

# Hydrogeological Study

## Proposed Residential Development

14337 Highway 50  
Bolton, Ontario

Prepared for Tiffany Rox North Hill Ltd.

Report TH0106-REP.01 dated March 11, 2026

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## **1.0 INTRODUCTION**

### **1.1 Background**

Paterson Group (Paterson) was retained by Tiffany Rox North Hill Ltd to complete a hydrogeological study for the proposed residential development at 14337 Highway 50, Bolton, Ontario (hereinafter referred to as the “subject site”). The location of the subject site is shown on Drawing TH0106-1 - Site Plan appended to this report. This report incorporates the findings of Paterson Report TG0257-REP.01 Revision 1 dated March 6, 2026.

### **1.2 Scope of Work**

Paterson has completed this report in accordance with the scope prepared by Paterson based on our understanding of the proposed development at the time of report preparation as it relates to the local/regional hydrogeological system. As per the agreed upon scope, the purpose of this study was to:

- Characterize the hydrogeological setting of the subject site. Consideration was given to bedrock and surficial geology, aquifer systems, groundwater levels, hydraulic properties and catchment characteristics.
- Provide a preliminary estimate of dewatering rates during construction.
- Assess potential risks to the surrounding infrastructure, environment and water supply of existing well users.
- Complete a site-specific water budget assessment.

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## 2.0 PREVIOUS REPORTS

In addition to a review of the general literature summarized in the following sections and in the 'References' section of this report (MECP water well mapping, available geological and physiographic mapping), Paterson reviewed the following site-specific reports:

- TG0257-1 Revision 1 "Geotechnical Investigation – 14337 Highway 50 – Bolton, Ontario" - prepared by Paterson Group – March 6, 2026.
- TE0197-Rep.01 - Phase I ESA – 14337 Highway 50 Bolton - prepared by Paterson Group – January 23, 2026.
- TE0197-REP.02 – Phase II ESA – 14337 Highway 50 Bolton - prepared by Paterson Group – February 11, 2026.

## 3.0 METHOD OF INVESTIGATION

### 3.1 Records Review

A review of available geological, and hydrogeological data was completed as a part of this assessment. However, the literature review and previous reports did not provide site-specific data regarding overburden and bedrock aquifers, recharge and discharge conditions or flow contributions to the nearby water features. Further detail is provided in the following sections.

### 3.2 Field Program

The geotechnical and hydrogeological field programs were developed to assess geology, groundwater conditions, hydraulic gradients and the overall hydrologic/hydrogeologic function of the subject site. The test holes were advanced to various depths across the site to assess hydrogeological and geotechnical conditions.

The geotechnical field investigations completed by Paterson have been carried out at the subject site between January 28, 2025 and December 9, 2025. During that time, a total of thirteen (13) boreholes were advanced to a maximum depth of 9.8 m below ground surface (bgs). The location of the test holes are shown on Drawing TG0257-1- Test Hole Location Plan located in Appendix 2.

Soil samples were obtained from the boreholes by means of split spoon sampling and the sampling of shallow soils directly from auger flights. Split-spoon samples were taken at approximate 0.76 m intervals. The depth at which split-spoon and auger flight samples were obtained from the test holes are shown as "**SS**" and "**AU**" respectively on the Soil Profile and Test Data sheets, appended to this report. All samples were classified on site, placed in sealed plastic bags and were transported to our laboratory for further review and testing. Transportation of the samples was completed in accordance with ASTM D4220-95 (2007) - Standard Practice for Preserving and Transporting Soils.

The Standard Penetration Test (SPT) was conducted in conjunction with the recovery of the split-spoon samples. The SPT results are recorded as "N" values on the Soil Profile and Test Data sheets. The "N" value is the number of blows required to drive the split-spoon sampler 300 mm into the ground after an initial penetration of 150 mm using a 63.5 kg hammer falling from a height of 760 mm. This test was done in accordance with ASTM D1586-11 - Standard Method for Penetration Test and Split-Barrel Sampling of Soils.

The thickness of the overburden was evaluated during the course of the investigation by a dynamic cone penetration test (DCPT) at BH 12-25. The DCPT consists of driving a steel drill rod, equipped with a 50 mm diameter cone at its tip, using a 63.5 kg hammer falling from a height of 760 mm. The number of blows required to drive the cone into the soil is recorded for each 300 mm increment.

Reference should be made to the Soil Profile and Test Data sheets presented in Appendix 1 for specific details of the soil profiles encountered at the test hole locations.

### **Drawdown Analysis - Hydraulic Conductivity Testing**

Hydraulic conductivity testing was completed at select monitoring wells installed during the geotechnical investigations. Falling head and rising head tests (“slug tests”) were completed in accordance with ASTM Standard Test Method D 4404 - Field Procedure for Instantaneous Change in Head (Slug) Tests for Determining Hydraulic Properties of Aquifers.

Slug testing was completed on February 4 and 5, 2025 and January 22, 2026, by Paterson personnel. The general test method consisted of measuring the static water level in the well, followed by inducing a near-instantaneous change of head in the monitoring well and subsequent monitoring of water level recovery with an electronic water level meter and a water level data logger. The change in head was induced by the introduction of a 0.9 m in length and 19 or 38 mm in diameter acetal slug. The slug was introduced to raise the water level in the monitoring well, following which the decrease in water level over time was monitored (falling head test). Once the water level had stabilized (or nearly stabilized), the slug was then removed to lower the groundwater level, following which the increase in water level over time was monitored (rising head test).

Following the completion of the slug tests, the test data was analyzed as per the method set out by Hvorslev (1951). Assumptions inherent in the Hvorslev method include a homogeneous and isotropic aquifer of infinite extent, zero-storage assumption, and a screen length significantly greater than the monitoring well diameter. The assumption regarding aquifer storage is considered to be appropriate for groundwater flow through the overburden aquifer. The assumption regarding screen length and well diameter is considered to be met based upon a typical length of approximately 1.5 m and a diameter of 0.05 m.

While the idealized assumptions regarding aquifer extent, homogeneity, and isotropy are not strictly met in this case (or in any real-world situation), it has been our experience that the Hvorslev method produces effective point estimates of hydraulic conductivity in conditions similar to those encountered at the subject site. Hvorslev analysis is based on the line of best fit through the field data (hydraulic head recovery vs. time), plotted on a semi-logarithmic scale. In cases where the initial hydraulic head displacement is known with relative certainty, such as in this case where a physical slug has been introduced, the line of best fit is considered to pass through the origin.

In cases where the initial hydraulic head displacement is known with less certainty (e.g. a bail test, where water is pumped rapidly from the well), the best-fit line is drawn regardless of the origin.

### **3.3 Laboratory Testing**

All soil samples were retained for laboratory review following the field portion of the subsurface investigation. The soils were classified in general accordance with ASTM D2488-09a, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). Based on the soil descriptions across the subject site during the geotechnical investigations, these samples are considered to be sufficiently representative of the site.

### **3.4 Monitoring Well Installations**

As part of the field program, Monitoring wells were installed in nine (9) boreholes to permit the monitoring of groundwater levels and conduct drawdown analyses. All monitoring well installations were constructed in accordance with ASTM D5092 standards.

### **3.5 Water Level Measurements**

Following the completion of the drilling program, groundwater levels were measured at the monitoring well and Piezometer locations. Water levels were measured relative to the ground surface elevation at each location and are noted on the Soil Profile and Test Data sheets, appended to this report. In addition, a subsequent groundwater level monitoring program is ongoing using data loggers installed at select monitoring well locations to accurately monitor fluctuations in the groundwater levels across the subject site. The groundwater monitoring program will be completed in June 2026, following the spring freshet. The results from the monitoring report will be included in an update to the hydrogeological report.

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### **3.6 Surveying**

The test hole locations and ground surface elevations at each test hole location completed by Paterson were surveyed using a GPS unit with respect to a geodetic datum. The locations and ground surface elevations for each test hole are presented in Drawing TG0257-1 - Test Hole Location Plan.

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## **4.0 REVIEW AND EVALUATION**

### **4.1 Physical Setting**

Currently, the subject site consists primarily of agricultural lands. Commercial and residential buildings and associated gravel surfaced access lane are located within the southwest corner of the property. A greenbelt area consisting of a pond, wetland and an unnamed tributary to the Humber River have been noted within the eastern limits of the site. The subject site is bordered to the west by Highway 50, to the north, east, and southeast by vacant agricultural lands, and to the southwest by a commercial development. The site generally slopes downward from west to east with an approximate elevation difference of 7 to 8 m.

Based on TRCA watershed mapping and subwatershed mapping, the subject site is located within the Humber River watershed, specifically the Main Humber subwatershed. Surface water features within the subject site include a pond, wetland and an unnamed tributary to the Humber River within the eastern limits of the site. Several unnamed drainage ditches, creeks and conveyance channels have also been noted within the subject area.

According to available mapping from the Ontario Geologic Survey (OGS; MRD228), the subject site is located in a Till Plains (Drumlinized) physiographic region and generally coincides with our field observations discussed below.

## 4.2 Geology

### Surficial Geology

Overburden mapping provided by the OGS online mapping tool was reviewed as part of this assessment. Available mapping (MRD 128) indicates that overburden soils throughout the subject site consist of glacial till deposits consisting of clay to silt-textured till. Overburden soil mapping is shown on Drawing TH0106-2 - Surficial Geology Plan within Appendix 1.

Overburden soils identified during the geotechnical investigation completed by Paterson generally consisted of topsoil or an agricultural disturbed zone overlying silty clay and/or a glacial till deposit. The glacial till was typically comprised of a brown silty clay to clayey silt with varying amounts of sand and gravel. A fill material was observed underlying the topsoil layer at borehole BH 7-25 and BH 8-25 and consisted of brown silty sand with varying amounts of clay, gravel and organics. Discontinuous layers of compact silty sand to sandy silt layer was also encountered at BH1-25, BH4-25, BH5-25 and BH12-25. Overburden thickness was recorded at approximately 9.8 m across the subject site.

Specific details are provided on the Soil Profile and Test Data Sheets attached within Appendix 2 of this report.

### Bedrock Geology

Bedrock mapping, provided by the Ontario Geologic Survey was reviewed as a part of this assessment. Available mapping (MRD 219) indicates that bedrock at the subject site consists of shale and limestone of the Georgian Bay Formation.

Practical refusal to the DCPT was encountered at an approximate depth of 8.2 m below the existing ground surface at Borehole BH 12-25.

Bedrock geology mapping is shown on Drawing TH0106-3 - Bedrock Geology Plan within Appendix 1.

### Karst Features

The term “karst” refers to a geologic formation characterized by the dissolution of carbonate bedrock, such as limestone or dolostone. In order for karstification to occur, precipitation must be able to infiltrate the top of the bedrock, causing dissolution which enlarges previously existing joints and bedding planes.

Based on available mapping by the OGS (GRS 005), the subject site is located within an area that does not contain any known, inferred, or potential karstic landforms.

## **4.3 Hydrogeological Setting**

### **Existing Aquifer Systems**

Aquifer systems may be defined as geological media, either overburden soils or fractured bedrock, which permit the movement of groundwater under hydraulic gradients. In general, aquifer systems may be present in overburden soils or bedrock. Given that bedrock was not identified at the subject site during Paterson's geotechnical investigation, it is Paterson's opinion that overburden materials found at the site are representative of the local aquifer system for the proposed development.

The deeper bedrock aquifer system is likely to include the shale and limestone bedrock of the Georgian Bay Formation.

### **Groundwater Levels**

Groundwater was observed at piezometer and monitoring well locations at the subject site on January 8, 2025, December 22, 2025 and January 8, 2026, using an electronic water level meter. Manual groundwater measurements ranged between 1.04 to 7.21 m bgs and are displayed on the Soil Profile and Test Data sheets in Appendix 2. The manual measured groundwater levels are presented in Table 1.

Additional information regarding groundwater levels will be available once the on-going groundwater monitoring program is completed in June 2026.

