 3 for Meaning of Code
SCREEN: Screen Depth and Length in feet
WELL: WEL (AUDIT #) Well Tag . A: Abandonment; P: Partial Data Entry Only
FORMATION: See Table 1 and 2 for Meaning of Code

1. Core Material and Descriptive terms

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

2. Core Color

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

3. Well Use

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

4. Water Detail

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

Ministry of the Environment

Ontario

The Ontario Water Resources Act

WATER WELL RECORD

31D/2

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

(11) 1905186

MUNICIP 19009 CON C6N 06

COUNTY OR DISTRICT: DURHAM

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: SCUGOG - PORT PERRY

CON., BLOCK, TRACT, SURVEY, ETC.: 6

LOT: 016

[redacted] R#1 PORTPERRY

DATE COMPLETED: DAY 15 MO 12 YR 78

UTM ZONE 17 | 385650 | RC 5 | ELEVATION 0900 | RC 5 | BASIN CODE 24

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
BLACK	TOP SOIL	SANDY	SOFT	0	1
BROWN	CLAY	SANDY + STONES	PACKED	1	8
GREY	GRAVEL	BIG STONES + WATER		8	13

(31) 0001 8028185 0008 6051281 0013 2111291

(32)

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0008	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

(51) CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
36	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☒ CONCRETE 4 ☐ OPEN HOLE	3	0	0013
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET	

(61) PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)

(71) PUMPING TEST

PUMPING TEST METHOD: 1 ☐ PUMP 2 ☒ BAILER

PUMPING RATE: 0003 GPM

DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING
001 FEET	006 + FEET

WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY

15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
002 FEET	003 FEET	004 FEET	005 FEET

IF FLOWING, GIVE RATE: GPM

PUMP INTAKE SET AT: 12½ FEET

WATER AT END OF TEST: 1 ☐ CLEAR 2 ☒ CLOUDY

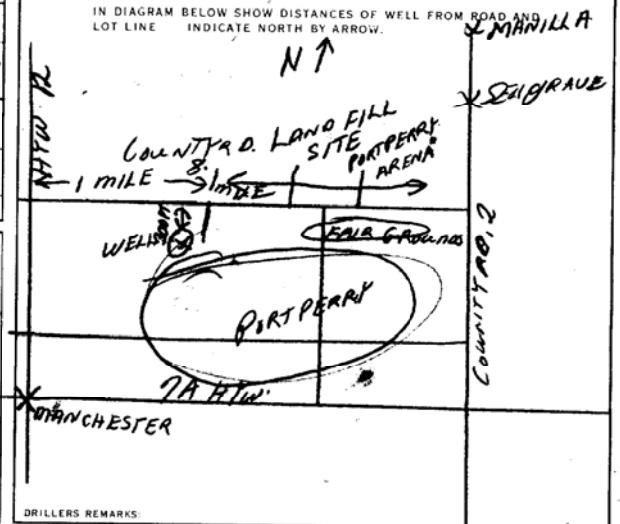
RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP

RECOMMENDED PUMP SETTING: FEET

RECOMMENDED PUMPING RATE: 0003 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL

☒ 1 WATER SUPPLY ☐ 2 OBSERVATION WELL ☐ 3 TEST HOLE ☐ 4 RECHARGE WELL ☐ 5 ABANDONED, INSUFFICIENT SUPPLY ☐ 6 ABANDONED, POOR QUALITY ☐ 7 UNFINISHED

WATER USE 01

☒ 1 DOMESTIC ☐ 2 STOCK ☐ 3 IRRIGATION ☐ 4 INDUSTRIAL ☐ OTHER ☐ 5 COMMERCIAL ☐ 6 MUNICIPAL ☐ 7 PUBLIC SUPPLY ☐ 8 COOLING OR AIR CONDITIONING ☐ 9 NOT USED

METHOD OF DRILLING 6

☐ 1 CABLE TOOL ☐ 2 ROTARY (CONVENTIONAL) ☐ 3 ROTARY (REVERSE) ☐ 4 ROTARY (AIR) ☐ 5 AIR PERCUSSION ☒ 6 BORING ☐ 7 DIAMOND ☐ 8 JETTING ☐ 9 DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: WAYNE STEPHENSON WELL DIGGING — LICENCE NUMBER: 4867

ADDRESS: RR#1 BETHANY ONT.

NAME OF DRILLER OR BORER — LICENCE NUMBER

SIGNATURE OF CONTRACTOR: Wayne Stephenson — SUBMISSION DATE: DAY 15 MO 12 YR 78

OFFICE USE ONLY

DATA SOURCE: 1 — CONTRACTOR: 4867 — DATE RECEIVED: 20127[illegible]

DATE OF INSPECTION — INSPECTOR

REMARKS: CSS

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506-4-77

UTM 17 Z 616216+81 E
5 R 4818156+11 N
Elev. 6 R
Con 24
Basin
Lot 16

ONTARIO

RECEIVED
APR - 5 1956
GEOLOGICAL BRANCH
DEPARTMENT of MINES

46 No. 2235

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Ontario Township, Village, Town or City Reach Twp.
[redacted] Village, Town or City)
ddress Port Perry

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 5½" diam Rotary
Length(s)
Type of screen None
Length of screen

Pumping Test

Static level
Pumping rate None
Pumping level
Duration of test

TEST Well Log #2-56.

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
Top soil	0'	2'			
Yellow clay & boulders	2'	7'			
Grey clay & boulders	7'	16'			
Soft grey clay	16'	34'			
Hard packed dry sand & gravel	34'	40'			
Hard grey clay	40'	71'			
Soft sandy grey clay	71'	92'			
Hard grey clay	92'	133'			
Hard blue clay	133'	178'			

For what purpose(s) is the water to be used?

Is water clear or cloudy?
Is well on upland, in valley, or on hillside?

Drilling firm International Water Supply
Address 12 Maitland St
London Ont
Name of Driller Howard Peterman
Address 9 Colley St
Newmarket Ont
Licence Number 1054

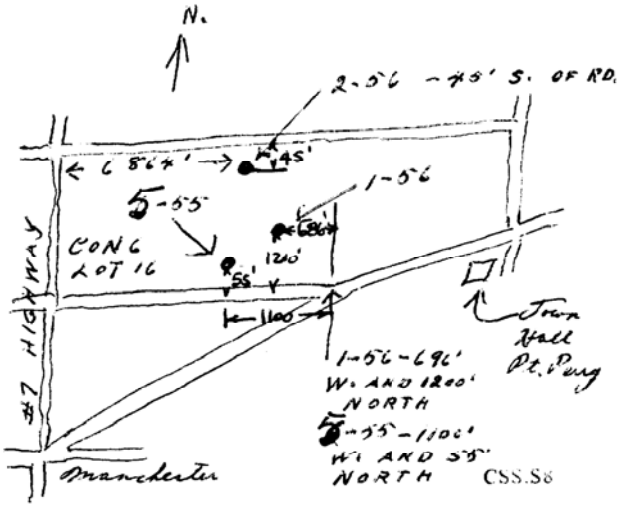
I certify that the foregoing statements of fact are true.

Date Feb 16/56 Howard Peterman
Signature of Licensee

BW

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



Form 5

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 1908196

COUNTY OR DISTRICT: DURHAM
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: ~~ONTARIO~~ Durham (REACH) Scugog
CON., BLOCK, TRACT, SURVEY, ETC.: Con 6
LOT: 16
[redacted] Port Perry 1580 Reach St
DATE COMPLETED: DAY 14 MO 01 YR 86
RC: 18 5 7 2 2
ELEVATION: 0 2 7 3
RC:
BASIN CODE:

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
	Top Soil			0	2
Brown	Clay			2	11
Grey	Clay	Stoney		11	70
Grey	Clay			70	95
"	"	Stoney		95	125
Grey	Clay			125	163
	Sand		Very Fine Particles	163	166
Grey	~~Stony~~ Clay	Stoney		166	185
Grey	Clay			185	230
Grey	Clay	Stoney		230	284
	Sand		Fine	284	290

31
32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
284	1 ☒ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6¼	1 ☒ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☐ OPEN HOLE	188	0	284
	1 ☐ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☐ OPEN HOLE			
	1 ☐ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.): 1-#12, 1-#14
DIAMETER: 6 INCHES
LENGTH: 5ft FEET
MATERIAL AND TYPE: SS
DEPTH TO TOP OF SCREEN: 184 FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

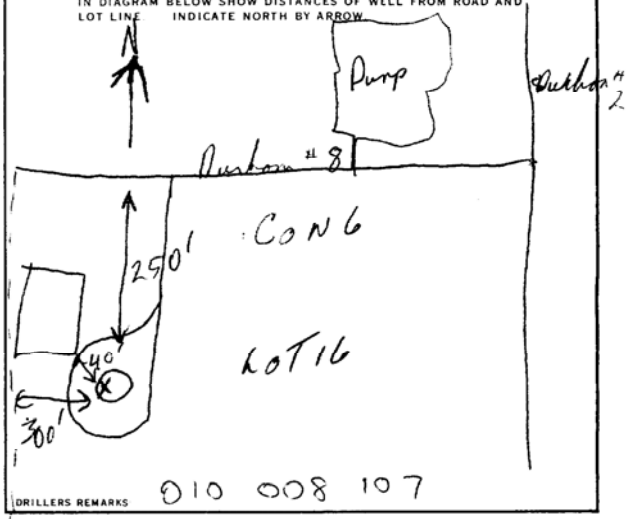
PUMPING TEST METHOD: 1 ☐ PUMP 2 ☒ BAILER
PUMPING RATE: 3 GPM
DURATION OF PUMPING: 1 HOURS 50 MINS
STATIC LEVEL: 30 FEET
WATER LEVEL END OF PUMPING: 275 FEET
WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY

15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
275 FEET	275 FEET	275 FEET	275 FEET

IF FLOWING, GIVE RATE: GPM
PUMP INTAKE SET AT: FEET
WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY
RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP
RECOMMENDED PUMP SETTING: 280 FEET
RECOMMENDED PUMPING RATE: 3 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS: 010 008 107

FINAL STATUS OF WELL

1 ☒ WATER SUPPLY 5 ☐ ABANDONED, INSUFFICIENT SUPPLY
2 ☐ OBSERVATION WELL 6 ☐ ABANDONED, POOR QUALITY
3 ☐ TEST HOLE 7 ☐ UNFINISHED
4 ☐ RECHARGE WELL

WATER USE

1 ☒ DOMESTIC 5 ☐ COMMERCIAL
2 ☐ STOCK 6 ☐ MUNICIPAL
3 ☐ IRRIGATION 7 ☐ PUBLIC SUPPLY
4 ☐ INDUSTRIAL 8 ☐ COOLING OR AIR CONDITIONING
☐ OTHER 9 ☐ NOT USED

METHOD OF DRILLING

1 ☒ CABLE TOOL 6 ☐ BORING
2 ☐ ROTARY (CONVENTIONAL) 7 ☐ DIAMOND
3 ☐ ROTARY (REVERSE) 8 ☐ JETTING
4 ☐ ROTARY (AIR) 9 ☐ DRIVING
5 ☐ AIR PERCUSSION

5459

CONTRACTOR

NAME OF WELL CONTRACTOR: Wilson Water Wells LTD
LICENCE NUMBER: 5454
ADDRESS: R.R.#4 Stouffville Ont
NAME OF DRILLER OR BORER:
LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: William Wilson
SUBMISSION DATE: DAY ____ MO. ____ YR. ____

OFFICE USE ONLY

DATA SOURCE:
CONTRACTOR:
DATE RECEIVED: 020487
DATE OF INSPECTION:
INSPECTOR:
REMARKS:

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506—4—77 FORM 7

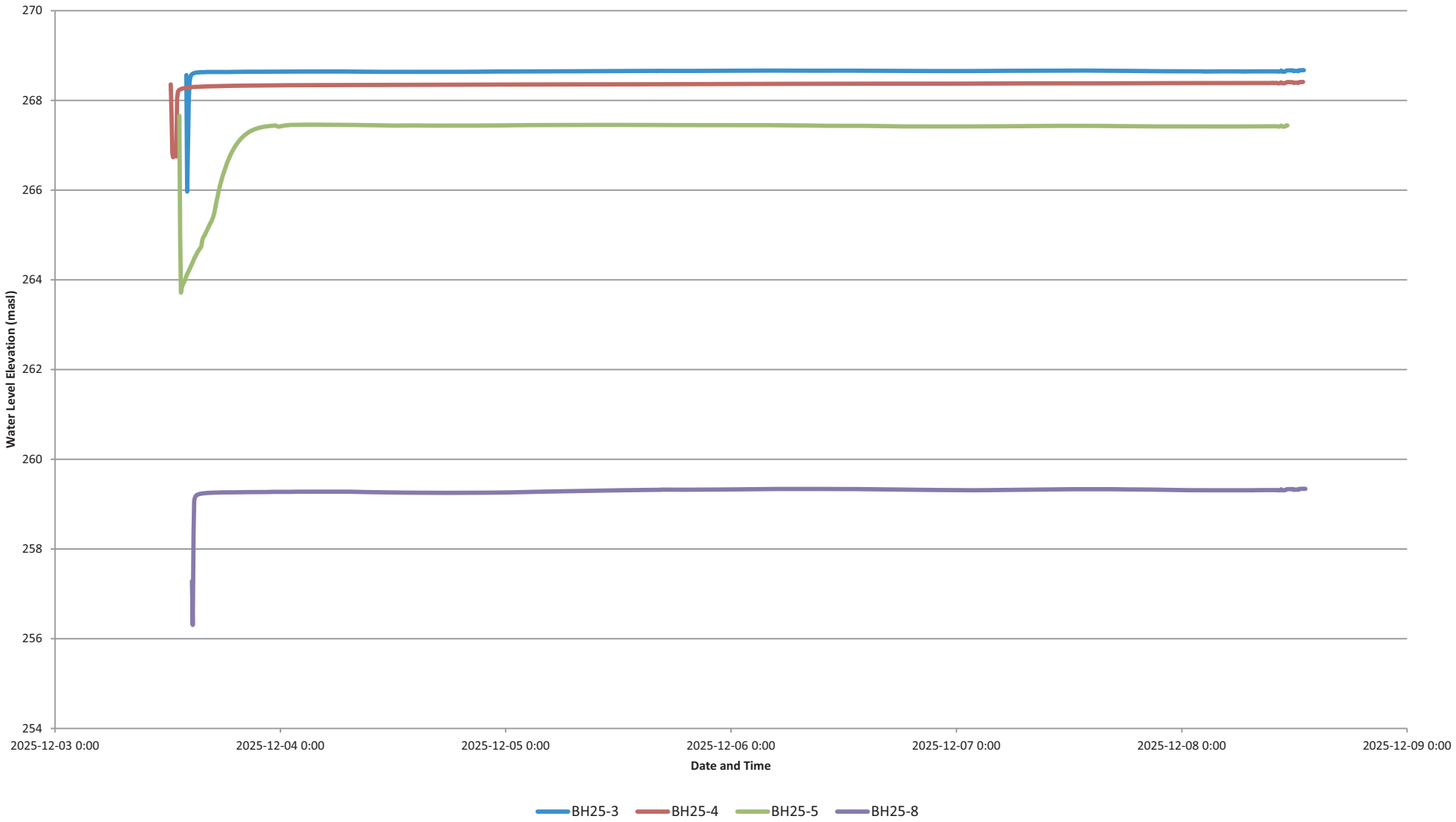
Appendix J

Water Level Summary and Hydrographs

Water Level Summary

Location ID	Completed As	Easting	Northing	LiDAR Elevation	SKA Grade	Proposed Grade	SKA Cut/Fill	Well Depth	Well Depth Elevation	Stick-up	Stick-up Elevation	December 3, 2025 Water Levels			December 17, 2025 Water Levels			Notes
		(m)	(m)	(masl)	(masl)	(masl)	(m)	(mbgs)	(masl)	(m)	(masl)	(mbtoc)	(mbgs)	(masl)	(mbtoc)	(mbgs)	(masl)	
BH25-1	Monitoring Well	662740	4885369	281.63	281.20	274.69	-6.51	9.41	272.22	0.92	282.55	6.57	5.65	275.98	6.52	5.60	276.03	
BH25-2	Borehole	662611	4885549	276.66	276.50	272.04	-4.46											
BH25-3	Monitoring Well	662492	4885790	270.63	270.75	270.72	-0.03	5.77	264.86	1.08	271.71	3.07	1.99	268.64	3.00	1.92	268.71	
BH25-4	Monitoring Well	662815	4885707	272.35	272.00	269.69	-2.31	5.99	266.36	0.89	273.24	4.89	4.00	268.35	4.83	3.94	268.41	
BH25-5	Monitoring Well	662814	4885942	268.57	268.50			6.25	262.32	0.93	269.50	2.00	1.07	267.50	2.04	1.11	267.47	
BH25-6	Borehole	662939	4885528	264.74	264.50	268.21	3.71											
BH25-7	Monitoring Well	662258	4885271	260.00	260.00	263.50	3.50	5.69	254.32	0.88	260.88	4.72	3.84	256.16	2.60	1.72	258.28	
BH25-8	Monitoring Well	662343	4885503	260.44	260.50	262.50	2.00	5.87	254.58	0.90	261.34	2.07	1.18	259.27	1.80	0.90	259.54	
BH25-9	Borehole	662078	4885656	257.39	257.50													
BH25-10	Borehole	662790	4885698	274.46	274.00	270.66	-3.34											
MW-1	Historical Monitoring Well	662022	4885723	256.08	256.10			7.67	248.41	0.75	256.83	0.99	0.24	255.85	0.84	0.09	255.99	
MW-2	Historical Monitoring Well	662023	4885705	255.99	255.90			19.48	236.51	0.77	256.76	1.25	0.48	255.51	1.05	0.28	255.71	
MW-3	Historical Monitoring Well	662006	4885705	255.99	255.70			7.43	248.56	0.75	256.74	1.03	0.28	255.71	0.98	0.23	255.76	
MW-4	Historical Monitoring Well	662004	4885713	256.07	255.90			7.37	248.70	0.79	256.86	1.43	0.64	255.43	1.27	0.48	255.59	
HA25-1	Manual Borehole	662633	4885313	276.89				0.50	276.39									
HA25-2	Manual Borehole	662714	4885295	281.44				0.48	280.96									
HA25-3	Manual Borehole	662431	4885716	266.75	267.00	268.35	1.35	0.69	266.06									
HA25-4	Manual Borehole	662432	4885711	267.13	267.25	268.35	1.10	0.38	266.75									
HA25-5	Manual Borehole	662433	4885668	265.55	265.70	266.91	1.21	0.77	264.78									
HA25-6	Manual Borehole	662295	4885687	260.90	261.10	264.82	3.72	0.53	260.37									
HA25-7	Manual Borehole	663031	4885370	263.83	264.25	266.66	2.41	1.22	262.61									
HA25-8	Manual Borehole	663050	4885344	262.92	263.50			1.22	261.70									
HA25-9	Manual Borehole	662363	4885223	262.66	262.60			0.53	262.13									
HA25-10	Manual Borehole	662870	4885479	268.09	267.90	271.40	3.50	0.76	267.33									
HA25-11	Manual Borehole	662996	4885516	264.20	264.00	264.30	0.30	0.56	263.64									
HA25-12	Manual Borehole	662900	4885296	267.63	267.80			1.14	266.49									
HA25-13	Manual Borehole	662737	4885373	281.54				1.20	280.34									
HA25-14	Manual Borehole	662090	4885654	257.61				1.20	256.41									
HA25-15	Manual Borehole	662830	4885990	266.60				0.60	266.00									
T-1	Historical Test Pit	662021	4885704	256.07	256.10													
T-2	Historical Test Pit	662081	4885519	258.85	258.70													
T-3	Historical Test Pit	662144	4885328	258.90	258.75													
T-4	Historical Test Pit	662215	4885108	260.78	260.75													
T-5	Historical Test Pit	662443	4885161	264.42	264.60													
T-6	Historical Test Pit	662342	4885256	261.68	261.75													
T-7	Historical Test Pit	662298	4885454	260.20	260.20													
T-8	Historical Test Pit	662215	4885766	260.43	260.60													
T-9	Historical Test Pit	662407	4885832	265.61	265.60													
T-10	Historical Test Pit	662505	4885510	269.50	269.50	267.76	-1.74											
T-11	Historical Test Pit	662591	4885200	273.61	274.00													
T-12	Historical Test Pit	662759	4885271	279.87	280.00													
T-13	Historical Test Pit	662672	4885529	280.05	279.90													
T-14	Historical Test Pit	662581	4885728	272.47	272.50													
T-15	Historical Test Pit	662191	4885628	258.80	259.00													
Creek SE	Unnamed Tributary	663081	4885345	262.14	-									262.14			262.14	Opposite SE Corner of Property
Creek NE	Unnamed Tributary	663004	4886075	258.02	-									258.02			258.02	Just South of Reach St. Crossing

Compiled Long-term Hydrograph
December 3, 2025 to December 8, 2025



Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry

Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
25-3614	J
DATE: January 2026	

Appendix K

Groundwater Quality Data

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured. Proudly Canadian.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G132042 **REPORT No: 25-037705 - Rev. 0**

Report To:
Oakridge Environmental
PO Box 431
Peterborough, ON K9J 6Z3

CADUCEON Environmental Laboratories
285 Dalton Ave
Kingston, ON K7K 6Z1

Attention: Dan MacIntyre

DATE RECEIVED: 2025-Dec-09
DATE REPORTED: 2026-Jan-07
SAMPLE MATRIX: Ground Water