**Table 1 – Summary of Groundwater Level readings**

| Test Hole ID | Structure | Ground Surface Elevation (m) | Groundwater Depth (m) | Groundwater Elevation (m) | Recording Date    |
|--------------|-----------|------------------------------|-----------------------|---------------------------|-------------------|
| BH 1-25      | PZ        | 261.60                       | Dry                   | N/A                       | December 22, 2025 |
| BH 2-25      | MW        | 263.86                       | 7.21                  | 256.65                    |                   |
| BH 3-25      | PZ        | 263.03                       | Dry                   | N/A                       |                   |
| BH 4-25      | PZ        | 266.5                        | Dry                   | N/A                       |                   |
| BH 5-25      | MW        | 264.25                       | Dry                   | N/A                       |                   |
| BH 6-25      | MW        | 264.09                       | Dry                   | N/A                       |                   |
| BH 7-25      | MW        | 265.3                        | 3.03                  | 262.27                    |                   |
| BH 8-25      | MW        | 266.20                       | 4.35                  | 261.85                    |                   |
| BH 10-25     | MW        | 263.78                       | 1.5                   | 262.28                    |                   |
| BH 11-25     | MW        | 266.05                       | 4.45                  | 261.6                     |                   |
| BH 12-25     | MW        | 264.18                       | 2.96                  | 261.22                    |                   |
| BH 13-25     | MW        | 266.11                       | 1.04                  | 265.07                    | January 8, 2026   |
| BH 11-25     | MW        | 266.05                       | Dry                   | N/A                       | February 4, 2025  |
| BH 12-25     | MW        | 264.18                       | 1.30                  | 262.88                    |                   |
| BH 13-25     | MW        | 266.11                       | 1.33                  | 264.78                    |                   |

**Note:** The ground surface elevation at each monitoring well location was surveyed using a handheld GPS unit and references to a geodetic datum.  
 MW – Monitoring Well and PZ - Piezometer

## Horizontal Hydraulic Gradients

Due to the nature of the water levels obtained from field work conducted at the subject site (groundwater monitoring wells), the absolute direction of horizontal hydraulic gradients in the vicinity of the subject site was not determined. However, using the available data, it was possible to approximate the horizontal hydraulic gradients in the overburden given that the horizontal hydraulic gradient between any 2 points is the slope of the hydraulic head between those points:

$$i = h_2 - h_1 / L$$

Where:  $i$  = horizontal gradient  
 $h$  = water level (m bgs)  
 $L$  = horizontal distance between test hole locations

Using the above noted formula, the horizontal hydraulic gradients were observed to be in an approximate northeasterly orientation with a magnitude generally ranging between 0.00012 to 0.03205 m/m in the overburden materials. The regional groundwater flow is anticipated towards the Humber River tributary located northeasterly of the subject site.

## Hydraulic Conductivity

Hydraulic conductivity testing (slug testing) was completed by Paterson as part of the field investigations at the subject site. The test data was analyzed as per the method set out by Hvorslev (1951). The result of the testing yielded hydraulic conductivity values of approximately  $1.82 \times 10^{-6}$  to  $3.10 \times 10^{-8}$  m/sec for glacial till layer with a geometric mean hydraulic conductivity of  $1.45 \times 10^{-7}$  m/sec. The hydraulic conductivity results are summarized in Table 2 below and have been included in Appendix 3.

| Test Hole ID | Ground Surface Elevation (m asl) | Testing Depth Interval (m bgs) | Testing Elevation Interval (m asl) | Hydraulic Conductivity (m/sec) | Test Type    | Strata       |
|--------------|----------------------------------|--------------------------------|------------------------------------|--------------------------------|--------------|--------------|
| BH 2-25      | 263.86                           | 9.1-7.6                        | 254.76-256.26                      | $4.10 \times 10^{-8}$          | Falling Head | Glacial Till |
| BH 7-25      | 265.30                           | 3.0-6.0                        | 262.3-259.3                        | $2.06 \times 10^{-7}$          | Falling Head | Glacial Till |
| BH 8-25      | 266.2                            | 3.0-6.0                        | 263.2-260.2                        | $1.09 \times 10^{-8}$          | Falling Head | Glacial Till |
| BH 12-25     | 264.18                           | 4.6-6.1                        | 259.6-258.1                        | $3.10 \times 10^{-8}$          | Falling Head | Glacial Till |
| BH 13-25     | 266.11                           | 4.6-6.1                        | 261.5-260                          | $1.82 \times 10^{-6}$          | Falling Head | Glacial Till |
|              |                                  |                                |                                    | $1.83 \times 10^{-6}$          | Rising Head  | Glacial Till |

## Water Quality

Monitoring well BH7-25 was sampled and analyzed for all the parameters listing in Peel Region - Sanitary Sewer Discharge By-Law 53-2010. Non-filtered samples were submitted to Paracel Laboratories Inc., a Canadian laboratory accredited by the Canadian Association for Laboratory Accreditation.

The sample results show that the groundwater quality is generally compliant with the standards outlined in Peel Region - Sanitary Sewer Discharge By-Law 53-2010. The water quality results can be found in Appendix 3.

## Groundwater Recharge and Discharge

In general, groundwater will follow the path of least resistance from areas of higher hydraulic head to areas of lower hydraulic head. While upward and downward hydraulic gradients may be indicative of areas of discharge and recharge respectively, other factors must be considered.

Based on Paterson's site specific field investigation , it is our interpretation that the majority of surface water will flow down gradient towards east as sheet drainage with minimal infiltration within the underlying silty clay layer. In select isolated areas where fill material has been encountered, surface water may infiltrate to the underlying glacial till layer where it will flow laterally down gradient as perched water (interflow). Therefore, the volume of recharge occurring within the site boundaries is expected to be minimal. However, it should be noted that the site is mapped as a significant groundwater recharge area (SGRA) by the MECP.

With regards to discharge zones, neither the topographical nor geological conditions are suitable for discharge to be occurring on a large scale at the subject site.

It should be noted that the subject site is not identified by the MECP as a drinking water protection zone.

### **Catchment Areas**

As previously discussed, the subject site is located within the Humber River watershed specifically within Main Humber subwatershed. As shown on Drawing TH0106-4 – Groundwater Contour Map, the general groundwater flow direction across the subject site was measured to be in a northeasterly direction, toward the pond, wetland and watercourse along the eastern boundary of the property (greenbelt area). Based on the general site topography, surficial drainage across the majority of the site is also anticipated to be eastward towards the previously noted water features.

The subject site currently consists of a residential property surrounded by a mixture of developed, undeveloped and agricultural land with single general flow direction occurring within the subject site. Therefore, it is Paterson's opinion that the subject site is predominantly characterized by one catchment area.

## **4.4 Groundwater Extraction and Discharge**

Based on available conceptual drawings for the site, three (3) potential sources of dewatering have been identified at the subject site. The sources consist of the excavation footprints related to the building foundations, servicing trenches and stormwater management pond (SWMP). Details regarding the excavation footprints and depths for each potential dewatering source were unavailable at the time of report preparation. Therefore, the building, servicing and SWMP excavations are assumed to encompass an area of approximately 750 m<sup>2</sup>, 125 m<sup>2</sup> and 1,700 m<sup>2</sup>, respectively, for a preliminary dewatering assessment.

Excavation sizes for the above noted water taking sources have been estimated based on previous experience at similar sites and the proposed SWMP footprint.

The infiltration rates provided for the following sources were calculated using the Dupuit Forchheimer method:

$$Q = \pi k((h_0^2 - h_p^2) / \ln(R/r))$$

- $k$  = hydraulic conductivity (m/sec)
- $h_0$  = thickness of the aquifer (m)
- $h_p$  = thickness of the aquifer from the base of the excavation to the base of the aquifer (m)
- $R$  = effective drawdown radius for the excavation (m)
- $r$  = equivalent radius of the excavation (m)

The groundwater infiltration calculations for the excavation footprints are provided in Appendix 3 of this report.

The stratigraphy within the anticipated saturated depth of the building excavations generally consists of a glacial till deposit. Specific design details were not available at the time of report preparation. For the purpose of this study, it has been conservatively assumed the buildings will consist of one basement level with a maximum excavation depth of 3 m bgs. Calculations are based on an excavation size of approximately 750 m<sup>2</sup> and water level depth at 2.5 m. Using a representative hydraulic conductivity of 1.45 x 10<sup>-7</sup> m/sec (geometric mean of the calculated hydraulic conductivities), the steady state volume of groundwater anticipated to be less than 25,000 L/day, per excavation.

The stratigraphy within the anticipated saturated depth of the servicing excavations generally consists of a glacial till deposit. Specific design details were not available at the time of report preparation. For the purpose of this study, it has been assumed the servicing trenches will have a maximum excavation depth of 5 m bgs. Calculations are based on an excavation size of approximately 125 m<sup>2</sup> and water level depth at 2.5 m. Using representative hydraulic conductivity of 1.45 x 10<sup>-7</sup> m/sec (geometric mean of the calculated hydraulic conductivities), the steady state volume of groundwater anticipated is less than 25,000 L/day, per excavation.

The stratigraphy within the anticipated saturated depth of the SWMP excavation generally consists of a glacial till deposit. Specific design details were not available at the time of report preparation. For the purpose of this study, it has been assumed the SWMP excavation will have a maximum excavation depth of 5 m bgs.

Calculations are based on an excavation size of approximately 1,700 m<sup>2</sup> and water level depth at 2.5 m. Using a representative hydraulic conductivity of  $1.45 \times 10^{-7}$  m/sec (geometric mean of the calculated hydraulic conductivities), the steady state volume of groundwater anticipated is approximately 40,000 to 50,000 L/day.

It is recommended that source specific dewatering calculations be completed once more specific development details are available.

## 5.0 SITE SPECIFIC WATER BUDGET ASSESSMENT

The site-specific water budget assessment (SSWB) was conducted to determine the hydrogeological function of the subject site, to identify infiltration potential and to identify opportunities for supplemental stormwater management measures. At the time of the field investigations the study area mainly consisted of agricultural land and some mature trees, grass and shrubs. The pre- and post-development terrain compositions are illustrated on Drawings TH0106-5 - Pre-Development Terrain Composition Plan and TH0106-6 - Post-Development Terrain Composition Plan, appended to this report. It should be noted the greenbelt area located within the eastern portion of the subject site has been excluded from the assessment as it is outside the development limits.

### 5.1 Calculations

#### Thornthwaite and Mather Water Balance Calculations

When falling precipitation intercepts the ground, three possible outcomes arise. The water can either evaporate/transpire back into the atmosphere (evapotranspiration), infiltrate into the surface soils (infiltration) or leave the area as runoff.

The method employed by Thornthwaite and Mather (1957) was used along with modelling software by Environment Canada's Engineering Climate Services Unit (EC-ECS) to determine the partitioning of water throughout various portions of the hydrologic cycle. Inputs into the modelling program included monthly temperature, precipitation, water holding capacities and site latitude. Using the long-term averages of these variables, it was possible to calculate annual potential and actual evapotranspiration, change in soil moisture storage and the water surplus.

The formula employed by Thornthwaite and Mather is as follows:

$$S = R + I = P - ET$$

Where:

- $S$  = surplus (mm/year)
- $R$  = annual runoff (mm/year)
- $I$  = annual infiltration (mm/year)
- $P$  = annual precipitation (mm/year)
- $ET$  = annual evapotranspiration (mm/year).

Shallow unsaturated soils within the study area generally consisted of an agriculturally disturbed zone overlying a silty clay to clayey silt layer and/or glacial till comprised of a silty clay to clayey silt matrix.

Based on the location of the site, climatic data was obtained from the climate station located at the Toronto Pearson International Airport covering the period of January 1940 to December 2025. The information was provided by Environment Canada's Engineering Climate Services Unit.

Table 3, below, displays the soil types present within the study area and their associated water holding capacities (WHC) as well as the actual evapotranspiration (AET) and surplus data. For the purposes of this study, AET values were used as they account for accumulated soil moisture deficit. This deficit represents the volume of water retained within the available pore spaces of the soil and is subtracted from the potential evapotranspiration (PET) value to more accurately calculate the water surplus. For the purpose of this study, 70% of the low-density property footprints are considered impervious surfaces (100% of surplus will result in runoff), with the remaining 30% considered urban lawns. Similarly, 85% of the medium-density property footprints are treated as impervious surfaces (100% of surplus will result in runoff), and 15% as urban lawns.

| <b>Table 3 - Site Specific Water Surplus Information</b> |                                    |  |                                |
|--|------------------------------------|--|--------------------------------|
| <b>Land Use Unit</b>                                     | <b>Water Holding Capacity (mm)</b> | <b>Actual Evapotranspiration (mm/year)</b> | <b>Surplus Water (mm/year)</b> |
| Impervious Surfaces                                      | N/A                                | 126*                                       | 660                            |
| Agricultural Land (Silt Loam)                            | 200                                | 591  | 197                            |
| Pasture and Shrubs (Silt Loam)                           | 250                                | 605  | 183                            |
| Urban Lawn/Shallow Rooted Crops (Silt Loam)              | 125                                | 550  | 238                            |
| Urban Lawn (Fine Sand Loam)                              | 75                                 | 506  | 279                            |
| Mature Forests (Silt Loam)                               | 400                                | 626  | 162                            |

Table reproduced using WHC values from MOE (2003) - Stormwater Management Planning and Design Manual and modelling data from Environment Canada's Engineering Climate Services Unit.  
 \*Values based on evaporation information for urban areas (16% of precipitation) included in the Eastern Ontario Water Resources Management Study prepared by CH2M HILL Canada Limited (March 30, 2001).

## Infiltration Factors

In order to break down the surplus water values for the various materials into infiltration and runoff, various factors must be considered. The MOE Stormwater Management Planning and Design Manual (2003) lists three main factors that contribute to surface water infiltration rates.

The first factor is topography, which is broken down further into three sections: flat and average slope, rolling land and hilly land. Flat and average slope provides the greatest potential for infiltration and has the largest infiltration factor applied to it (0.3), while the other two have progressively lower infiltration factors (rolling land is 0.2 and hilly land is 0.1).

The second factor is soil, which is also broken down further into three sections: tight impervious clay, medium combinations of clay and loam and open sandy loam. Open sandy loam provides the greatest potential for infiltration (infiltration factor of 0.4) while the other two have progressively lower potential for infiltration to occur (infiltration factor for medium combinations of clay and loam is 0.2 and for tight impervious clay is 0.1).