CUSTOMER PROJECT: Reach St
P.O. NUMBER: PO#25-3614

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Anions (Liquid)	2	OTTAWA	PCURIEL	2025-Dec-11	A-IC-01	SM 4110B
BOD5 (Liquid)	2	KINGSTON	DCASSIDY	2025-Dec-10	BOD-001	SM 5210B
Cond/pH/Alk Auto (Liquid)	2	OTTAWA	SBOUDREAU	2025-Dec-10	COND-02/PH-02/A LK-02	SM 2510B/4500H/ 2320B
Cyanide Total (Liquid)	2	KINGSTON	EHINCH	2025-Dec-10	CN-001	EPA 9012B
ICP/MS Total (Liquid)	2	OTTAWA	GFENTON	2025-Dec-11	D-ICPMS-01	EPA 6020
ICP/OES Total (Liquid)	2	OTTAWA	SGORMAN	2025-Dec-11	D-ICP-01	SM 3120B
Nonylphenols (Subcontracted)	2	SGS_LAKEFIELD	SWOOD	2025-Dec-12		Subcontracted
Oil & Grease (Liquid)	2	KINGSTON	TMCBRYDE	2025-Dec-11	O&G-001	SM 5520
PCB's (Liquid)	2	KINGSTON	CSUMMERHAYS	2025-Dec-11	PCB-001	EPA 8081
Phenols (Liquid)	2	KINGSTON	EHINCH	2025-Dec-15	PHEN-01	MECP E3179
SVOC - Semi-Volatiles (Liquid)	2	KINGSTON	KPARKER	2025-Dec-22	NAB-W-001	EPA 8270D
TP & TKN (Liquid)	2	KINGSTON	MWILSON	2025-Dec-11	TPTKN-001	MECP E3516.2
TSS (Liquid)	2	KINGSTON	MCLOSS	2025-Dec-10	TSS-001	SM 2540D
VOC-Volatiles Full (Water)	2	RICHMOND_HILL	JEVANS	2025-Dec-16	C-VOC-02	EPA 8260

R.L. = Reporting Limit
NC = Not Calculated
Test methods may be modified from specified reference method unless indicated by an *

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Data Specialist

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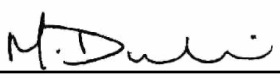
Parameter	Units	R.L.	Limits		Client I.D.	BH25-5	MW-1
					Sample I.D.	25-037705-1	25-037705-2
					Date Collected	2025-Dec-08	2025-Dec-08
						-	-
pH @25°C	pH units	-	10.5, 9.0	SAN, STORM		7.76	8.05
Fluoride	mg/L	0.1	10	SAN		0.1	0.1
Sulphate	mg/L	1	1500	SAN		17	1
BOD5	mg/L	3	300, 15	SAN, STORM		<3	<3
Total Suspended Solids	mg/L	3	350, 15	SAN, STORM		5	700
Phosphorus (Total)	mg/L	0.01	10, 0.4	SAN, STORM		0.10	0.40
Total Kjeldahl Nitrogen	mg/L	0.1	100, 1	SAN, STORM		0.4	0.5
Cyanide (Total)	mg/L	0.005				<0.005	<0.005
Phenolics	mg/L	0.001				<0.001	<0.001
Aluminum (Total)	mg/L	0.01	50	SAN		0.04	3.53
Manganese (Total)	mg/L	0.001	5, 0.15	SAN, STORM		0.037	0.163
Tin (Total)	mg/L	0.05	5	SAN		<0.05	<0.05
Titanium (Total)	mg/L	0.005	5	SAN		<0.005	0.174
Zinc (Total)	mg/L	0.005	2, 0.04	SAN, STORM		<0.005	0.022
Antimony (Total)	mg/L	0.0001	5	SAN		0.0004	0.0007
Arsenic (Total)	mg/L	0.0001	1, 0.02	SAN, STORM		0.0004	0.0014
Cadmium (Total)	mg/L	0.000015	0.7, 0.008	SAN, STORM		<0.000015	0.000052
Chromium (Total)	mg/L	0.001	2, 0.08	SAN, STORM		<0.001	0.005
Cobalt (Total)	mg/L	0.0001	5	SAN		0.0007	0.0027
Copper (Total)	mg/L	0.0001	3, 0.05	SAN, STORM		0.0012	0.0061
Lead (Total)	mg/L	0.00002	1, 0.12	SAN, STORM		0.00017	0.00337



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Parameter	Units	R.L.	Limits		Client I.D.	BH25-5	MW-1
					Sample I.D.	25-037705-1	25-037705-2
					Date Collected	2025-Dec-08	2025-Dec-08
						-	-
Molybdenum (Total)	mg/L	0.0001	5	SAN		0.0057	0.0008
Nickel (Total)	mg/L	0.0002	2, 0.08	SAN, STORM		0.0017	0.0050
Selenium (Total)	mg/L	0.001	1, 0.02	SAN, STORM		<0.001	<0.001
Silver (Total)	mg/L	0.0001	5, 0.12	SAN, STORM		<0.0001	<0.0001



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Parameter	Units	R.L.	Limits		Client I.D.	BH25-5	MW-1
					Sample I.D.	25-037705-1	25-037705-2
					Date Collected	2025-Dec-08	2025-Dec-08
						-	-
Benzene	mg/L	0.0005	0.01, 0.002	SAN, STORM		<0.0005	<0.0005
Chloroform	mg/L	0.001	0.04, 0.002	SAN, STORM		<0.001	<0.001
Dichlorobenzene,1,2-	mg/L	0.0005	0.05, 0.0056	SAN, STORM		<0.0005	<0.0005
Dichlorobenzene,1,4-	mg/L	0.0005	0.08, 0.0068	SAN, STORM		<0.0005	<0.0005
Dichloroethylene,1,2-cis-	mg/L	0.0005	4, 0.0056	SAN, STORM		<0.0005	<0.0005
Dichloropropene,1,3-trans-	mg/L	0.0005	0.14, 0.0056	SAN, STORM		<0.0005	<0.0005
Ethylbenzene	mg/L	0.0005	0.16, 0.002	SAN, STORM		<0.0005	<0.0005
Dichloromethane (Methylene Chloride)	mg/L	0.005	2, 0.0052	SAN, STORM		<0.005	<0.005
Methyl Ethyl Ketone	mg/L	0.002	8	SAN		<0.002	<0.002
Styrene	mg/L	0.0005	0.2	SAN		<0.0005	<0.0005
Tetrachloroethane,1,1,2,2-	mg/L	0.0005	1.4, 0.017	SAN, STORM		<0.0005	<0.0005
Tetrachloroethylene	mg/L	0.0005	1, 0.0044	SAN, STORM		0.0018	<0.0005
Toluene	mg/L	0.0005	0.27, 0.002	SAN, STORM		**0.0447**	<0.0005
Trichloroethylene	mg/L	0.0005	0.4, 0.008	SAN, STORM		<0.0005	<0.0005
Xylene, m,p-	µg/L	1				1	<1
Xylene, m,p,o- (Calculated)	mg/L	0.0011	1.4, 0.0044	SAN, STORM		0.0017	<0.0011
Xylene, o-	µg/L	0.5				<0.5	<0.5
Oil and Grease (Mineral)	mg/L	1.0	15	SAN		<1.0	<1.0
Oil and Grease (Anim/Veg) (Calculated)	mg/L	1.0	150	SAN		2.1	2.2

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Parameter	Units	R.L.	Limits		Client I.D.	BH25-5	MW-1
					Sample I.D.	25-037705-1	25-037705-2
					Date Collected	2025-Dec-08	2025-Dec-08
						-	-
Bis(2-ethylhexyl) Phthalate	mg/L	0.005	0.012, 0.0088	SAN, STORM		<0.005	<0.005
Dichlorobenzene,1,2-	µg/L	0.1				<0.1	<0.1
Dichlorobenzene,1,4-	µg/L	0.067				<0.07	<0.07

Parameter	Units	R.L.	Limits		Client I.D.	BH25-5	MW-1
					Sample I.D.	25-037705-1	25-037705-2
					Date Collected	2025-Dec-08	2025-Dec-08
						-	-
Poly-Chlorinated Biphenyls (PCB's) (Calculated)	mg/L	0.00005	0.001, 0.0004	SAN, STORM		<0.00005	<0.00005

Subcontracted Analyses

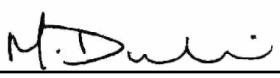
Parameter	Units	R.L.	Limits		Client I.D.	BH25-5	MW-1
					Sample I.D.	25-037705-1	25-037705-2
					Date Collected	2025-Dec-08	2025-Dec-08
						-	-
Nonylphenol Monoethoxylate	µg/L	-				<80	<10
Nonylphenol Diethoxylate	µg/L	-				<80	<10
Nonylphenols	mg/L	-	0.02	SAN		<0.01	<0.001
Nonylphenol Ethoxylates	mg/L	-	0.2	SAN		<0.08	<0.01

: Region of Durham Sewer Use By Law
SAN: Sanitary Sewer By Law
STORM: Storm Sewer By Law

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Summary of Exceedances		
Sanitary Sewer By Law		
MW-1	**Found Value**	**Limit**
Total Suspended Solids	700	350
Storm Sewer By Law		
BH25-5	**Found Value**	**Limit**
Toluene	0.0447	0.002
MW-1	**Found Value**	**Limit**
Total Suspended Solids	700	15
Manganese (Total)	0.163	0.15



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CADUCEON ENVIRONMENTAL LABORATORIES
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G132055 **REPORT No: 26-003285 - Rev. 0**

Report To:
Oakridge Environmental
PO Box 431
Peterborough, ON K9J 6Z3

CADUCEON Environmental Laboratories
285 Dalton Ave
Kingston, ON K7K 6Z1

Attention: Dan MacIntyre

DATE RECEIVED: 2026-Feb-05
DATE REPORTED: 2026-Feb-09
SAMPLE MATRIX: Ground Water

CUSTOMER PROJECT: Reach
P.O. NUMBER: PO#25-3614

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
VOC-Volatiles Full (Water)	1	RICHMOND_HILL	CBURKE	2026-Feb-07	C-VOC-02	EPA 8260

R.L. = Reporting Limit
NC = Not Calculated
Test methods may be modified from specified reference method unless indicated by an *

				Client I.D.	BH25-5
				Sample I.D.	26-003285-1
				Date Collected	2026-Feb-04
Parameter	**Units**	**R.L.**	**Limits**	**Reg 153 - Liquid**	-
Tetrachloroethylene	µg/L	0.5	0.5	T1GW	<0.5
Toluene	µg/L	0.5	0.8	T1GW	<0.5
Xylene, m,p-	µg/L	1			<1
Xylene, m,p,o- (Calculated)	µg/L	1.1	72	T1GW	<1.1
Xylene, o-	µg/L	0.5			<0.5

Reg 153 - Liquid: Reg 153 - Liquid
T1GW: R153 Tbl. 1 - GW

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Appendix L

Example Dewatering Guidelines

TRCA Technical Guidelines for the Development of Environmental Management Plans for Dewatering
September 2013

Rationale:

The *Technical Guidelines for the Development of Environmental Management Plans for Dewatering* applies to a wide range of projects with a requirement for dewatering related to groundwater control, which could result in impacts to environmental receptors, including fish and fish habitat, forests and wetlands. The scale and scope of the Environmental Management Plan (EMP) is directly dependent upon the scale and scope of the potential environmental impact(s). Where appropriate, a commitment within an Environmental Assessment (EA) to undertake an EMP can facilitate TRCA support for the EA. Following the *Technical Guidelines for the Development of Environmental Management Plans for Dewatering* can then assist the proponent in obtaining approval under the programs and policies of the *Conservation Authorities Act*, including *Ontario Regulation 166/06*, and under the *Fisheries Act* or the *Planning Act*, as appropriate. Through the review process, TRCA will advise the proponent as early as possible whether or not an EMP is required.