The final factor the MOE manual uses to partition infiltration from runoff is land cover. It is broken down into two sections: open fields/cultivated lands and woodlands. Woodlands have greater infiltration potential and an infiltration factor of 0.2. Open fields and cultivated lands have lower potential and with an infiltration factor of 0.1. A summary of the MOE manual's descriptors and their associated infiltration factors is shown below in Table 4.

| <b>Table 4 - MOE (2003) Infiltration Factors</b>                                     |                                     |
|--|-------------------------------------|
| <b>Description of Area/Development Site</b>  | <b>Value of Infiltration Factor</b> |
| <b>Topography</b>  |                                     |
| Flat and average slope (<0.6 m/km)   | 0.30                                |
| Rolling land (slope of 2.8-3.8 m/km)   | 0.20                                |
| Hilly land (slope of 28-47 m/km)   | 0.10                                |
| <b>Soil</b>  |                                     |
| Tight impervious clay  | 0.10                                |
| Medium combinations of clay and loam   | 0.20                                |
| Open sandy loam  | 0.40                                |
| <b>Cover</b>   |                                     |
| Open fields/cultivated lands   | 0.10                                |
| Woodlands  | 0.20                                |
| Table reproduced from MOE (2003) - Stormwater Management Planning and Design Manual. |                                     |

The topography of the study area is classified as Rolling land (slope of 2.8-3.8 m/km throughout the subject site) Therefore, a pre-development topography infiltration factor of 0.2 was given for the materials analysed on this property. Further, the topography of the subject site under post-development conditions will also consist of a rolling land well graded and was therefore assigned a post-development topography infiltration factor of 0.2. An infiltration factor of 0 was assigned to the impervious surfaces and SWMP due to its negligible infiltration capacity.

As previously discussed, soils within the study area generally consisted of an agriculturally disturbed zone overlying a silty clay to clayey silt layer and/or glacial till comprised of a silty clay to clayey silt matrix with low infiltration capacity. Therefore, a pre-development soil infiltration factor of 0.15 was given for the materials analysed on this property in exemption to urban lawn where an infiltration factor of 0.3 was given. Under post-development conditions, the majority of the site will consist of either impervious surfaces or urban lawn and parks. Therefore, an infiltration factor of 0.15 was assigned to urban lawn and parks and 0 for impervious surfaces and SWMP.

At the time of the field investigations, the subject site generally consisted of agricultural land with grass and shrub around the existing building and farm outbuilding and mature tree area at the southeast part of the site. A pre-development vegetation infiltration factor of 0.15 was used for agricultural land and shrub area, 0.2 for mature tree area, and 0.1 for urban lawns adjacent to the existing residential building. Post-development, it is expected the majority of the trees remaining on site will be removed to accommodate buildings, parking areas and roadways. As such, a post-development vegetation infiltration factor of 0.1 was assigned to the site, except for impervious surfaces and SWMP, which were given an infiltration factor of 0 due to its negligible potential to benefit from vegetation cover.

## **5.2 Pre and Post-Development Water Budget**

The pre-development water budget analysis conducted for the study area determined that an estimated 13,415,643 L/year of surplus water currently infiltrates the surface soils. The remaining estimated 16,397,402 L/year of surplus leaves the site as runoff.

The post-development water budget analysis determined that an estimated 2,935,718 L/year of surplus water will infiltrate the surface soils and approximately 77,872,804 L/year will leave the site as runoff. These values equate to an approximate decrease in infiltration of 78% and an increase in runoff of 375%.

The main variable that changed from pre-development conditions to post-development conditions was the addition of approximately 11 hectares of impervious surfaces. This results in reducing the area of pervious materials throughout the subject site, therefore, reducing the overall infiltration potential of the subject site. The remaining areas that are not being converted to impervious surfaces will become landscaped surfaces characterized by urban lawn (well graded silt loam) material. Furthermore, the SWMP area is designed to manage stormwater runoff and does not contribute to the site's overall infiltration or runoff potential. As previously noted, the greenbelt area was excluded from the post-development water budget analysis as it is located outside the limits of development.

It is important to note that the post-development water budget analysis for the subject site does not consider any potential infiltration of the impervious surfaces (100% runoff was taken as a conservative approach). In reality, some portion of surface water that lands on impervious surfaces infiltrates (asphalt is not 100% impervious) or is diverted to grassed areas where additional infiltration may occur. As such, the post-development runoff volumes should be considered a conservative estimate and not expected to definitively represent future conditions.

Details of the pre- and post-development water budget analyses are presented in Tables 5 and 6, included in Appendix 2 of this report.

## 6.0 GROUNDWATER IMPACT ASSESSMENT

### 6.1 Impact of Proposed Development on Surrounding Infrastructure

As previously discussed, soils within the subject site generally consisted of an agriculturally disturbed zone overlying a silty clay to clayey silt layer and/or glacial till comprised of a silty clay to clayey silt matrix. The expected groundwater infiltration will be encountered within the glacial till deposit.

The steady-state radius of influence calculations completed were based upon the Sichardt equation as shown below. The assumed setting for the analytical solution was one in which open cut trenches were used to install the services at the subject site, creating an unconfined condition which would allow use of the equation to determine the radius of influence.

$$R = 3000 * \Delta h(K^{0.5})$$

Where:  $R$  = radius of influence (m)  
 $\Delta h$  = expected groundwater drawdown (m)  
 $K$  = hydraulic conductivity (m/sec).

For the purposes of completing the calculations, the following values were used in the analysis for the glacial till:

- $\Delta h = 0.5$  to  $2.5$  m
- $K = 1.45 \times 10^{-7}$  m/sec (geometric mean hydraulic conductivity), based on site specific hydraulic conductivity values of the glacial till.

Using the above equation and assumptions, a radius of influence of 1 to 3 m will develop as a steady state condition within the glacial till, extending from the edge of the excavation, in the area of the subject site, depending on the groundwater levels and hydraulic properties of the specific soils encountered.

The surrounding area consists of mostly agricultural land with some commercial and an institutional development. No buildings are located within the theoretical radius of influence. Furthermore, any nearby buildings are generally expected to be founded on the glacial till deposit. The majority of the groundwater infiltration is expected to occur within the glacial till with minimal compressibility. Water takings are also expected to be short term in duration, given the nature of the development. As such, adverse effects to surrounding infrastructure related to dewatering activities at the subject site are expected to be negligible.

## **6.2 Impact of Proposed Development on Existing Well Users**

A search of the Ontario Water Well Records online mapping database indicates there are a number of wells within 500 m of the site as depicted on Drawing TH0106-7 - MECP Water Well Location Plan, appended to this report. However, all domestic wells in proximity to the subject site are located well outside the theoretical radius of influence and extend well below the anticipated excavation depths. Given the vertical and horizontal separation of the wells from the proposed development, dewatering activities at the subject site are not expected to cause any interference to the water supply of surrounding properties or other negative impacts.

### **Existing Water Quality and Construction Dewatering Plan**

Monitoring well BH7-25 was sampled and analyzed for all the parameters listed in Peel Region - Sanitary Sewer Discharge By-Law 53-2010. The sample results show that the groundwater quality is generally compliant with the standards outlined in Peel Region - Sanitary Sewer Discharge By-Law 53-2010. The water quality results can be found in Appendix 3. Further, as the potential to interfere with the water quality/quantity of existing well users in the area is negligible, a water well monitoring program is not recommended for the aforementioned water takings. If wells are found to remain in existence on the subject site, they should be decommissioned in accordance with Ontario Regulation 903.

In the unlikely event that construction activities are shown to cause negative impacts to the water supplies of existing well users, the contractor shall take action to make available a supply of water equivalent in quality and quantity of their typical takings or shall compensate those affected for reasonable costs for doing so, or shall reduce water taking amounts to alleviate the negative impacts. The contractor shall provide temporary water supplies, to those affected, to meet their typical takings or compensate such persons for reasonable costs associated to do so until permanent restoration of the affected water supply or an equivalent source.

Prior to and during site development, it is recommended that Best Management Practices (BMPs) with respect to fuels and chemical handling, spill prevention, and erosion and sediment control be followed. This will minimize the potential for the introduction of contaminants to the soil, surface water, or groundwater at the subject site.

Also, BMPs related to water discharge quality should be implemented which may include but not limited to:

- ❑ Controlling sediment loading before pumping by:
  - placing the pump in a bucket at the bottom of a sump pit to reduce sediment build up around the pump.
  - adding a float to the suction hose/pipe and keep it off the bottom of the sump pit to avoid pumping sediment that has settled at the bottom of the pit.
- ❑ Filtering discharge through a sediment bag or use filter cloth around the suction and/or discharge hose/pipe.

As the discharge point for the pumped water is anticipated to be directed to overland drainage, it is expected that a multi-barrier approach (such as hay bales, geosocks, silt fence, etc.) to a non-frozen, well vegetated area will be utilized in order to promote re-infiltration prior to reaching a water body. If overland drainage occurs within 30 m of a water body, the turbidity of the water shall not exceed 8 NTU above background levels. The contractor will be required to maintain appropriate BMPs with respect to sediment and erosion control to ensure negative effects to the surrounding environment are minimized.

If water is to be discharged to municipal sewers, discharge activities must be compliant with the Regional Municipality of Peel By-law 53-2010. It is anticipated that discharge rates will generally be < 5 L/s and should not exceed the local municipal sewer system's capacity. Final discharge rates will be determined closer to the time of construction.

### **Post-Development Water Quality**

With respect to stormwater runoff quality, it is recommended that BMPs with respect to operational standards be maintained for any stormwater management facilities constructed for the proposed development. It is also recommended that adherence to the local road salting management regulations is enforced to ensure that chloride levels in stormwater runoff are as low as possible.

## **6.3 Impact of Proposed Development on the Environment**

A search of the MECP Environmental Site Registry for Records Site Condition (RSCs) was conducted as part of the assessment of the site, neighbouring properties and the general area. No RSCs were identified within the 500 m of the subject site.

A Phase II Environmental Site Assessment (ESA) was completed by Paterson for the subject site. All soil samples were found to be in compliance with MECP Table 1 Residential standards.

---

## **6.4 Adjacent PTTW/EASRs/ECAs**

A search of the MECP Permit to Take Water (PTTW) and Environmental Activity and Sector Registry (EASR) database provided no active PTTW or EASR within a 500 m radius of the subject site and with respect to Environmental Compliance Approvals (ECAs), no ECAs were found neighboring the subject site.

## **7.0 ASSESSMENT AND RECOMMENDATIONS**

### **7.1 Sources of Contamination**

Based on the soil and groundwater samples collected at the subject site as part of the Phase II ESA investigation, all soil and groundwater samples were found to be in compliance with MECP Table 1 Residential standards.

Prior to and during site development, it is recommended that construction best management practices with respect to fuels and chemical handling, spill prevention, and erosion and sediment control be followed. This will minimize the potential for the introduction of contaminants to the soil, surface water, or groundwater at the subject site.

It is anticipated that the material on site will be disposed of as per Ontario Regulation 406/19 – On-site and Excess Soil Management.

With respect to stormwater runoff quality, it is recommended that best management practices with respect to operational standards be maintained for any stormwater management facilities constructed for the proposed development.

### **7.2 Surface Water Features**

There are several surface water features located within the subject site and within 500 m of the subject site. These include unnamed scratch ditches, drainage ditches, pond and unnamed tributaries of Humber River. However, as previously discussed, the stormwater management strategy will employ measures to increase hydration to adjacent surface water features. Therefore, by implementing the proposed stormwater management strategy no significant impacts are expected from the proposed development on the overall hydrologic function of the area or sensitive features.

With respect to water discharge, water that is pumped from on site excavations must be managed in an appropriate manner. The contractor will be required to implement a water management program to dispose of the pumped water. If the discharge point for the pumped water is directed to overland drainage, it is expected that a multi-barrier approach (such as hay bales, geosocks, silt fence, etc.) to a non-frozen, well vegetated area will be utilized in order to promote re-infiltration prior to reaching a watercourse. Furthermore, if the discharged water is to be directed to overland drainage within 30 m of a water body/watercourse, the turbidity of the water shall not exceed 8 NTU above background levels of the

nearest water body. The contractor will be required to maintain appropriate BMPs with respect to sediment and erosion control to ensure negative effects to the surrounding environment are minimized.

### **7.3 Water Taking Permitting Requirements**

If water taking volumes are greater than 50,000 L/day, a MECP water taking Environmental Activity Sector Registry (EASR) or Permit to Take Water (PTTW) will be required. Depending on the nature of the proposed water takings, an additional hydrogeological investigation may be required.

The contractor should be prepared to direct water away from all bearing surfaces and subgrades, regardless of the source, to prevent disturbance to the founding medium.

### **7.4 Infiltration Potential**

As previously discussed, surficial soils within the study area generally consisted of an agriculturally disturbed zone overlying a silty clay to clayey silt layer and/or glacial till comprised of a silty clay to clayey silt matrix. Infiltration rates for the overburden materials are anticipated to be low.

As noted above, the results of the water budget analyses completed at the subject site indicated that 13,415,643 L/year of infiltration and 16,397,402 L/year of surface runoff are occurring under pre-development conditions. Under post development conditions, it is expected that there will be a 78% infiltration deficit and a 372% increase in runoff. Therefore, it will be necessary to incorporate various stormwater management measures into the design of the development. It should be noted that Paterson's water budget assessment is based on mean water budget values for the soil types at the subject site that were calculated by modeling conducted by EC-ECS. The EC-ECS model is calibrated to historical climate data and does not account for climate change predictions. Therefore, based on the National Capital Commission and City of Toronto and surrounding area climate change predictions, the stormwater management design team could consider potential seasonal changes (longer spring and shorter winter) and increases in temperature and precipitation when developing their stormwater management strategy.

The stormwater management strategy should target methods best suited to mitigate the impacts that may arise due to the post-development decrease in infiltration and increase in runoff at the subject site. Based on the site constraints observed at the subject site (i.e. low permeable soil conditions), infiltration-type Low Impact Development (LID) measures are not recommended at the time of

report preparation. Therefore, it is understood that the stormwater management strategy will include conventional stormwater management measures (i.e., end of pipe quality and quantity control) as well as the implementation of Best Management Practices to mitigate impacts related to the post-development water balance. Despite the post-development infiltration deficit, the majority of runoff will continue to be directed to areas within the same subwatershed, where infiltration will occur offsite, thereby maintaining the natural function of the hydrologic and hydrogeologic systems.

## 8.0 CLOSURE

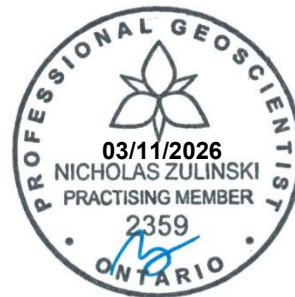
The client should be aware that any information pertaining to soils and all test hole logs are furnished as a matter of general information only, and test hole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those of the test holes.

The present report applies only to the project described in this document. Use of this report for purposes other than those described herein or by person(s) other than Tiffany Rox North Hill Ltd. or their agent(s) is not authorized without review by Paterson Group for the applicability of our recommendations to the altered use of the report.

### Paterson Group Inc.



Nicholas Zulinski, M.Sc., P.Geo., géo.



Balaji T. Nirmala, M.Eng., P.Eng.

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## 9.0 REFERENCES

Chapman, L.J., and Putnam, D. F. “The Physiography of Southern Ontario, Third Edition”. Ontario Ministry of Natural Resources, 1984.

Freeze, R.A., and Cherry, J.A. “Groundwater”. Prentice-Hall, Inc., 1979.

Ontario Geologic Survey Mapping -  
<https://www.geologyontario.mndm.gov.on.ca/ogsearth.html>

Ontario Regulation 387/04.

# APPENDIX 1

DRAWING TH0106-1 - SITE PLAN

DRAWING TH0106-2 - SURFICIAL GEOLOGY PLAN

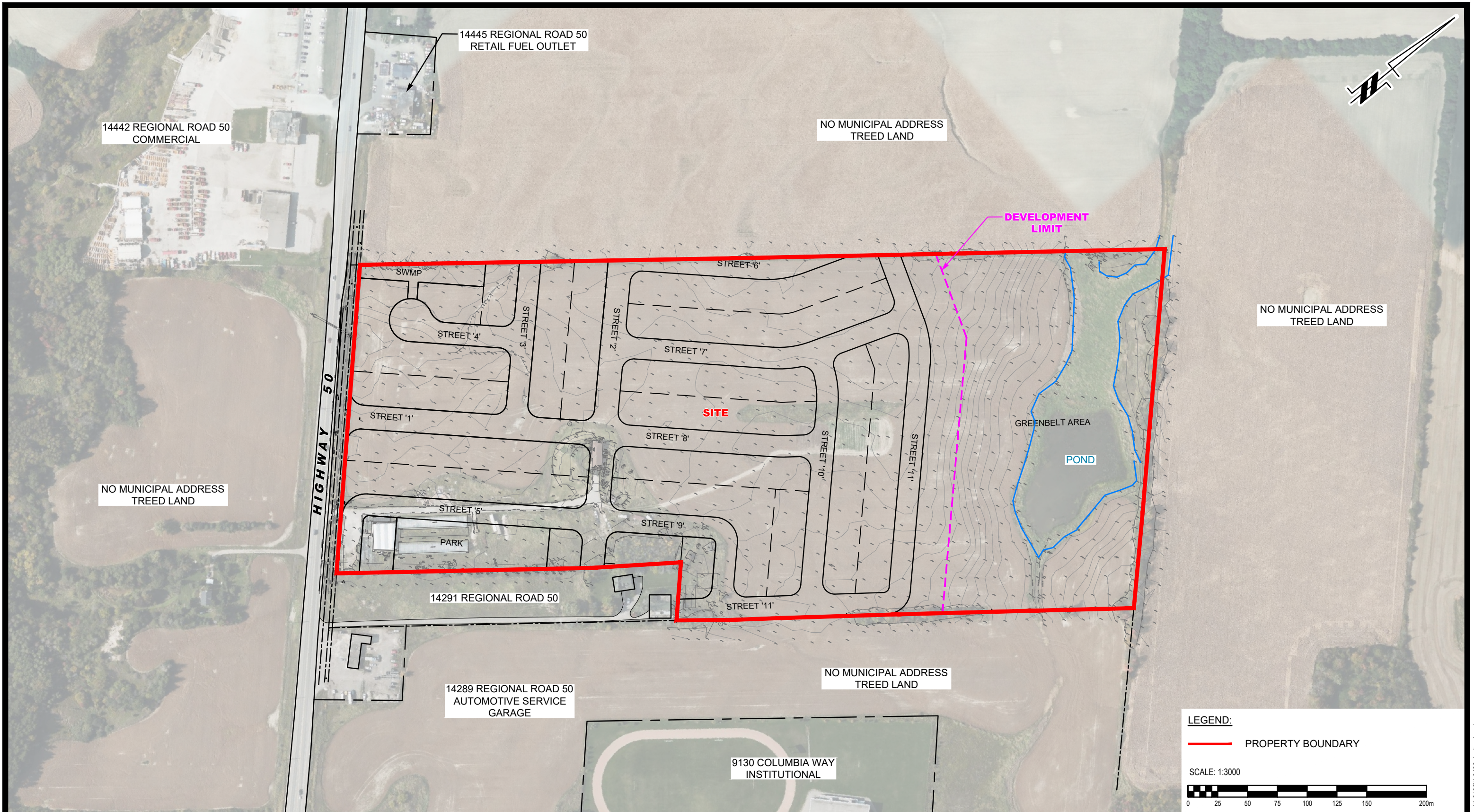
DRAWING TH0106-3 - BEDROCK GEOLOGY PLAN

DRAWING TH0106-4 - GROUNDWATER CONTOUR MAP

DRAWING TH0106-5 - PRE-DEVELOPMENT TERRAIN COMPOSITION PLAN

DRAWING TH0106-6 - POST-DEVELOPMENT TERRAIN COMPOSITION PLAN

DRAWING TH0106-7 - MECP WATER WELL LOCATION PLAN



**LEGEND:**  
 PROPERTY BOUNDARY

SCALE: 1:3000

**PATERSON GROUP**  
 9 AURIGA DRIVE  
 OTTAWA, ON  
 K2E 7T9  
 TEL: (613) 226-7381

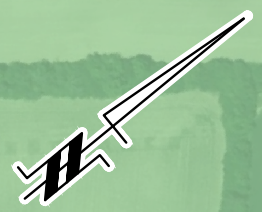
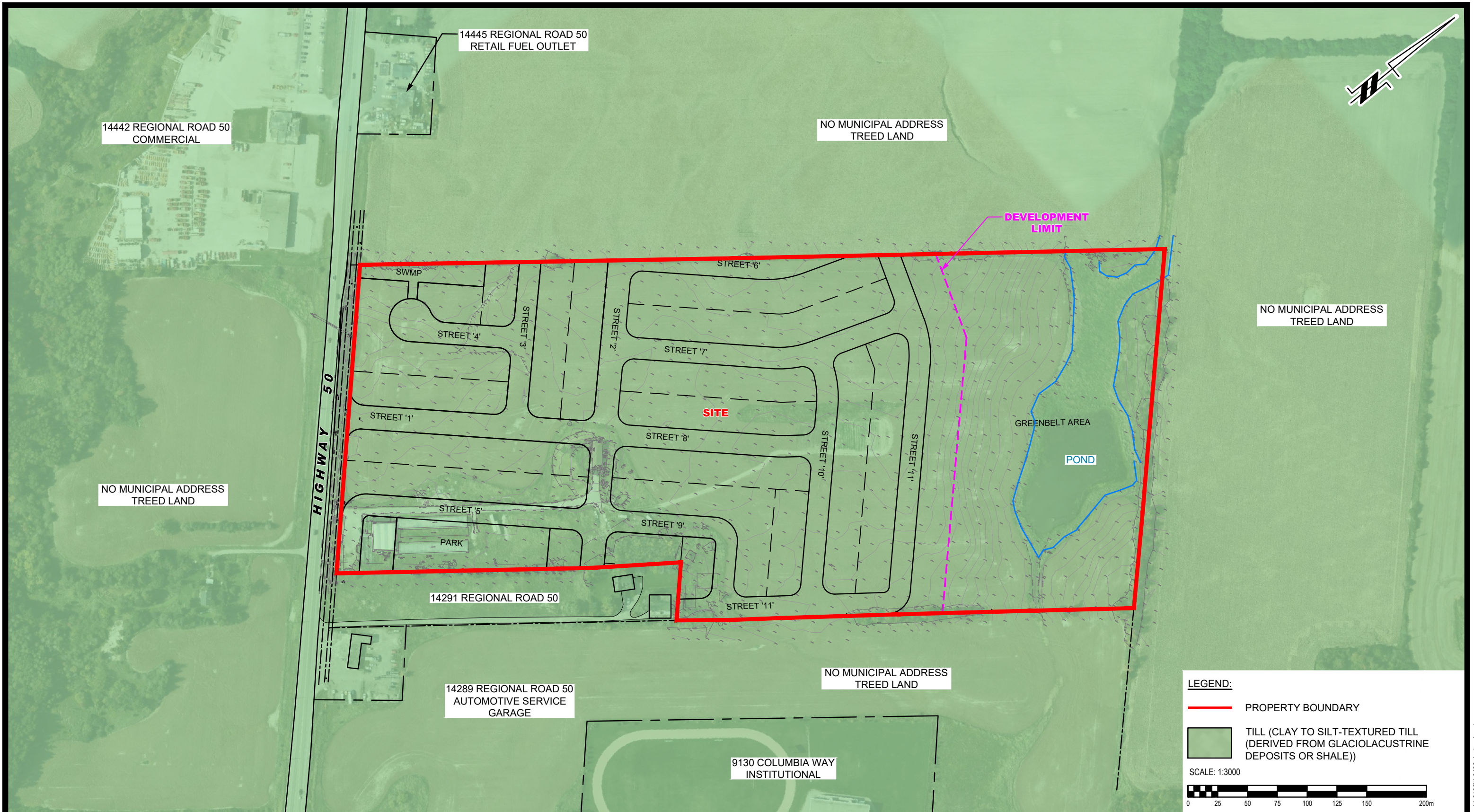
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**PROPOSED RESIDENTIAL DEVELOPMENT**  
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 ONTARIO

**BOLTON,**  
 Title:

**SITE PLAN**

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|--------------|--------|---------------|-----------------|
| Scale:       | 1:3000 | Date:         | 01/2026         |
| Drawn by:    | GK     | Report No.:   | TH0106-1        |
| Checked by:  | BN     | Dwg. No.:     | <b>TH0106-1</b> |
| Approved by: | ML     | Revision No.: |                 |



**LEGEND:**

- PROPERTY BOUNDARY
- TILL (CLAY TO SILT-TEXTURED TILL (DERIVED FROM GLACIOLACUSTRINE DEPOSITS OR SHALE))