As appropriate, approval of the EMP will be a condition of *Fisheries Act* approval based on the Level 3 Agreement between TRCA and Fisheries and Oceans Canada (DFO). Should the EMP require construction of supporting infrastructure a TRCA permit or permits under *Ontario Regulation 166/06* may also be required.

The EMP guidelines are as follows:

- Step I:Undertaking Detailed Desktop Studies/Preliminary Risk Screening
- Step II: Undertaking Detailed Studies/Evaluating the Need for an EMP
- Step III: Developing the EMP

The intent of these guidelines is to manage project level temporary dewatering. In cases where permanent dewatering is proposed, please contact TRCA to discuss. Following these guidelines does not preclude nor imply any approvals required by any existing laws and regulations, including landowner consents.

Potential Environmental Receptors and Impacts

The following potential environmental receptors and impacts form the basis of TRCA's review under *Ontario Regulation 166/06* and the *Fisheries Act*:

- Impacts to fish and fish habitat that could be caused through reduced groundwater inputs, including reduced baseflow or reduced groundwater upwellings to spawning habitats, or through impaired water quality or changes to the thermal regime.
- Impacts to fish and fish habitat that could be caused through the disposal of dewatering effluent and construction discharge including changes to in-stream volume and velocity

causing erosion, impaired water quality and changes to the thermal regime and fish passage.
- Impacts to forests and wetlands that could be caused through reduced groundwater input including reduction in standing water, loss of soil moisture, impacts to vegetation community, loss or impairment of amphibians or wetland dependent birds or their habitat. This should be done on a seasonal or monthly basis, as appropriate.
- Impacts to forests and wetlands that could be caused through the disposal of dewatering effluent and construction discharge including changes in vegetation community composition, thermal impacts to wildlife and erosion that may affect vegetation health or wildlife habitat or cause erosion.
- Impacts to the ground surface stability of stream channels, stream banks or wetlands that could be caused through dewatering

Step I: Undertaking Desktop Studies/Preliminary Risk Screening

Step I is a desktop analysis of the potential environmental receptors and impacts discussed above. It is intended as a preliminary evaluation of the need for an EMP. This should be undertaken in consultation with TRCA. The detailed requirements of the Step I evaluation of the need for an EMP are outlined in the following tasks in increasing levels of information. If it becomes clear at any point that an EMP is not appropriate, contact TRCA for confirmation.

1. Undertake a desktop hydrogeological study:

    1.1 Gather existing data on groundwater levels, quality, and stratigraphy and soil conditions.
    1.2 Assess the estimated dewatering volumes.
    1.3 Undertake a desktop analysis to estimate for each technology the size of the predicted Zone of Influence (ZOI) and predict the potential impact on baseflow or groundwater upwellings.
    1.4 Assess innovative construction techniques through the use of background data, studies, tests and maps.
    1.5 Identify data gaps in the baseline information.

2. Undertake a desktop Natural Heritage Evaluation of the environmental receptors that may be affected by dewatering:

    2.1 Identify the environmental receptors within the estimated ZOI or downstream of the discharge, which could be affected through the project dewatering.
    2.2 Gather and evaluate existing data, including historic data, for all environmental receptors.
    2.3 Identify data gaps in the baseline information.

3. Integrate hydrogeological and natural heritage data to identify potential impacts. Identify the potential mechanisms of impact.

4. Undertake an analysis of the likelihood and significance of impacts to each environmental receptor to determine whether to proceed to Step II as per Figure 1: EMP Decision Matrix. The matrix is a conceptual aid. The likelihood of impact is based on probability where low is unlikely (less than 10%), medium is possible (10% to less than 50%) and high is more likely than not (50% or greater). Figure 2 provides some factors that could be considered when evaluating the significance of impact. The relative weighting of factors is at the discretion of the proponent, in consultation with TRCA and other agencies, as required.

Figure 1

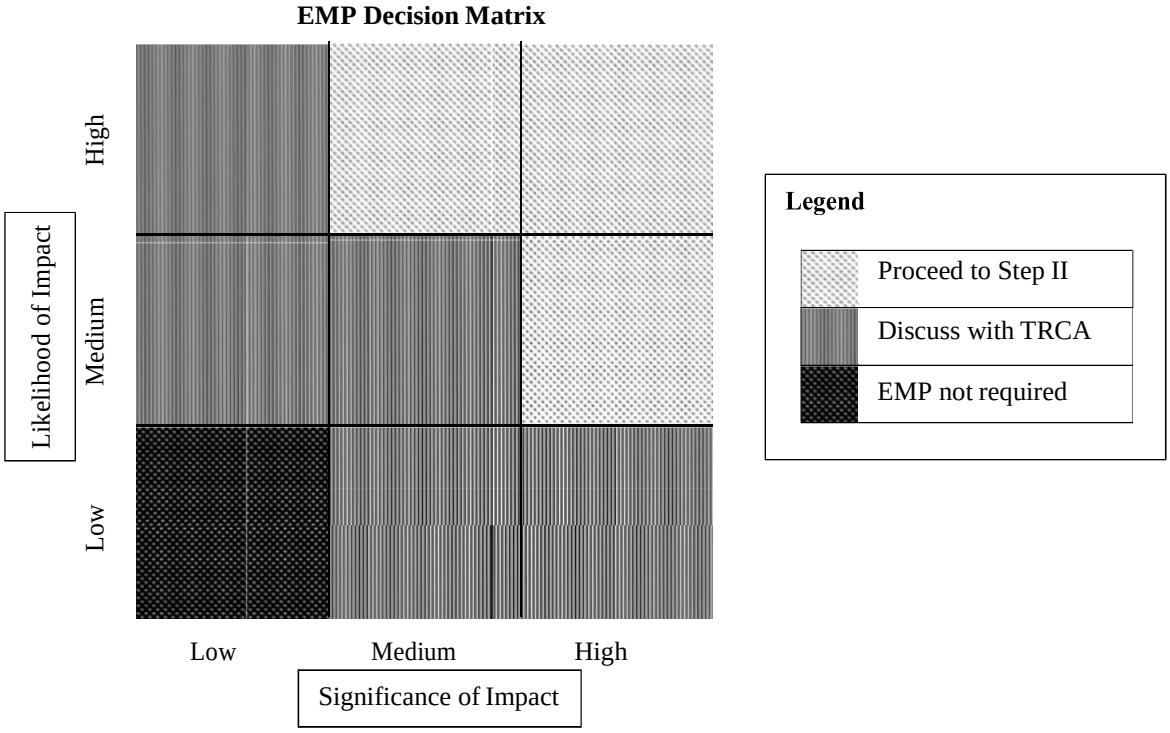


Figure 2 **Factors in the Determination of the Significance of Impact**

		Significance of Impact		
		Low	**Medium**	**High**
Factor	Endangered species	Not present		Species or recovery habitat present
	Tolerance of species	Tolerant		Sensitive
	Duration	<1 month	1 month to 1 year	>1 year
	Dewatering discharge volumes relative to baseflow	Low as compared to baseflow (<10%)	Medium as compared to baseflow (10% to 30%)	High as compared to baseflow (>30%)
	Scale	Affects small area (<0.1ha)	Affects medium area (0.1ha to 1.0ha)	Affects large area (>1.0ha)
	Proximity of discharge to watercourse or wetland	Discharge to sanitary sewer	Discharge to storm sewer	Discharge to watercourse or wetland
	Timing	Works outside breeding or nesting periods		Works within breeding or nesting periods

Step II: Undertaking Detailed Studies/Evaluating the Need for an EMP

Step II involves detailed studies undertaken in consultation with TRCA staff. These studies will form the basis of the EMP and may be either a separate document or included in the appendices of the EMP.

1. Complete hydrogeologic and natural environment baseline conditions analysis to fill in the data gaps identified in Step I. Please note that baseline monitoring for the EMP should be undertaken for an appropriate length of time prior to any groundwater removals. Please also note that to complete studies in the field, such as a borehole investigation, approvals in accordance with *Ontario Regulation 166/06* or the *Fisheries Act* may be required.

2. Refine the Predicted Zone of Influence:

    2.1 Develop the minimum and maximum rates and duration for dewatering, including rates less than 50,000 litres per day, for all sources of pumping.
    2.2 Use field studies to develop a predicted ZOI for each aquifer that will be withdrawn.
    2.3 Address the cumulative impacts from all groundwater withdrawals and leakages between aquifers for the ZOI estimation.

3. Confirm the construction technologies and undertake a preliminary assessment of mitigation measures based on the results of the baseline monitoring program.

4. Based on the construction technologies and refined ZOI, confirm the environmental receptors and potential environmental impacts identified in Step I.

5. Determine the sensitivities and significance of the flora, fauna and hydrology for each environmental receptor. Consider vegetation community composition, amphibian habitat, wetland dependant birds, fish species dependent upon groundwater upwellings or specific temperatures for spawning (e.g., Brook Trout, Redside Dace), wetland water levels, baseflow, stream flow, velocities, stream geomorphology, and erosion thresholds in the context of duration and season.

6. Update the EMP decision matrix through an analysis of potential impacts from Step II (4) and the sensitivities and significance of the flora, fauna and hydrology from Step II (5) at each environmental receptor. Undertake an updated analysis of the likelihood and significance of the impact to each environmental receptor.

Step III: Developing the EMP

The EMP is an action oriented document written for use primarily by field staff. It summarizes the results of the studies undertaken in Steps I and II. The EMP provides detailed mitigation, monitoring, and contingency plans, and provides a detailed plan for reporting and communications for implementing the EMP based on adaptive management principles.

Prior to developing an EMP, the need for an EMP must be fully assessed and quantified. If a significant length of time has lapsed since Step II, a gap analysis should be undertaken to update the studies and confirm the conclusions from Step II, especially the environmental receptors. The EMP must be applied to the construction and post-construction phases of the project. TRCA reviews the EMP based on requirements under *Ontario Regulation 166/06* and the *Fisheries Act*.

The following tasks outline the steps in developing the EMP:

Task 1: Develop the Mitigation Program

Develop a detailed mitigation program based on the preliminary analysis completed in Step II (3). The intent of this program is to minimize or avoid construction impacts to each environmental receptor from water extraction or discharge. For each environmental receptor specify mitigation measures and their implementation sequence. The mitigation program should be designed to be flexible to adapt to updated information through monitoring. Examples include the selection of construction technologies, or the selection of discharge locations.

Task 2: Develop an Integrated Monitoring Program

The intent of monitoring is to verify that mitigation is successful. The frequency and duration of monitoring should be included in the plans. Baseline monitoring for the EMP may be required for an appropriate time period prior to any groundwater removals. The extent and frequency of monitoring should be reasonable and based on the scope of the project and environmental risk. Detailed requirements are outlined in the following tasks for each environmental receptor:

1. Identify all monitoring sites, including a rationale for their selection. Correlated mapping should be provided.

2. Identify monitoring frequency, timing, and methodology.

3. Identify an acceptable range of conditions.

4. Identify the caution or warning triggers that may warrant implementation of the contingency strategy. The triggers should be sensitive to impacts to the environmental receptor and measurable as part of a monitoring program. The extent and frequency of monitoring should increase when a contingency scenario is entered and continue for the duration of the contingency scenario.

5. Establish criteria for scaling back or discontinuing monitoring.

Task 3: Develop Contingency Strategy

1. Develop appropriate contingency measures and adaptations to the mitigation strategies to undertake when monitoring data approaches the caution or warning triggers. Include maps where appropriate.

2. The number and complexity of contingency measures should be scoped relative to the scope of the project, the environmental risk, and the likelihood of any given impact.

3. Permits under *Ontario Regulation 166/06* and requirements under other legislation may apply prior to implementing activities in the contingency strategy. There are options to expedite unforeseen, urgent requests for permits under *Ontario Regulation 166/06.*

4. Establish criteria for discontinuing the contingency measures.

Task 4: Reporting and Communications

An EMP is based on adaptive management principles. It accounts for the variability of lengthy projects, and allows for adaptive changes in mitigation based on monitoring throughout the project implementation. It is critical that TRCA staff be kept informed and updated on unforeseen environmental complications, conditions or events to enable an effective, timely and efficient response. The level of reporting and communications should be appropriate to the complexity of the project and environmental risk. Only actions taken, environmental impacts and deviations from the EMP should be documented and reported, along with actions for the next reporting period.

The following items should be clearly documented in an EMP:

1. Environmental inspector or environmental team that will be providing regular on-site inspections and monitoring and their reporting to the appropriate contacts, including TRCA.

2. Training plan for training staff on their roles and responsibilities.

3. Protocol for involving the TRCA primary point of contact in regular site meetings.

4. Protocol for responding to emergency situations, including notifying the TRCA contact.

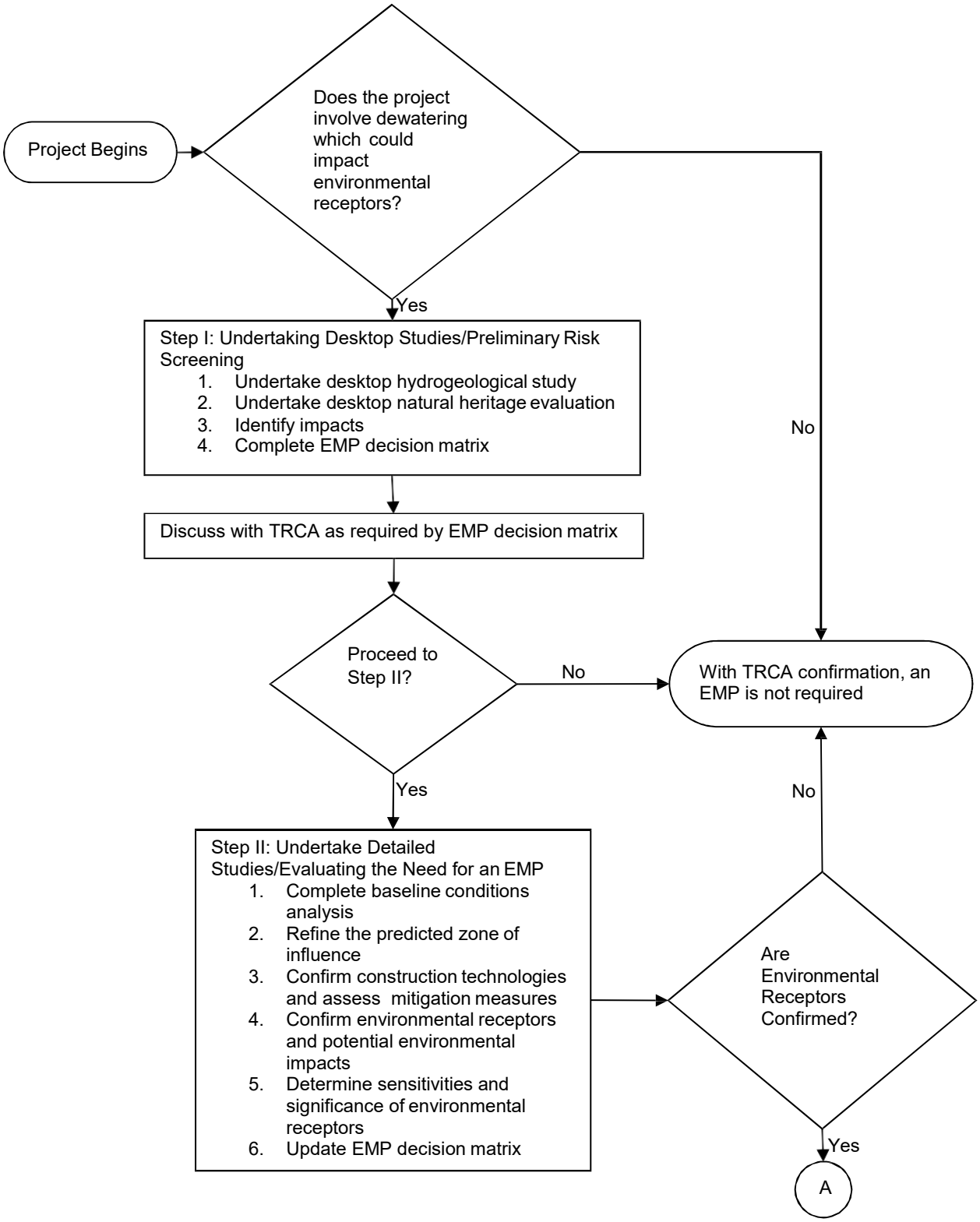
5. Protocol for undertaking the appropriate contingency strategy or adapting the mitigation strategy when caution or warning triggers are met.

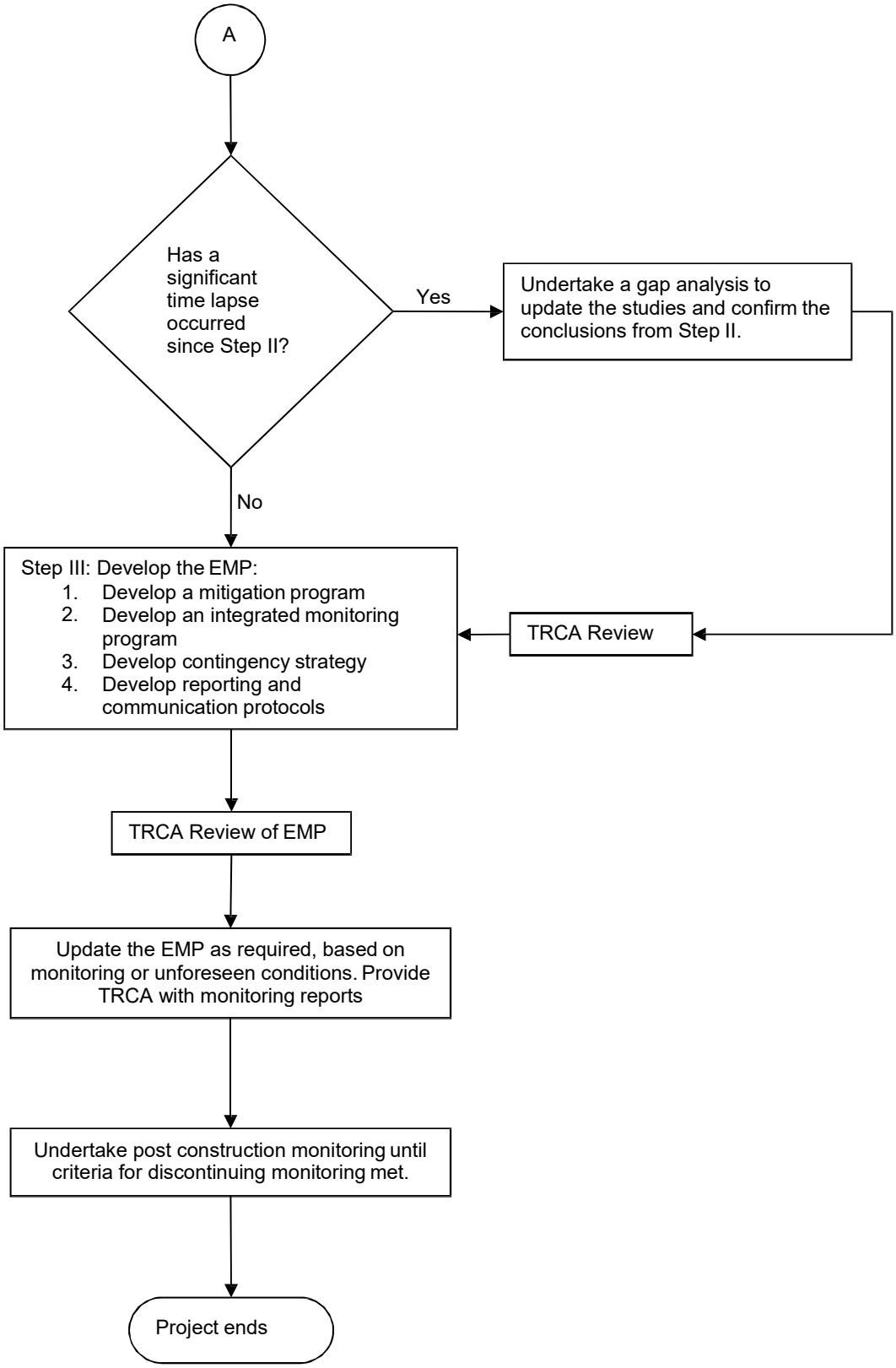
6. The form and frequency of monitoring reports. Monitoring reports will address all findings related to potential impacts to environmental receptors based on a comprehensive analysis of all monitoring data collected during the project implementation and recovery phases.