SCALE: 1:3000

9 AURIGA DRIVE  
OTTAWA, ON  
K2E 7T9  
TEL: (613) 226-7381

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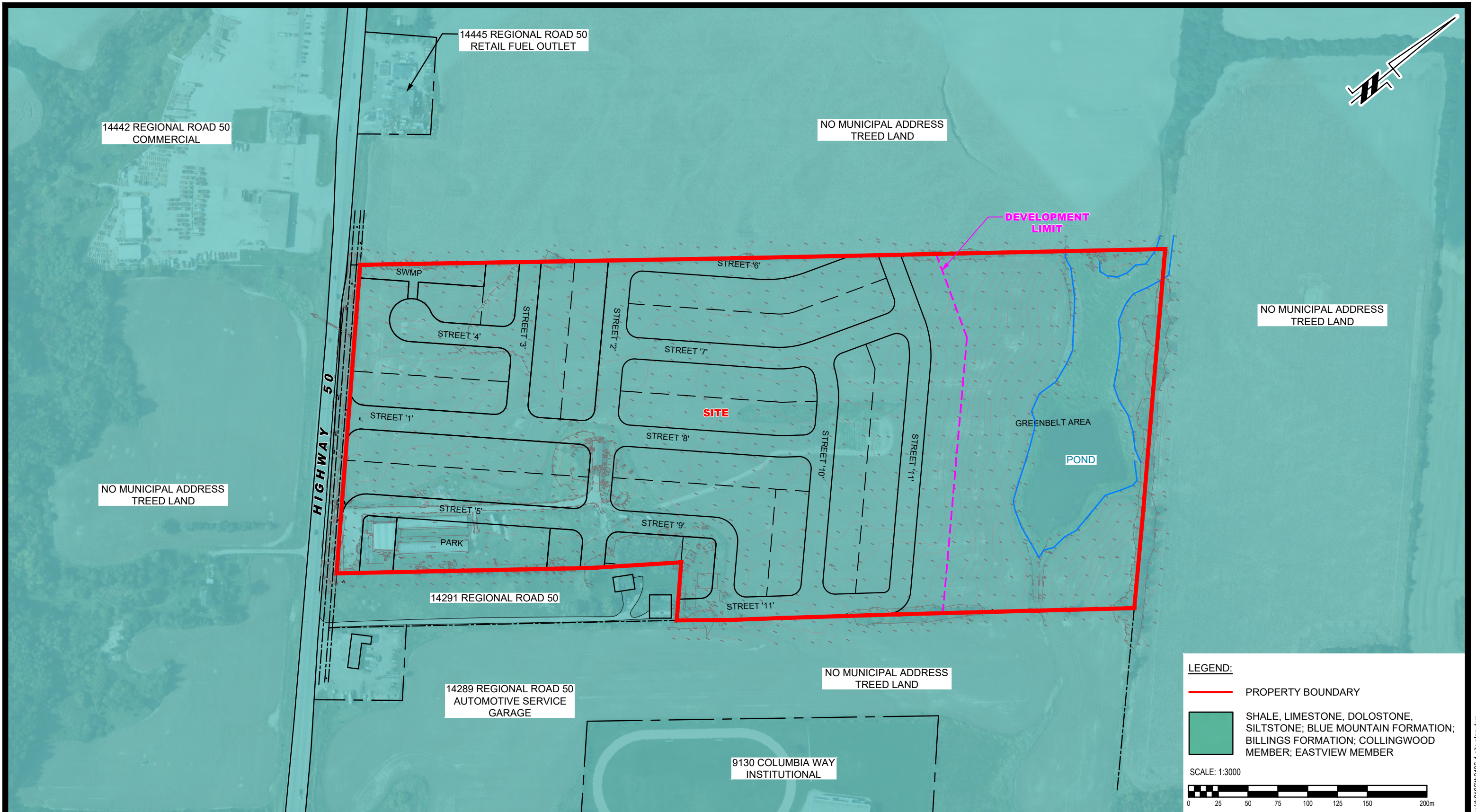
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**ONTARIO**

**SURFICIAL GEOLOGY PLAN**

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| Checked by:  | BN     | Dwg. No.:     | <b>TH0106-2</b> |
| Approved by: | ML     | Revision No.: |                 |



**LEGEND:**

- PROPERTY BOUNDARY
- SHALE, LIMESTONE, DOLOSTONE, SILTSTONE; BLUE MOUNTAIN FORMATION; BILLINGS FORMATION; COLLINGWOOD MEMBER; EASTVIEW MEMBER

SCALE: 1:3000

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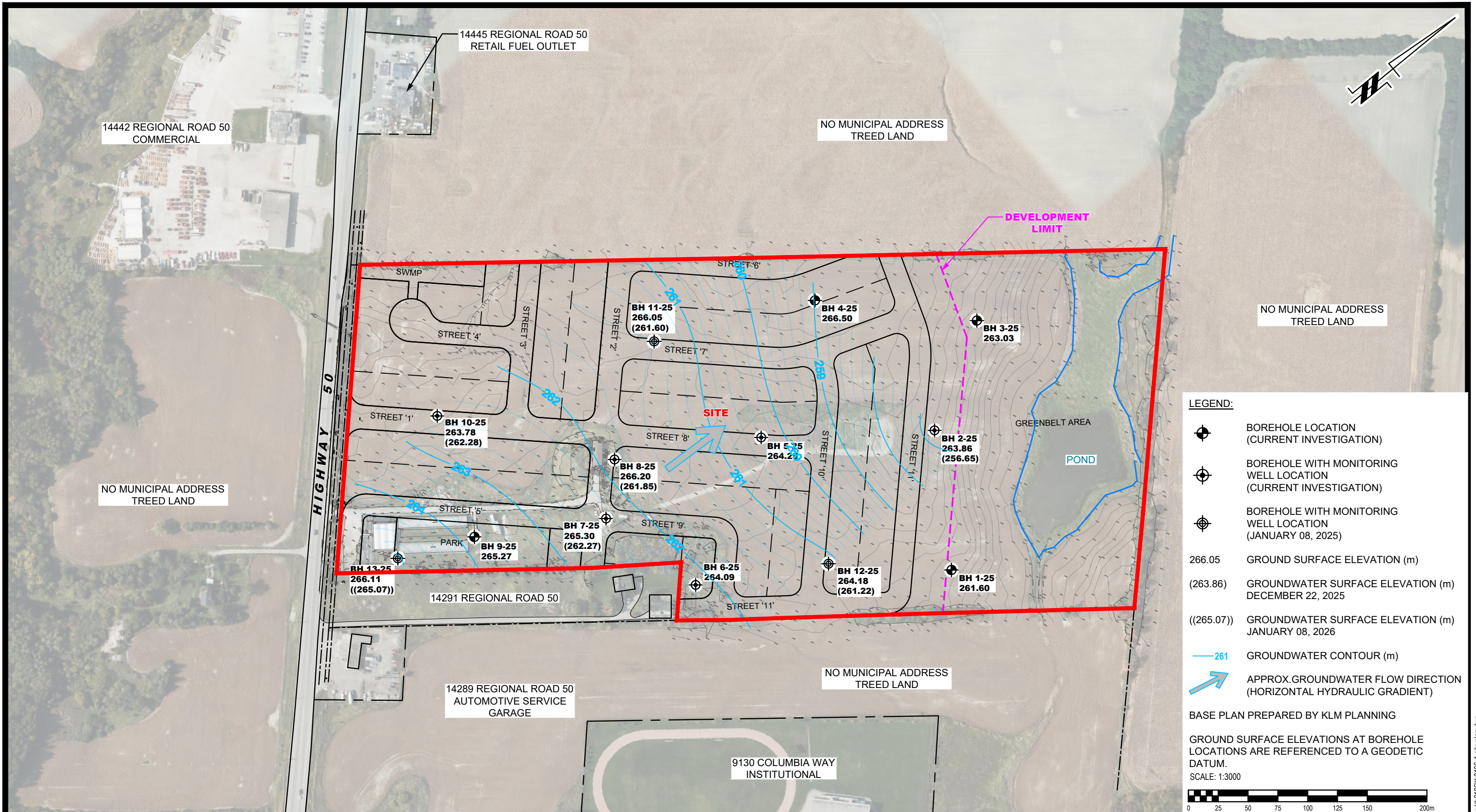
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**BOLTON,**  
 Title:

**BEDROCK GEOLOGY PLAN**

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| Approved by: | ML     | Revision No.: |                 |



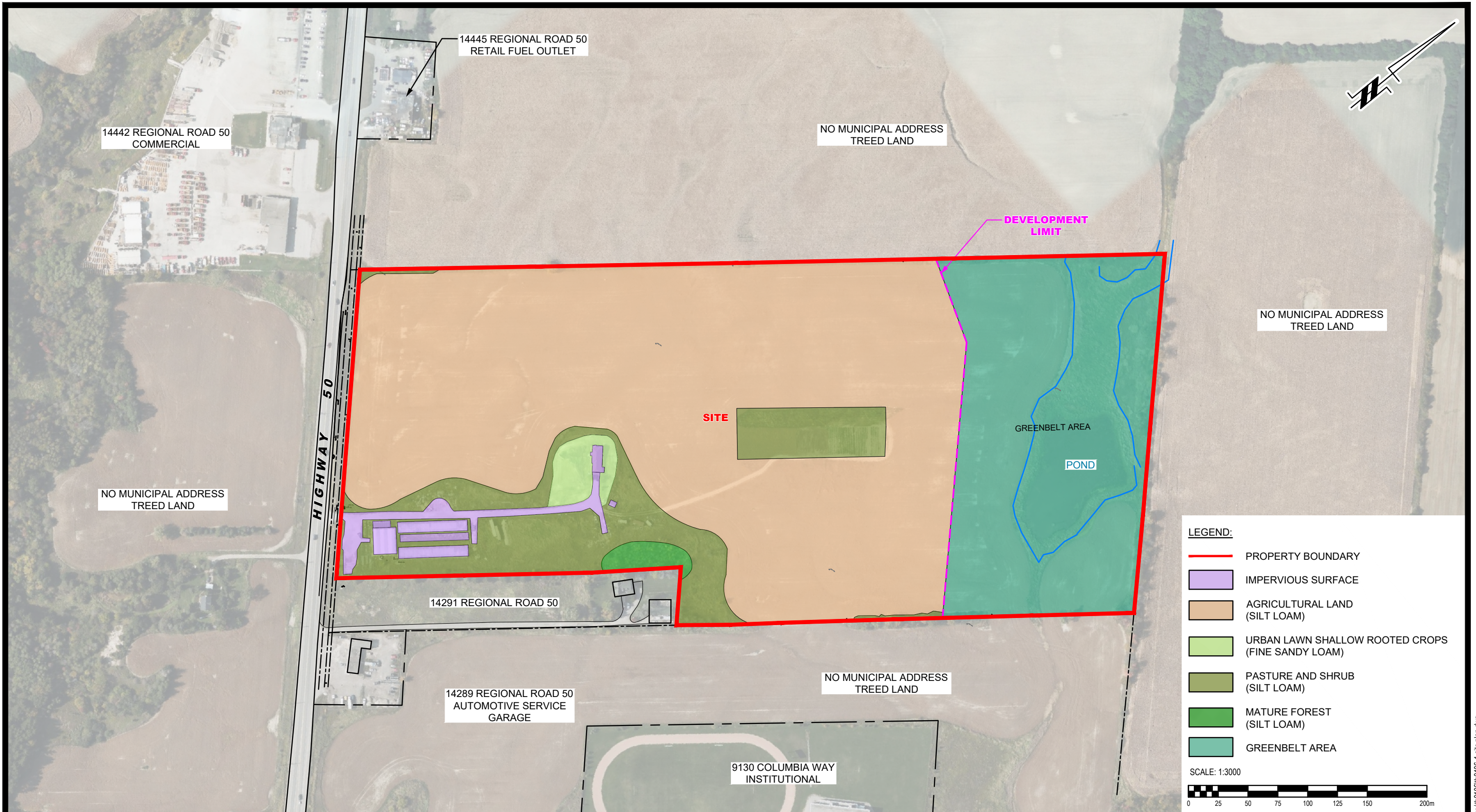
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Title: **GROUNDWATER CONTOUR PLAN**

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| Checked by:  | BN     | Dwg. No.:     | <b>TH0106-4</b> |
| Approved by: | ML     | Revision No.: |                 |



**LEGEND:**

- PROPERTY BOUNDARY
- IMPERVIOUS SURFACE
- AGRICULTURAL LAND (SILT LOAM)
- URBAN LAWN SHALLOW ROOTED CROPS (FINE SANDY LOAM)
- PASTURE AND SHRUB (SILT LOAM)
- MATURE FOREST (SILT LOAM)
- GREENBELT AREA