7. The form and frequency of regular updates to supplement regular monitoring reports, if required.

8. Protocol for updating the EMP as the project progresses, based upon monitoring or unforeseen conditions.

Appendix A: Technical Guidelines for the development of EMPs for Dewatering – TRCA Points of Contact




A
Has a significant time lapse occurred since Step II?
Yes
Undertake a gap analysis to update the studies and confirm the conclusions from Step II.
No
Step III: Develop the EMP:
1. Develop a mitigation program
2. Develop an integrated monitoring program
3. Develop contingency strategy
4. Develop reporting and communication protocols
TRCA Review
TRCA Review of EMP
Update the EMP as required, based on monitoring or unforeseen conditions. Provide TRCA with monitoring reports
Undertake post construction monitoring until criteria for discontinuing monitoring met.
Project ends

Appendix M

Climate Data

Thornthwaite Estimates of Potential Evapotranspiration

Site: Udora

Latitude: 44.3
Hemisphere: N

month	mean monthly air temp °F	mean monthly air temp °C	unadj PET mm	adj coeff	Thornthwaite estimates adj PET mm	Thornthwaite estimates adj PET in
Jan		-7.2	0	0.76	0	0.00
Feb		-6.5	0	0.87	0	0.00
Mar		-1.0	0	0.99	0	0.00
Apr		5.8	26	1.12	30	1.16
May		12.8	62	1.23	76	3.00
June		17.9	88	1.30	115	4.51
July		20.3	101	1.27	129	5.06
Aug		19.5	97	1.18	114	4.48
Sept		15.6	76	1.05	80	3.15
Oct		9.0	42	0.92	39	1.53
Nov		2.5	11	0.80	9	0.34
Dec		-3.5	0	0.74	0	0.00
	Annual Total	-	504	-	**590**	**23.23**

annual heat index I = 36.28
constant a = 1.07

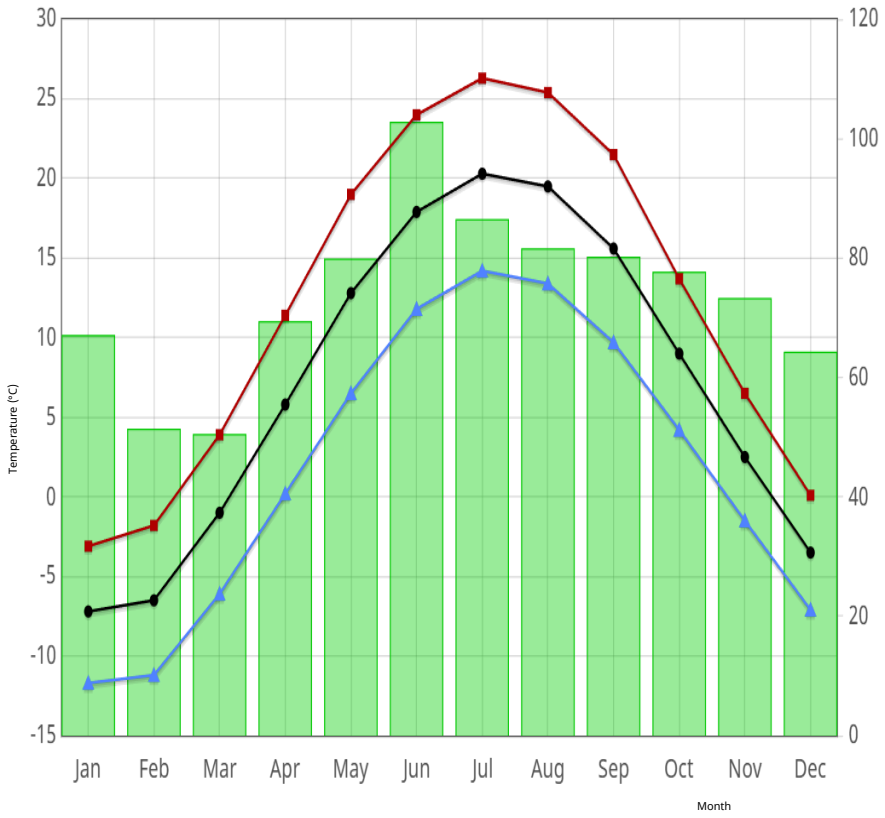
Government of Canada / Gouvernement du Canada

Canadian Climate Normals 1991-2020 Data

▼ Temperature and Precipitation Graph

Temperature and Precipitation Graph for 1991 to 2020 Canadian Climate Normals
UDORA *

* This station meets WMO standards for temperature and precipitation.



	Daily Maximum Temperature (°C)
	Daily Average Temperature (°C)
	Daily Minimum Temperature (°C)
	Precipitation (mm)

▼ Normals Data

The minimum number of years used to calculate these Normals is indicated by a code for each element. A "+" beside an extreme date indicates that this date is the first occurrence of the extreme value. Values and dates in bold indicate all-time extremes at the location for that reporting period. Normal period extremes (NPE) are calculated for the 30-year normal period, whereas long-term extremes (LTE) extend further back in time to the earliest date available in the data series.

Data used in the calculation of these Normals may be subject to further quality assurance checks. This may result in minor changes to some values presented here.

UDORA *

ONTARIO

* This station meets WMO standards for temperature and precipitation.

▼ Temperature

Temperature

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Daily Average (°C)	-7.2	-6.5	-1.0	5.8	12.8	17.9	20.3	19.5	15.6	9.0	2.5	-3.5	7.1	A
Standard Deviation	3.0	2.9	2.4	1.7	2.0	1.2	1.4	1.2	1.5	1.5	2.0	2.5	1.1	A
Daily Maximum (°C)	-3.1	-1.8	3.9	11.4	19.0	24.0	26.3	25.4	21.5	13.7	6.5	0.1	12.2	A
Daily Minimum (°C)	-11.7	-11.2	-6.1	0.2	6.5	11.8	14.2	13.4	9.7	4.2	-1.5	-7.1	1.9	A

Temperature Extremes (Normal Period)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Maximum Daily Mean (°C)	11.0	11.0	18.5	22.0	26.0	27.8	28.8	29.5	27.0	22.8	17.0	12.3		
Date (yyyy/dd)	2008/ 08	2017/ 23	2012/ 21	2002/ 17	2006/ 30	2018/ 30	2011/ 21+	2006/ 01	2001/ 08+	2002/ 01	2020/ 10	2001/ 05		
Minimum Daily Mean (°C)	-28.3	-26.0	-20.8	-8.3	0.3	7.0	11.0	10.5	3.0	-2.5	-12.3	-22.5		
Date (yyyy/dd)	1994/ 15	2016/ 13	2007/ 06	1997/ 09	2020/ 09	1992/ 20+	1997/ 08+	2014/ 14	2000/ 28	1997/ 22	2018/ 22	1993/ 26		
Extreme Maximum (°C)	14.0	17.0	27.0	30.0	34.0	35.5	35.5	**36.0**	33.5	29.0	24.0	16.5		
Date (yyyy/dd)	2005/ 13	2017/ 23	2012/ 21	2002/ 16	2006/ 30	2018/ 30	2011/ 20	**2001/ 08**	2002/ 09	2002/ 01+	2020/ 10	2001/ 05		
Minimum Daily Maximum (°C)	-25.0	-22.0	-15.0	-4.5	4.5	8.5	13.5	13.0	8.0	0.0	-7.0	-21.0		
Date (yyyy/dd)	1994/ 15	2015/ 15+	2007/ 06	1995/ 05	2020/ 09	1992/ 20	1992/ 31	2014/ 14	1991/ 27+	1992/ 19+	1995/ 28+	1993/ 26		
Maximum Daily Minimum (°C)	9.0	6.5	12.5	16.0	20.0	24.0	23.5	23.5	22.0	18.0	12.0	8.0		
Date (yyyy/dd)	2008/ 08	1994/ 20+	1998/ 31	1991/ 07+	2012/ 29+	2008/ 07	2013/ 19	2001/ 07+	2001/ 08+	2007/ 06+	2012/ 12	2001/ 05+		
Extreme Minimum (°C)	**-34.0**	-30.5	-33.0	-15.0	-5.0	1.0	5.0	3.5	-2.5	-7.0	-18.5	-33.0		
Date (yyyy/dd)	**1994/ 16**	2015/ 16+	2003/ 03	2003/ 06	1997/ 02	1998/ 04+	1992/ 22+	1997/ 06	2000/ 28	2002/ 24+	2018/ 22	2004/ 20		

Temperature Extremes (Long-Term)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Maximum Daily Mean (°C)	11.0	11.0	18.5	23.3	26.0	27.8	28.8	29.5	27.0	22.8	17.0	12.3		
Date (yyyy/dd)	2008/ 08	2017/ 23	2012/ 21	1990/ 27	2006/ 30	2018/ 30	2011/ 21+	2006/ 01	2001/ 08+	2002/ 01	2020/ 10	2001/ 05		
Minimum Daily Mean (°C)	-28.3	-26.0	-20.8	-8.3	0.3	7.0	11.0	10.5	3.0	-2.5	-12.3	-23.8		
Date (yyyy/dd)	1994/ 15	2016/ 13	2007/ 06	1997/ 09	2020/ 09	1992/ 20+	1997/ 08+	2014/ 14	2000/ 28	1997/ 22	2018/ 22	1989/ 21		
Extreme Maximum (°C)	14.0	17.0	27.0	30.0	34.0	35.5	35.5	**36.0**	33.5	29.0	24.0	16.5		
Date (yyyy/dd)	2005/ 13	2017/ 23	2012/ 21	2002/ 16	2006/ 30	2018/ 30	2011/ 20	**2001/ 08**	2002/ 09	2002/ 01+	2020/ 10	2001/ 05		
Minimum Daily Maximum (°C)	-25.0	-22.0	-15.0	-4.5	4.5	8.5	13.5	13.0	8.0	0.0	-7.0	-21.0		
Date (yyyy/dd)	1994/ 15	2015/ 15+	2007/ 06	1995/ 05	2020/ 09	1992/ 20	1992/ 31	2014/ 14	1991/ 27+	1992/ 19+	1995/ 28+	1993/ 26		
Maximum Daily Minimum (°C)	9.0	6.5	12.5	19.5	20.0	24.0	23.5	23.5	22.0	18.0	12.0	8.0		
Date (yyyy/dd)	2008/ 08	1994/ 20+	1998/ 31	1990/ 29	2012/ 29+	2008/ 07	2013/ 19	2001/ 07+	2001/ 08+	2007/ 06+	2012/ 12	2001/ 05+		
Extreme Minimum (°C)	**-34.0**	-30.5	-33.0	-15.0	-5.0	1.0	5.0	3.5	-2.5	-7.0	-18.5	-33.0		
Date (yyyy/dd)	**1994/ 16**	2015/ 16+	2003/ 03	2003/ 06	1997/ 02	1998/ 04+	1992/ 22+	1997/ 06	2000/ 28	2002/ 24+	2018/ 22	2004/ 20		

▼ Precipitation

Precipitation

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Rainfall (mm)	25.1	15.4	28.8	62.1	79.5	102.7	86.4	81.5	80.1	75.8	54.6	24.3	716.2	A
Snowfall (cm)	41.9	35.9	20.9	8.0	0.3	0.0	0.0	0.0	0.0	1.8	18.6	39.9	167.3	A
Precipitation (mm)	67.0	51.3	50.4	69.3	79.8	102.7	86.4	81.5	80.1	77.6	73.2	64.2	883.4	A
Average Snow Depth (cm)	12	14	8	1	0	0	0	0	0	0	2	7	4	C
Median Snow Depth (cm)	11	13	5	0	0	0	0	0	0	0	0	7	3	C
Snow Depth at Month-end (cm)	13	12	1	0	0	0	0	0	0	0	3	8	3	A

Precipitation Extremes (Normal Period)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Extreme Daily Rainfall (mm)	54.2	32.2	24.6	44.2	65.4	**121.0**	58.2	83.4	79.8	42.2	71.0	24.4		
Date (yyyy/dd)	2020/ 11	1997/ 21	1991/ 27	2009/ 03	2002/ 30	**1998/ 25**	1999/ 03	2012/ 10	2006/ 13	1995/ 05	1999/ 02	2005/ 28		
Extreme Daily Snowfall (cm)	**40.0**	25.0	26.0	20.0	7.0	0.0	0.0	0.0	0.0	15.0	19.0	30.0		
Date (yyyy/dd)	**2016/ 28**	1993/ 21	2008/ 08	2009/ 06	2013/ 12	1991/ 01+	1991/ 01+	1991/ 01+	1991/ 01+	1997/ 26	1999/ 03	1992/ 10		
Extreme Daily Precipitation (mm)	54.2	33.2	26.0	44.2	65.4	**121.0**	58.2	83.4	79.8	42.2	71.0	30.0		
Date (yyyy/dd)	2020/ 11	1997/ 21	2008/ 08	2009/ 03	2002/ 30	**1998/ 25**	1999/ 03	2012/ 10	2006/ 13	1995/ 05	1999/ 02	1992/ 10		
Extreme Snow Depth (cm)	44	**52**	49	21	7	0	0	0	0	12	18	44		
Date (yyyy/dd)	1999/ 16+	**2001/ 09**	2008/ 09	2009/ 08	2013/ 13	1991/ 01+	1991/ 31+	1991/ 01+	1991/ 30+	1997/ 27	1999/ 04+	2007/ 17		

Precipitation Extremes (Long-Term)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Extreme Daily Rainfall (mm)	54.2	32.2	40.0	44.2	65.4	**121.0**	58.2	83.4	79.8	42.2	71.0	24.4		
Date (yyyy/dd)	2020/ 11	1997/ 21	1990/ 11	2009/ 03	2002/ 30	**1998/ 25**	1999/ 03	2012/ 10	2006/ 13	1995/ 05	1999/ 02	2005/ 28		
Extreme Daily Snowfall (cm)	**40.0**	25.0	26.0	20.0	7.0	0.0	0.0	0.0	0.0	15.0	19.0	30.0		
Date (yyyy/dd)	**2016/ 28**	1993/ 21	2008/ 08	2009/ 06	2013/ 12	1990/ 01+	1990/ 01+	1990/ 01+	1989/ 01+	1997/ 26	1999/ 03	1992/ 10		
Extreme Daily Precipitation (mm)	54.2	33.2	40.0	44.2	65.4	**121.0**	58.2	83.4	79.8	42.2	71.0	30.0		
Date (yyyy/dd)	2020/ 11	1997/ 21	1990/ 11	2009/ 03	2002/ 30	**1998/ 25**	1999/ 03	2012/ 10	2006/ 13	1995/ 05	1999/ 02	1992/ 10		
Extreme Snow Depth (cm)	44	**52**	49	21	7	0	0	0	0	12	18	44		
Date (yyyy/dd)	1999/ 16+	**2001/ 09**	2008/ 09	2009/ 08	2013/ 13	1991/ 01+	1991/ 31+	1991/ 01+	1991/ 30+	1997/ 27	1999/ 04+	2007/ 17		

▶ Days With ...

▶ Days with Maximum Temperature

▶ Days with Minimum Temperature

▶ Days with Rainfall

▶ Days with Snowfall

▶ Days with Precipitation

▶ Days with Snow Depth

▶ Degree Days

▶ Quintiles

▶ Frost-Free

▶ Snow-Period

Legend

- A = WMO "3 and 5 rule" (i.e. no more than 3 consecutive and no more than 5 total missing for **either** temperature **or** precipitation)
- B = At least 25 years
- C = At least 20 years
- D = At least 15 years
- \+ = First or oldest date of occurrence of the extreme value

▼ Element Analytics

Statistics listed below are provided as a guide to determine the validity of Normals and Extremes calculations. For example, a composite station with 30 years of record between 1991 and 2020 with no missing years would be a more reliable normal than a composite station with 15 years of record and 2 missing years. Less than 100% possible observations indicates that out of the total number of observations used, some records were missing.

UDORA *

ONTARIO

* This station meets WMO standards for temperature and precipitation.

▼ Temperature

Temperature

	Begin Year	End Year	Total Number of Years	Missing Years	Total Count of Observations	% of Possible Observations
Daily Average (°C)	1991	2020	30	1	10455	95.7
Standard Deviation	1991	2020	30	1	10455	95.7

Temperature

	Begin Year	End Year	Total Number of Years	Missing Years	Total Count of Observations	% of Possible Observations
Daily Maximum (°C)	1991	2020	30	1	10675	97.7
Daily Minimum (°C)	1991	2020	30	1	10683	97.7

Temperature Extremes (Normal Period)

	Begin Year	End Year	Total Number of Years	Missing Years	Total Count of Observations	% of Possible Observations
Maximum Daily Mean (°C)	1991	2020			10776	98.6
Minimum Daily Mean (°C)	1991	2020			10776	98.6
Extreme Maximum (°C)	1991	2020			10817	99
Minimum Daily Maximum (°C)	1991	2020			10817	99
Maximum Daily Minimum (°C)	1991	2020			10826	99.1
Extreme Minimum (°C)	1991	2020			10826	99.1

Temperature Extremes (Long-Term)

	Begin Year	End Year	Total Number of Years	Missing Years	Total Count of Observations	% of Possible Observations
Maximum Daily Mean (°C)	1989	2020			11247	98.5
Minimum Daily Mean (°C)	1989	2020			11247	98.5
Extreme Maximum (°C)	1989	2020			11290	98.9
Minimum Daily Maximum (°C)	1989	2020			11290	98.9
Maximum Daily Minimum (°C)	1989	2020			11301	99
Extreme Minimum (°C)	1989	2020			11301	99

▼ Precipitation

Precipitation

	Begin Year	End Year	Total Number of Years	Missing Years	Total Count of Observations	% of Possible Observations
Rainfall (mm)	1991	2020	30	1	10626	97.2
Snowfall (cm)	1991	2020	30	1	10565	96.7
Precipitation (mm)	1991	2020	30	1	10565	96.7
Average Snow Depth (cm)	1991	2020	30	4	10134	92.7
Median Snow Depth (cm)	1991	2020	30	4	10134	92.7
Snow Depth at Month-end (cm)	1991	2020	30	1	353	98.3

Precipitation Extremes (Normal Period)

	Begin Year	End Year	Total Number of Years	Missing Years	Total Count of Observations	% of Possible Observations
Extreme Daily Rainfall (mm)	1991	2020			10912	99.8
Extreme Daily Snowfall (cm)	1991	2020			10910	99.8
Extreme Daily Precipitation (mm)	1991	2020			10910	99.8
Extreme Snow Depth (cm)	1991	2020			10447	95.6

Precipitation Extremes (Long-Term)

	Begin Year	End Year	Total Number of Years	Missing Years	Total Count of Observations	% of Possible Observations
Extreme Daily Rainfall (mm)	1989	2020			11394	99.8
Extreme Daily Snowfall (cm)	1989	2020			11393	99.8
Extreme Daily Precipitation (mm)	1989	2020			11389	99.8
Extreme Snow Depth (cm)	1989	2020			10553	94.3

▶ Days With ...

▶ Days with Maximum Temperature

▶ Days with Minimum Temperature

▶ Days with Rainfall

▶ Days with Snowfall

▶ Days with Precipitation

▶ Days with Snow Depth

▶ Degree Days

▶ Quintiles

▶ Frost-Free

▶ Snow-Period

▼ Composite Metadata / Threads

The Climate Normals, Averages, and Extremes are based on Canadian climate composite stations with at least 15 years of data between 1991 and 2020. Composite stations are comprised of one or more stations operated by the Meteorological Service of Canada (MSC) or its partners, where data from individual stations are joined together to create a 30-year data series for a given location. All stations (and associated metadata) used as part of the composite are listed below, alongside the threads used to calculate each Normals/Extremes element.

UDORA *

ONTARIO

* This station meets WMO standards for temperature and precipitation.

Related Data

Calculation Information

Normals Data

Element Analytics

Download Data

☑ Composite Station Metadata (CSV)

☐ Composite Station Threads (CSV)

Note:

Both files (CSV) can be downloaded

together as a zipped folder

Download

Composite Station Metadata

All stations used in the composite for all Normals and Extremes elements are listed. Station metadata includes station name, station identifiers, coordinates, and elevation.

Composite Station Name: UDORA

Station Name	Climate ID	WMO ID	TC ID	Latitude	Longitude	Elevation (m)
UDORA	6119055			44°15'45.000" N	79°09'41.004" W	262

Composite Station Threads

Station composites are threaded from the beginning of the Normals period starting in 1991 to the end of 2020, where the predecessor site's data is used until the end of its period of record and is then joined to the current operating site to extend the time series. Threads are generated by climate element for hourly and daily data, and may vary due to differences in station history, instrumentation, meteorological data availability, data quality, or proximity.

Normals and Extremes elements are grouped based on the climate element used in its calculation. Normal period extremes (NPE) are calculated using threads for the 30-year normal period. For long-term (LT) elements and long-term extremes (LTE), the same Normals period threads are extended back in time to the earliest date of data available from the first station used in the data series. These use the 'LTE Start Date' instead of the 'Start Date', that applies to normals period elements and extremes (NPE).

For additional station metadata information, refer to the above section "Composite Station Metadata".