SCALE: 1:3000

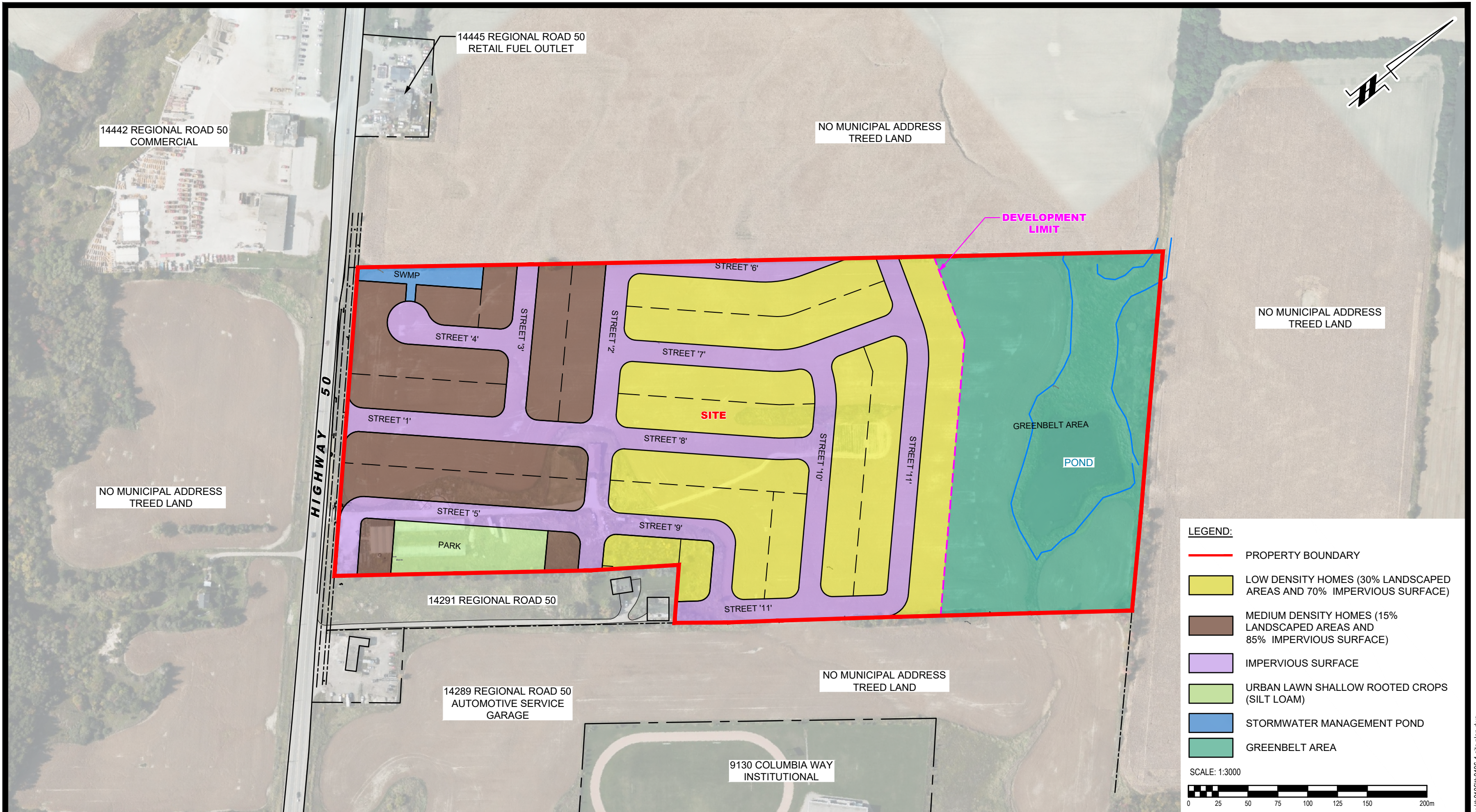
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**Title:**  
**PRE-DEVELOPMENT TERRAIN COMPOSITION PLAN**

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| Scale:       | 1:3000 | Date:         | 02/2026         |
| Drawn by:    | GK     | Report No.:   | TH0106-1        |
| Checked by:  | BN     | Dwg. No.:     | <b>TH0106-5</b> |
| Approved by: | ML     | Revision No.: |                 |



**LEGEND:**

- PROPERTY BOUNDARY
- LOW DENSITY HOMES (30% LANDSCAPED AREAS AND 70% IMPERVIOUS SURFACE)
- MEDIUM DENSITY HOMES (15% LANDSCAPED AREAS AND 85% IMPERVIOUS SURFACE)
- IMPERVIOUS SURFACE
- URBAN LAWN SHALLOW ROOTED CROPS (SILT LOAM)
- STORMWATER MANAGEMENT POND
- GREENBELT AREA

SCALE: 1:3000

**PATERSON GROUP**  
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 K2E 7T9  
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**POST-DEVELOPMENT TERRAIN COMPOSITION PLAN**

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| Drawn by:    | GK     | Report No.:   | TH0106-1        |
| Checked by:  | BN     | Dwg. No.:     | <b>TH0106-6</b> |
| Approved by: | ML     | Revision No.: |                 |



**LEGEND:**

- MECP WATER WELL LOCATIONS
- PROPERTY BOUNDARY

SCALE: 1:10000

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 K2E 7T9  
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**BOLTON, ONTARIO**

**MECP WATER WELL LOCATION PLAN**

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|--------------|---------|---------------|-----------------|
| Scale:       | 1:10000 | Date:         | 01/2026         |
| Drawn by:    | GK      | Report No.:   | TH0106-1        |
| Checked by:  | BN      | Dwg. No.:     | <b>TH0106-7</b> |
| Approved by: | ML      | Revision No.: |                 |

# APPENDIX 2

SOIL PROFILE AND TEST DATA SHEETS

DRAWING TG0257-1 - TEST HOLE LOCATION PLAN

COORD. SYS.: UTM ZONE 17N    EASTING: 600124.69    NORTHING: 4861227.07    ELEVATION: 261.60

PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada)    Geoid: HT2-2010    DATE: December 3, 2025    HOLE NO.: **BH 1-25**

| SAMPLE DESCRIPTION  | STRATA PLOT | DEPTH (m)       | SAMPLE       |              |                |                   | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |                                  |        | PIEZOMETER<br>CONSTRUCTION | ELEVATION (m) |                   |
|---|-------------|-----------------|--------------|--------------|----------------|-------------------|--|----------------------------------|--------|----------------------------|---------------|-------------------|
|   |             |                 | TYPE AND NO. | RECOVERY (%) | N OR RQD       | WATER CONTENT (%) | 20   | 40                               | 60     |                            |               | 80                |
|   |             |                 |              |              |                |                   | △ REMOULDED SHEAR STRENGTH (kPa)                   | ▲ UNDRAINED SHEAR STRENGTH (kPa) | PL (%) |                            |               | WATER CONTENT (%) |
|   |             |                 |              |              |                |                   |  |                                  |        |                            |               |                   |
| GROUND SURFACE  |             |                 |              |              |                |                   |  |                                  |        |                            |               |                   |
| <b>AGRICULTURALLY DISTURBED SOIL:</b> Brown silty clay to clayey silt with sand organics and rootlets |             | 0.69m [260.91m] | AU 1         |              |                | 18                |  |                                  |        | 261                        |               |                   |
| Compact, brown <b>SILTY SAND</b> to <b>SANDY SILT</b>   |             | 1               | SS 2         | 12           | 3-7-4-5<br>11  | 16                |  |                                  |        | 260                        |               |                   |
|   |             | 2               | SS 3         | 33           | 3-3-7-11<br>10 |                   |  |                                  |        | 259                        |               |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, grey silty clay to clayey silt with some sand and gravel     |             | 2.13m [259.47m] | SS 4         | 100          | 4-8-7-6<br>15  | 19                |  |                                  |        | 258                        |               |                   |
|   |             | 3               | SS 5         | 92           | 5-8-7-8<br>15  | 17                |  |                                  |        | 257                        |               |                   |
|   |             | 4               | SS 6         | 100          | 3-4-7-9<br>11  | 21                |  |                                  |        | 256                        |               |                   |
|   |             | 5               | SS 7         | 100          | 3-5-6-7<br>11  | 20                |  |                                  |        | 255                        |               |                   |
|   |             | 6               | SS 8         | 100          | 3-6-7-5<br>13  | 21                |  |                                  |        | 254                        |               |                   |
|   |             | 6.71m [254.89m] | SS 9         | 100          | 4-5-8-7<br>13  | 20                |  |                                  |        | 253                        |               |                   |
| End of Borehole   |             | 7               |              |              |                |                   |  |                                  |        | 252                        |               |                   |
| (BH Dry on - December 22, 2025)   |             | 8               |              |              |                |                   |  |                                  |        | 251                        |               |                   |
|   |             | 9               |              |              |                |                   |  |                                  |        |                            |               |                   |
|   |             | 10              |              |              |                |                   |  |                                  |        |                            |               |                   |
|   |             | 11              |              |              |                |                   |  |                                  |        |                            |               |                   |

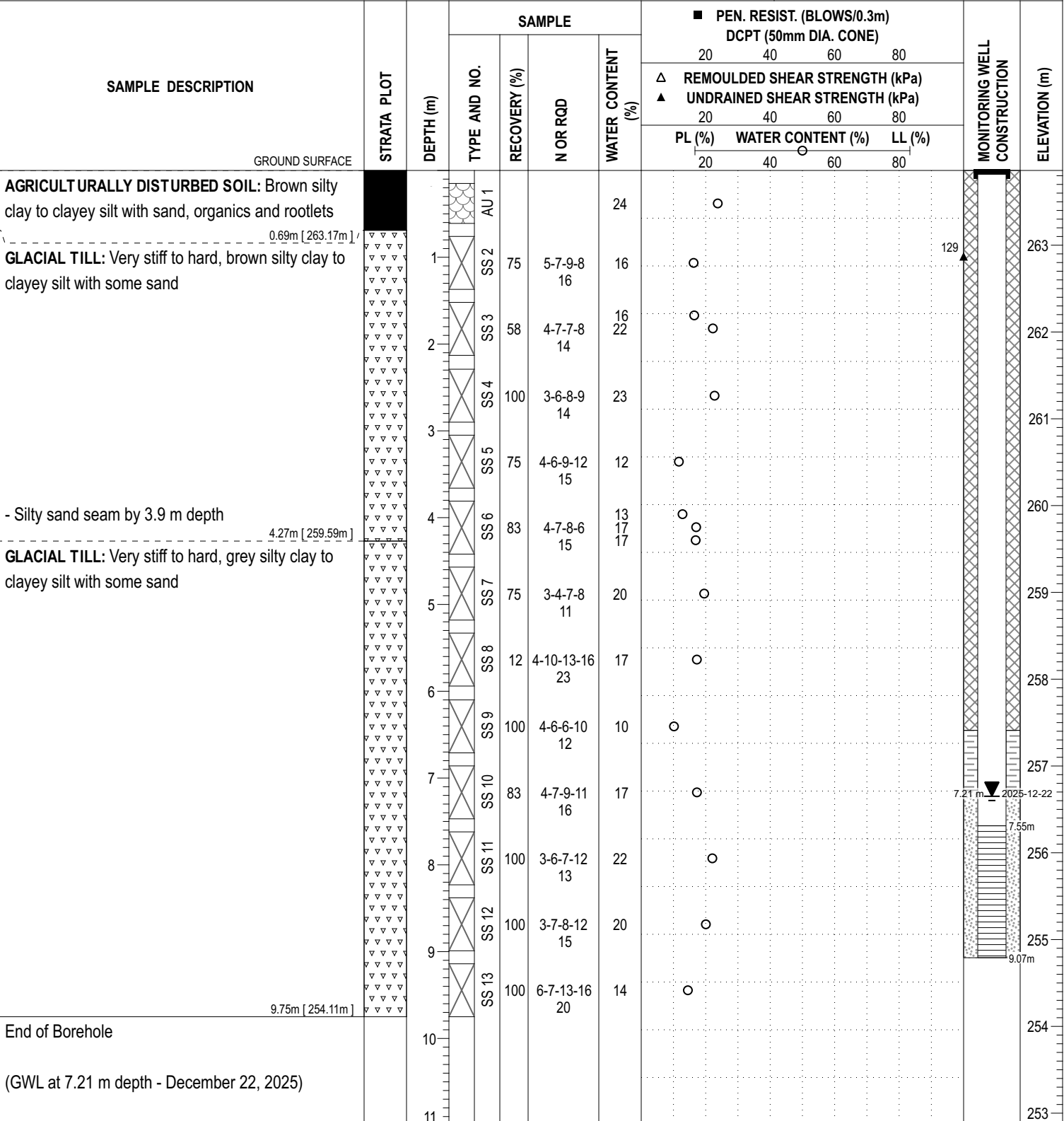
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COORD. SYS.: UTM ZONE 17N    EASTING: 600025.21    NORTHING: 4861290.43    ELEVATION: 263.86

PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada)    Geoid: HT2-2010    DATE: December 3, 2025    HOLE NO.: **BH 2-25**



DISCLAIMER: THE DATA PRESENTED IN THIS SHEET IS THE PROPERTY OF PATERSON GROUP AND THE CLIENT FOR WHOM IT WAS PRODUCED. THIS SHEET SHOULD BE READ IN CONJUNCTION WITH ITS CORRESPONDING REPORT. PATERSON GROUP IS NOT RESPONSIBLE FOR THE UNAUTHORIZED USE OF THIS DATA.