Composite Station Name: UDORA

▼ Temperature

Normals/Extremes Elements	Climate Element	Station Name	Climate ID	LTE Start Date	Start Date	End Date
• Daily Average (°C) • Standard Deviation • Maximum Daily Mean (°C) (NPE, LTE) • Minimum Daily Mean (°C) (NPE, LTE)	DAILY MEAN TEMPERATURE	UDORA	6119055	1989/09/01	1991/01/01	2020/12/31
• Daily Maximum (°C) • Extreme Maximum (°C) (NPE, LTE) • Minimum Daily Maximum (°C) (NPE, LTE)	DAILY MAXIMUM TEMPERATURE	UDORA	6119055	1989/09/01	1991/01/01	2020/12/31
• Daily Minimum (°C) • Maximum Daily Minimum (°C) (NPE, LTE) • Extreme Minimum (°C) (NPE, LTE)	DAILY MINIMUM TEMPERATURE	UDORA	6119055	1989/09/01	1991/01/01	2020/12/31

▼ Precipitation

Normals/Extremes Elements	Climate Element	Station Name	Climate ID	LTE Start Date	Start Date	End Date
• Rainfall (mm) • Extreme Daily Rainfall (mm) (NPE, LTE)	DAILY TOTAL RAINFALL	UDORA	6119055	1989/09/01	1991/01/01	2020/12/31
• Snowfall (cm) • Extreme Daily Snowfall (cm) (NPE, LTE)	DAILY TOTAL SNOWFALL	UDORA	6119055	1989/09/01	1991/01/01	2020/12/31
• Precipitation (mm) • Extreme Daily Precipitation (mm) (NPE, LTE)	DAILY TOTAL PRECIPITATION	UDORA	6119055	1989/09/01	1991/01/01	2020/12/31
• Average Snow Depth (cm) • Median Snow Depth (cm) • Snow Depth at Month-end (cm) • Extreme Snow Depth (cm) (NPE, LTE)	SNOW ON GROUND	UDORA	6119055	1989/10/01	1991/01/01	2020/12/31

▶ Days With ...

▶ Days with Maximum Temperature

▶ Days with Minimum Temperature

▶ Days with Rainfall

▶ Days With Snowfall

▶ Days with Precipitation

▶ Days with Snow Depth

▶ Degree Days

▶ Quintiles

▶ Frost-Free

▶ Snow-Period

Date modified:

2025-10-15

Appendix N

Current Servicing



Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry
Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

- Approximate Property Boundary
- Approximate Location of Effluent Bed
- Domestic Bored/Dug Well with OBC Setback
- Monitoring Well (2025)

Scale: 1:1,000

0 10 20 40 m

Notes:
Base mapping provided by the Ontario Ministry of Natural (MNR) Geospatial Ontario (GEO) database, copyright the King's printer (2026)

Property boundary provided by First Base Solutions Inc. (VuMap)

Imagery provided by Ontario Geohub (SCOOP, 2023)

Feature locations determined by differential GPS (+/- 3.0 m)

OBC - Ontario Building Code (Drilled wells with 6 m of watertight casing have a 15 m setback, all other wells have 30 m setback)

Optimized for Oakridge Environmental Ltd. printing

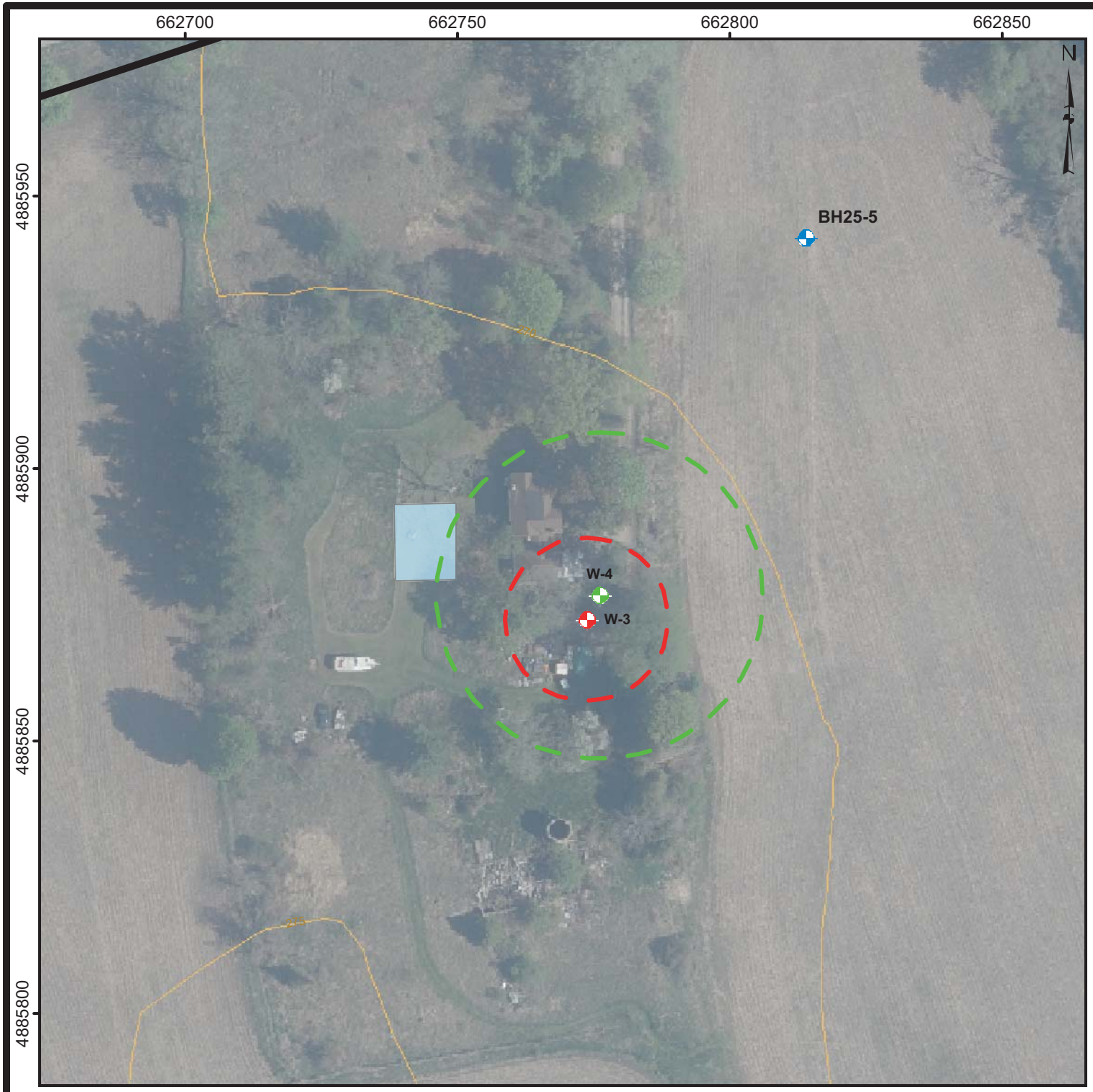
TITLE
Current Servicing (1520 & 1540 Reach Street)

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 25-3614

APPENDIX **N-A**

DATE February 2026



Preliminary Hydrogeological Study
Proposed Residential and Industrial/Commercial Development
1520, 1540 and 1580 Reach Street, Port Perry
Part of Lot 15 & 16, Concession 6 (Reach)
Township of Scugog, Durham Region

- Approximate Property Boundary
- Approximate Location of Effluent Bed
- Domestic Bored/Dug Well with OBC Setback
- Domestic Drilled Well with OBC Setback
- Monitoring Well (2025)

Scale: 1:1,000

0 10 20 40 m

Notes:
Base mapping provided by the Ontario Ministry of Natural (MNR) Geospatial Ontario (GEO) database, copyright the King's printer (2026)

Property boundary provided by First Base Solutions Inc. (VuMap)

Imagery provided by Ontario Geohub (SCOOP, 2023)

Feature locations determined by differential GPS (+/- 3.0 m)

OBC - Ontario Building Code (Drilled wells with 6 m of watertight casing have a 15 m setback, all other wells have 30 m setback)

Optimized for Oakridge Environmental Ltd. printing

TITLE
Current Servicing (1580 Reach Street)

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 25-3614

APPENDIX **N-B**

DATE February 2026

Appendix O

Guidelines for Decommissioning Disused Septic Systems

OOWA's Best Practices Series:
How to Decommission an Existing Onsite Sewage System

Produced by the OOWA Onsite Technical Committee

Version – 1.0
BP 4: How to Decommission an Existing Onsite Sewage System

Issued: May 2019

Decommissioning Existing Onsite Sewage Systems

Decommissioning existing onsite sewage systems is an important part of our industry. When existing systems are repaired, upgraded or replaced, some or all components of an existing system may require decommissioning. It is important that onsite sewage system components are decommissioned properly in order to protect the safety of property owners and their visitors, as well as the ensure continued protection of the environment. Unfortunately, there are no provincial guidelines or regulations for this practice. OOWA has developed the following recommendations based on best practices currently used by industry members.

Tanks and Chambers

Existing tanks and chambers should be properly decommissioned in order to prevent future collapse, which could pose a significant safety risk. To decommission concrete tanks and chambers, the contents of the tank should be pumped out by a licensed sewage hauler, the inlet and outlet pipes should be disconnected and one of the following methods may be used:

a. Backfill the tank with clean sand or granular material. Ensure that inlets and outlets are plugged to prevent water from pooling in the tank; **or**

b. Crush the tank in place and backfill with native material or clean fill. Ensure during crushing that the bottom of the tank is broken to prevent water pooling; **or**

c. Remove the tank and dispose of the material according to local regulations. Backfill the excavation with native material or clean fill.

If option 1a) is preferred consideration may be given to pressure washing the tank and having the washwater removed by the hauler, prior to backfilling. Any backfilled areas should be compacted suitably to prevent future settling. Plastic access risers or lids should be removed prior to backfilling/crushing and disposed of in accordance with local bylaws.

For pump chambers or chambers with electrical components the power supply must be disconnected, and electrical devices should be removed and disposed of in accordance with local regulations. Devices containing mercury must be removed and disposed of at approved hazardous waste receiving facilities.

Leaching Beds

Leaching beds may be decommissioned in one of two ways, depending on the intended future use of the leaching bed area. If the area of the leaching bed is not required for the construction of a replacement system, or any other type of building or structure then the leaching bed may be abandoned in place, as follows:

1. Disconnect and plug at both ends any underground sewer piping leading to the leaching bed, for example the discharge pipe from the septic tank to the header pipe or distribution box. Sewer piping may be plugged with grout or another sealant, or capped. Sewer pipe may also be removed and disposed of according to local regulations.

2. If a distribution box is present, it should be removed or decommissioned according to the steps outlined above for tanks and chambers.

3. If inspection ports are present, the ports should be removed and backfilled. Any piping should be cut off and plugged prior to backfill.

4. Once all connections have been disconnected the remainder of the bed may be abandoned in place.

5. If any part of the leaching bed has failed at the surface material should be removed and replaced with at least 300 mm of clean soil to avoid human contact.

If the area of the leaching bed is to be used for another purpose (i.e. construction of a building, etc.), the leaching bed should be removed. All stone and pipe, as well as any underlying soil showing signs of biomat contamination. i.e. black clogging material should be excavated and removed. Material removed should be disposed of in accordance with local regulations. The area may be backfilled with clean sand or granular material suitable for future construction. If a replacement leaching bed is proposed in the same area, care must be taken to ensure that all clogging material is removed and underlying receiving soils are well scarified prior to the placement of any fill material.