COORD. SYS.: UTM ZONE 17N    EASTING: 599976.62    NORTHING: 4861376.31    ELEVATION: 263.03

PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada)    Geoid: HT2-2010    DATE: December 3, 2025    HOLE NO.: **BH 3-25**

| SAMPLE DESCRIPTION  | STRATA PLOT | DEPTH (m) | SAMPLE       |              |                  | WATER CONTENT (%) | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |                                  |        | PIEZOMETER CONSTRUCTION | ELEVATION (m) |                   |
|---|-------------|-----------|--------------|--------------|------------------|-------------------|--|----------------------------------|--------|-------------------------|---------------|-------------------|
|   |             |           | TYPE AND NO. | RECOVERY (%) | N OR RQD         |                   | 20   | 40                               | 60     |                         |               | 80                |
|   |             |           |              |              |                  |                   | △ REMOULDED SHEAR STRENGTH (kPa)                   | ▲ UNDRAINED SHEAR STRENGTH (kPa) | PL (%) |                         |               | WATER CONTENT (%) |
|   |             |           |              |              |                  |                   | 20   | 40                               | 60     |                         |               | 80                |
| GROUND SURFACE  |             |           |              |              |                  |                   |  |                                  |        |                         |               |                   |
| <b>AGRICULTURALLY DISTURBED SOIL:</b> Brown silty clay to clayey silt with sand, organics and rootlets<br>0.61m [262.42m] |             |           | AU 1         |              |                  | 23                |  |                                  |        |                         | 263           |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, brown silty clay some sand, trace gravel   |             | 1         | SS 2         | 42           | 2-5-7-7<br>12    | 23                |  |                                  |        |                         | 262           |                   |
|   |             | 2         | SS 3         | 67           | 3-10-9-11<br>19  | 18                |  |                                  |        |                         | 261           |                   |
|   |             | 3         | SS 4         | 100          | 4-9-13-18<br>22  | 19                |  |                                  |        |                         | 260           |                   |
|   |             | 4         | SS 5         | 100          | 4-12-13-18<br>25 | 20                |  |                                  |        |                         | 259           |                   |
|   |             | 5         | SS 6         | 100          | 6-13-16-21<br>29 | 19                |  |                                  |        |                         | 258           |                   |
|   |             | 6         | SS 7         | 100          | 5-9-12-19<br>21  | 21                |  |                                  |        |                         | 257           |                   |
| 5.46m [257.57m]   |             |           | SS 8         | 100          | 4-8-10-13<br>18  | 19                |  |                                  |        |                         | 257           |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, grey silty clay, trace gravel  |             |           | SS 9         | 100          | 3-9-7-10<br>16   | 19                |  |                                  |        |                         | 256           |                   |
| 6.71m [256.32m]   |             |           |              |              |                  |                   |  |                                  |        |                         | 255           |                   |
| End of Borehole   |             | 7         |              |              |                  |                   |  |                                  |        |                         | 254           |                   |
| (BH Dry on - December 22, 2025)   |             | 8         |              |              |                  |                   |  |                                  |        |                         | 253           |                   |
|   |             | 9         |              |              |                  |                   |  |                                  |        |                         | 253           |                   |
|   |             | 10        |              |              |                  |                   |  |                                  |        |                         | 253           |                   |
|   |             | 11        |              |              |                  |                   |  |                                  |        |                         | 253           |                   |

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COORD. SYS.: UTM ZONE 17N    **EASTING:** 599877.34    **NORTHING:** 4861282.17    **ELEVATION:** 266.50

**PROJECT:** Proposed Residential Development    **FILE NO. :** TG0257

**ADVANCED BY:** Track Mounted Drill Rig

**REMARKS:** Datum: NAD1983 (Canada)    Geoid: HT2-2010    **DATE:** December 5, 2025    **HOLE NO. :** BH 4-25

| SAMPLE DESCRIPTION   | STRATA PLOT | DEPTH (m)       | SAMPLE       |              |                   |                   | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |                                  |        | PIEZOMETER<br>CONSTRUCTION | ELEVATION (m) |                   |
|--|-------------|-----------------|--------------|--------------|-------------------|-------------------|--|----------------------------------|--------|----------------------------|---------------|-------------------|
|  |             |                 | TYPE AND NO. | RECOVERY (%) | N OR RQD          | WATER CONTENT (%) | 20   | 40                               | 60     |                            |               | 80                |
|  |             |                 |              |              |                   |                   | △ REMOULDED SHEAR STRENGTH (kPa)                   | ▲ UNDRAINED SHEAR STRENGTH (kPa) | PL (%) |                            |               | WATER CONTENT (%) |
|  |             |                 |              |              |                   |                   |  |                                  |        |                            |               |                   |
| GROUND SURFACE   |             |                 |              |              |                   |                   |  |                                  |        |                            |               |                   |
| <b>AGRICULTURALLY DISTURBED SOIL:</b> Brown silty clay to clayey silt with sand, organics and rootlets |             | 0.69m [265.81m] | AU 1         |              |                   | 22                |  |                                  |        | 266                        |               |                   |
| Compact, brown <b>SILTY SAND</b>   |             | 1.12m [265.38m] | SS 2         | 83           | 9-10-10-13<br>20  | 11                |  |                                  |        | 265                        |               |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, brown silty clay, trace gravel                                |             |                 | SS 3         | 100          | 9-11-12-14<br>23  | 18                |  |                                  |        | 265                        |               |                   |
|  |             |                 | SS 4         | 100          | 6-11-15-22<br>26  | 15                |  |                                  |        | 264                        |               |                   |
| Dense, brown <b>SILTY SAND</b> to <b>SANDY SILT</b> , some clay  |             | 2.97m [263.53m] | SS 5         | 75           | 10-19-14-25<br>33 | 18                |  |                                  |        | 263                        |               |                   |
|  |             |                 | SS 6         | 83           | 5-12-10-10<br>22  | 21                |  |                                  |        | 263                        |               |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, grey silty clay to clayey silt with some sand and gravel      |             | 3.73m [262.77m] | SS 7         | 100          | 6-10-13-14<br>23  | 16                |  |                                  |        | 262                        |               |                   |
|  |             |                 | SS 8         | 75           | 7-9-9-7<br>18     | 19                |  |                                  |        | 261                        |               |                   |
|  |             |                 | SS 9         | 83           | 9-12-19-20<br>31  | 16                |  |                                  |        | 261                        |               |                   |
|  |             |                 |              |              |                   | 18                |  |                                  |        | 260                        |               |                   |
| End of Borehole  |             | 6.71m [259.79m] |              |              |                   |                   |  |                                  |        | 260                        |               |                   |
| (BH Dry on - December 22, 2025)  |             |                 |              |              |                   |                   |  |                                  |        | 259                        |               |                   |
|  |             |                 |              |              |                   |                   |  |                                  |        | 258                        |               |                   |
|  |             |                 |              |              |                   |                   |  |                                  |        | 257                        |               |                   |
|  |             |                 |              |              |                   |                   |  |                                  |        | 256                        |               |                   |

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COORD. SYS.: UTM ZONE 17N    EASTING: 599937.51    NORTHING: 4861174.35    ELEVATION: 264.25

PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada)    Geoid: HT2-2010    DATE: December 5, 2025    HOLE NO.: **BH 5-25**

| SAMPLE DESCRIPTION   | STRATA PLOT | DEPTH (m)       | SAMPLE       |                   |                  |                   | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |    |    | MONITORING WELL<br>CONSTRUCTION | ELEVATION (m) |    |
|--|-------------|-----------------|--------------|-------------------|------------------|-------------------|--|----|----|---------------------------------|---------------|----|
|  |             |                 | TYPE AND NO. | RECOVERY (%)      | N OR RQD         | WATER CONTENT (%) | 20   | 40 | 60 |                                 |               | 80 |
|  |             |                 |              |                   |                  |                   | △  | ▲  | ○  |                                 |               | ○  |
|  |             |                 | PL (%)       | WATER CONTENT (%) | LL (%)           |                   |  |    |    |                                 |               |    |
| GROUND SURFACE   |             |                 |              |                   |                  |                   |  |    |    |                                 |               |    |
| AGRICULTURALLY DISTURBED SOIL: Brown silty sand to sandy silt with clay, organics and rootlets |             | 0.69m [263.56m] | AU 1         |                   |                  | 18                |  |    |    | 264                             |               |    |
| GLACIAL TILL: Very stiff to hard, brown silty clay, some sand, trace gravel                    |             | 1.83m [262.42m] | SS 2         | 67                | 5-7-8-9<br>15    | 17                |  |    |    | 263                             |               |    |
| Compact, brown SILTY SAND  |             | 2.59m [261.66m] | SS 3         | 83                | 4-6-8-8<br>14    | 20                |  |    |    | 262                             |               |    |
| Hard, brown SILTY CLAY   |             | 2.74m [261.51m] | SS 4         | 100               | 6-12-13-16<br>25 | 18                |  |    |    | 261                             |               |    |
| Compact, brown SILTY SAND, some clay   |             | 3.51m [260.74m] | SS 5         | 75                | 8-13-15-12<br>28 | 18                |  |    |    | 261                             |               |    |
| GLACIAL TILL: Very stiff to hard, grey silty clay to clayey silt with some sand and gravel     |             | 4.27m [260.00m] | SS 6         | 100               | 6-8-11-11<br>19  | 18                |  |    |    | 260                             |               |    |
|  |             | 5.72m [259.00m] | SS 7         | 83                | 4-7-9-14<br>16   | 19                |  |    |    | 259                             |               |    |
|  |             | 6.71m [257.54m] | SS 8         | 83                | 5-5-7-8<br>12    | 20                |  |    |    | 259                             |               |    |
|  |             |                 | SS 9         | 92                | 4-5-8-8<br>13    | 22                |  |    |    | 258                             |               |    |
| End of Borehole  |             |                 |              |                   |                  |                   |  |    |    | 257                             |               |    |
| (BH Dry on - December 22, 2025)  |             |                 |              |                   |                  |                   |  |    |    | 256                             |               |    |
|  |             |                 |              |                   |                  |                   |  |    |    | 255                             |               |    |
|  |             |                 |              |                   |                  |                   |  |    |    | 254                             |               |    |

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COORD. SYS.: UTM ZONE 17N    EASTING: 599998.26    NORTHING: 4861053.38    ELEVATION: 264.09

PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada)    Geoid: HT2-2010    DATE: December 5, 2025    HOLE NO.: **BH 6-25**

| SAMPLE DESCRIPTION  | STRATA PLOT | DEPTH (m) | SAMPLE       |              |                  |                   | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |                                  |        | MONITORING WELL<br>CONSTRUCTION | ELEVATION (m) |                   |
|---|-------------|-----------|--------------|--------------|------------------|-------------------|--|----------------------------------|--------|---------------------------------|---------------|-------------------|
|   |             |           | TYPE AND NO. | RECOVERY (%) | N OR RQD         | WATER CONTENT (%) | 20   | 40                               | 60     |                                 |               | 80                |
|   |             |           |              |              |                  |                   | △ REMOULDED SHEAR STRENGTH (kPa)                   | ▲ UNDRAINED SHEAR STRENGTH (kPa) | PL (%) |                                 |               | WATER CONTENT (%) |
|   |             |           |              |              |                  |                   |  |                                  |        |                                 |               |                   |
| GROUND SURFACE  |             |           |              |              |                  |                   |  |                                  |        |                                 |               |                   |
| <b>AGRICULTURALLY DISTURBED SOIL:</b> Brown silty clay to clayey silt with sand, organics and rootlets<br>0.61m [263.48m] |             |           | AU 1         |              |                  |                   | 17   | ○                                |        | 264                             |               |                   |
| <b>GLACIAL TILL:</b> Stiff to hard, brown silty clay with some sand and gravel  |             | 1         | SS 2         | 100          | 7-10-16-23<br>26 |                   | 16   | ○                                |        | 263                             |               |                   |
|   |             | 2         | SS 3         | 100          | 6-10-16-23<br>26 |                   | 17   | ○                                |        | 262                             |               |                   |
|   |             | 3         | SS 4         | 100          | 4-11-17-22<br>28 |                   | 19   | ○                                |        | 261                             |               |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, grey silty clay to clayey silt with some sand and gravel<br>3.00m [261.09m]      |             | 4         | SS 5         | 100          | 3-6-8-10<br>14   |                   | 17   | ○                                |        | 260                             |               |                   |
|   |             | 5         | SS 6         | 92           | 4-5-7-9<br>12    |                   | 19   | ○                                |        | 259                             |               |                   |
|   |             | 6         | SS 7         | 100          | 3-6-9-13<br>15   |                   | 19   | ○                                |        | 258                             |               |                   |
|   |             | 7         | SS 8         | 100          | 5-7-9-9<br>16    |                   | 19   | ○                                |        | 257                             |               |                   |
|   |             | 8         | SS 9         | 100          | 4-6-10-11<br>16  |                   |  |                                  |        | 256                             |               |                   |
| 6.71m [257.38m]   |             | 9         |              |              |                  |                   |  |                                  |        | 255                             |               |                   |
| End of Borehole   |             | 10        |              |              |                  |                   |  |                                  |        | 254                             |               |                   |
| (BH Dry on - December 22, 2025)   |             | 11        |              |              |                  |                   |  |                                  |        |                                 |               |                   |

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COORD. SYS.: UTM ZONE 17N    EASTING: 599907.52    NORTHING: 4861030.66    ELEVATION: 265.30

PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada)    Geoid: HT2-2010    DATE: December 8, 2025    HOLE NO.: **BH 7-25**

| SAMPLE DESCRIPTION  | STRATA PLOT | DEPTH (m)       | SAMPLE       |              |                  | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |    |    | MONITORING WELL<br>CONSTRUCTION | ELEVATION (m) |        |                   |
|---|-------------|-----------------|--------------|--------------|------------------|--|----|----|---------------------------------|---------------|--------|-------------------|
|   |             |                 | TYPE AND NO. | RECOVERY (%) | N OR RQD         | WATER CONTENT (%)                                  | 20 | 40 |                                 |               | 60     | 80                |
|   |             |                 |              |              |                  |  | △  | ▲  |                                 |               | PL (%) | WATER CONTENT (%) |
|   |             |                 |              |              |                  |  |    |    |                                 |               |        |                   |
| GROUND SURFACE  |             |                 |              |              |                  |  |    |    |                                 |               |        |                   |
| FILL: Stiff, brown silty sand with clay and gravel<br>0.61m [264.69m] |             |                 | AU 1         |              |                  |  | 17 | ○  | 265                             |               |        |                   |
| GLACIAL TILL: Stiff to hard, brown silty clay, some sand and gravel   |             | 1               | SS 2         | 50           | 3-2-3-4<br>5     |  |    |    |                                 | 264           |        |                   |
|   |             | 2               | SS 3         | 50           | 3-3-6-9<br>9     |  | 24 | ○  |                                 | 263           |        |                   |
|   |             | 3               | SS 4         | 100          | 5-7-10-12<br>17  |  | 17 | ○  |                                 | 262           |        |                   |
|   |             |                 | SS 5         | 100          | 5-11-13-14<br>24 |  | 18 | ○  |                                 | 261           |        |                   |
|   |             | 4               | SS 6         | 67           | 4-8-8-14<br>16   |  | 17 | ○  |                                 | 260           |        |                   |
|   |             |                 | SS 7         | 42           | 5-10-17-15<br>27 |  | 19 | ○  |                                 | 259           |        |                   |
|   |             | 5               | SS 8         | 100          | 3-5-7-10<br>12   |  | 25 | ○  |                                 | 258           |        |                   |
|   |             |                 | SS 9         | 83           | 4-6-8-8<br>14    |  | 20 | ○  |                                 | 257           |        |                   |
|   |             | 6.71m [258.59m] |              | 6            |                  |  |    |    |                                 |               | 256    |                   |
| End of Borehole<br>(GWL at 3.03 m depth - December 22, 2025)          |             | 7               |              |              |                  |  |    |    | 255                             |               |        |                   |

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COORD. SYS.: UTM ZONE 17N    **EASTING:** 599873.80    **NORTHING:** 4861067.65    **ELEVATION:** 266.20

**PROJECT:** Proposed Residential Development    **FILE NO. :** TG0257

**ADVANCED BY:** Track Mounted Drill Rig

**REMARKS:** Datum: NAD1983 (Canada)    Geoid: HT2-2010    **DATE:** December 8, 2025    **HOLE NO. :** BH 8-25

| SAMPLE DESCRIPTION   | STRATA PLOT | DEPTH (m) | SAMPLE       |              |                  | WATER CONTENT (%) | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |                                  |        | MONITORING WELL<br>CONSTRUCTION | ELEVATION (m) |                   |
|--|-------------|-----------|--------------|--------------|------------------|-------------------|--|----------------------------------|--------|---------------------------------|---------------|-------------------|
|  |             |           | TYPE AND NO. | RECOVERY (%) | N OR RQD         |                   | 20   | 40                               | 60     |                                 |               | 80                |
|  |             |           |              |              |                  |                   | △ REMOULDED SHEAR STRENGTH (kPa)                   | ▲ UNDRAINED SHEAR STRENGTH (kPa) | PL (%) |                                 |               | WATER CONTENT (%) |
|  |             |           |              |              |                  |                   | 20   | 40                               | 60     |                                 |               | 80                |
| GROUND SURFACE   |             |           |              |              |                  |                   |  |                                  |        |                                 |               |                   |
| <b>TOPSOIL</b> 0.05m [266.15m]   |             |           | AU 1         |              |                  | 9                 |  |                                  |        |                                 | 266           |                   |
| <b>FILL:</b> Brown silty sand with clay and organics   |             | 1         | SS 2         | 42           | 3-5-5-4<br>10    | 19                |  |                                  |        |                                 | 265           |                   |
|  |             | 2         | SS 3         | 75           | 8-4-7-6<br>11    | 16                |  |                                  |        |                                 | 264           |                   |
|  |             | 3         | SS 4         | 100          | 6-9-11-14<br>20  | 19<br>24          |  |                                  |        |                                 | 263           |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, brown silty clay to clayey silt with some sand and gravel |             | 4         | SS 5         | 83           | 3-7-10-13<br>17  | 18                |  |                                  |        |                                 | 263           |                   |
|  |             | 5         | SS 6         | 100          | 4-16-15-18<br>31 | 17                |  |                                  |        |                                 | 262           |                   |
|  |             | 6         | SS 7         | 100          | 5-17-27-23<br>44 | 20                |  |                                  |        |                                 | 261           |                   |
| <b>Dense, brown SILTY SAND</b> with clay   |             | 7         | SS 8         | 100          | 3-6-12-15<br>18  | 13                |  |                                  |        |                                 | 261           |                   |
| <b>GLACIAL TILL:</b> Very stiff, grey silty clay to clayey silt with some sand and gravel          |             | 8         | SS 9         | 75           | 2-6-8-9<br>14    | 19                |  |                                  |        |                                 | 260           |                   |
| <b>End of Borehole</b>   |             | 9         |              |              |                  |                   |  |                                  |        |                                 | 259           |                   |
| (GWL at 4.35 m depth - December 22, 2025)  |             | 10        |              |              |                  |                   |  |                                  |        |                                 | 258           |                   |
|  |             | 11        |              |              |                  |                   |  |                                  |        |                                 | 257           |                   |
|  |             |           |              |              |                  |                   |  |                                  |        |                                 | 256           |                   |

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COORD. SYS.: UTM ZONE 17N    EASTING: 599849.33    NORTHING: 4860935.63    ELEVATION: 265.27

PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada)    Geoid: HT2-2010    DATE: December 8, 2025    HOLE NO.: **BH 9-25**

| SAMPLE DESCRIPTION   | STRATA PLOT | DEPTH (m) | SAMPLE       |              |                  |                   | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |                                  |        | PIEZOMETER<br>CONSTRUCTION | ELEVATION (m) |                   |
|--|-------------|-----------|--------------|--------------|------------------|-------------------|--|----------------------------------|--------|----------------------------|---------------|-------------------|
|  |             |           | TYPE AND NO. | RECOVERY (%) | N OR RQD         | WATER CONTENT (%) | 20   | 40                               | 60     |                            |               | 80                |
|  |             |           |              |              |                  |                   | △ REMOULDED SHEAR STRENGTH (kPa)                   | ▲ UNDRAINED SHEAR STRENGTH (kPa) | PL (%) |                            |               | WATER CONTENT (%) |
|  |             |           |              |              |                  |                   |  |                                  |        |                            |               |                   |
| GROUND SURFACE   |             |           |              |              |                  |                   |  |                                  |        |                            |               |                   |
| <b>TOPSOIL</b><br>0.05m [265.22m]  |             |           | AU 1         |              |                  |                   | 14   |                                  |        | 265                        |               |                   |
| <b>GLACIAL TILL:</b> Stiff to very stiff, brown silty clay to clayey silt with trace of organics   |             | 1         | SS 2         | 50           | 5-6-6-6<br>12    |                   | 23   |                                  |        | 264                        |               |                   |
|  |             | 2         | SS 3         | 75           | 2-3-3-4<br>6     |                   | 20   |                                  |        | 263                        |               |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, brown silty clay to clayey silt with some sand and gravel |             | 3         | SS 4         | 83           | 4-8-12-13<br>20  |                   | 20   |                                  |        | 262                        |               |                   |
|  |             | 4         | SS 5         | 100          | 3-6-9-12<br>15   |                   | 17   |                                  |        | 261                        |               |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, grey silty clay to clayey silt with some sand and gravel  |             | 5         | SS 6         | 100          | 3-9-12-14<br>21  |                   | 17   |                                  |        | 260                        |               |                   |
|  |             | 6         | SS 7         | 100          | 2-5-10-11<br>15  |                   | 20   |                                  |        | 259                        |               |                   |
|  |             | 6         | SS 8         | 100          | 5-10-10-10<br>20 |                   | 15   |                                  |        | 258                        |               |                   |
|  |             | 6         | SS 9         | 83           | 4-10-6-6<br>16   |                   | 19   |                                  |        | 257                        |               |                   |
| <b>End of Borehole</b>   |             | 7         |              |              |                  |                   |  |                                  |        | 256                        |               |                   |
|  |             | 8         |              |              |                  |                   |  |                                  |        | 255                        |               |                   |
|  |             | 9         |              |              |                  |                   |  |                                  |        | 254                        |               |                   |
|  |             | 10        |              |              |                  |                   |  |                                  |        | 253                        |               |                   |
|  |             | 11        |              |              |                  |                   |  |                                  |        | 252                        |               |                   |

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COORD. SYS.: UTM ZONE 17N    EASTING: 599751.17    NORTHING: 4860975.99    ELEVATION: 263.78

PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada)    Geoid: HT2-2010    DATE: December 9, 2025    HOLE NO.: **BH10-25**

| SAMPLE DESCRIPTION   | STRATA PLOT | DEPTH (m)       | SAMPLE       |              |                  |                   | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |    |        | MONITORING WELL<br>CONSTRUCTION | ELEVATION (m) |                   |
|--|-------------|-----------------|--------------|--------------|------------------|-------------------|--|----|--------|---------------------------------|---------------|-------------------|
|  |             |                 | TYPE AND NO. | RECOVERY (%) | N OR RQD         | WATER CONTENT (%) | 20   | 40 | 60     |                                 |               | 80                |
|  |             |                 |              |              |                  |                   | △  | ▲  | PL (%) |                                 |               | WATER CONTENT (%) |
|  |             |                 |              |              |                  |                   |  |    |        |                                 |               |                   |
| GROUND SURFACE   |             |                 |              |              |                  |                   |  |    |        |                                 |               |                   |
| <b>AGRICULTURALLY DISTURBED SOIL:</b> Brown silty clay to clayey silt with sand, organics and rootlets |             | 0.71m [263.07m] | AU 1         |              |                  | 21                |  |    |        |                                 |               |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, brown silty clay with some sand and gravel                    |             | 1               | SS 2         | 33           | 2-8-10-16<br>18  | 19                |  |    |        | 263                             |               |                   |
|  |             | 2               | SS 3         | 83           | 2-9-9-13<br>18   | 21                |  |    |        | 262                             |               |                   |
|  |             | 3               | SS 4         | 100          | 3-10-10-12<br>20 | 19                |  |    |        | 261                             |               |                   |
|  |             | 3.35m [260.43m] | SS 5         | 100          | 3-7-7-8<br>14    | 21<br>14          |  |    |        | 260                             |               |                   |
| <b>GLACIAL TILL:</b> Stiff to very stiff, grey silty clay to clayey silt with some sand and gravel     |             | 4               | SS 6         | 100          | 2-3-6-6<br>9     | 20                |  |    |        | 259                             |               |                   |
|  |             | 5               | SS 7         | 100          | 2-3-6-7<br>9     | 21                |  |    |        | 258                             |               |                   |
|  |             | 5.94m [257.84m] | SS 8         | 67           | 3-5-7-8<br>12    | 20                |  |    |        | 257                             |               |                   |
| End of Borehole  |             |                 |              |              |                  |                   |  |    |        | 256                             |               |                   |
| (GWL at 1.50 m depth - December 22, 2025)  |             |                 |              |              |                  |                   |  |    |        | 255                             |               |                   |
|  |             |                 |              |              |                  |                   |  |    |        | 254                             |               |                   |
|  |             |                 |              |              |                  |                   |  |    |        | 253                             |               |                   |

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COORD. SYS.: UTM ZONE 17N    EASTING: 599818.32    NORTHING: 4861156.18    ELEVATION: 265.19

PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada)    Geoid: EGM96 (Global)    DATE: January 28, 2025    HOLE NO.: **BH11-25**

| SAMPLE DESCRIPTION  | STRATA PLOT | DEPTH (m) | SAMPLE       |              |                  |                   | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |    |        | MONITORING WELL<br>CONSTRUCTION | ELEVATION (m) |                   |
|---|-------------|-----------|--------------|--------------|------------------|-------------------|--|----|--------|---------------------------------|---------------|-------------------|
|   |             |           | TYPE AND NO. | RECOVERY (%) | N OR RQD         | WATER CONTENT (%) | 20   | 40 | 60     |                                 |               | 80                |
|   |             |           |              |              |                  |                   | △  | ▲  | PL (%) |                                 |               | WATER CONTENT (%) |
|   |             |           |              |              |                  |                   |  |    |        |                                 |               |                   |
| GROUND SURFACE  |             |           |              |              |                  |                   |  |    |        |                                 |               |                   |
| <b>AGRICULTURALLY DISTURBED SOIL:</b> Brown silty clay to clayey silt with sand, organics and rootlets<br>0.69m [264.50m] |             |           |              |              |                  |                   |  |    |        | 265                             |               |                   |
| <b>GLACIAL TILL:</b> Hard to very stiff, brown silty clay with some sand and gravel                                       |             | 1         | SS 2         | 58           | 4-6-11-14<br>17  | 19                |  |    |        | 264                             |               |                   |
|   |             | 2         | SS 3         | 100          | 2-7-10-11<br>17  | 18                |  |    |        | 263                             |               |                   |
|   |             | 3         | SS 4         | 75           | P                | 16                |  |    | 249    | 262                             |               |                   |
| 2.79m [262.40m]   |             | 3         | SS 5         | 83           | 2-12-11-12<br>23 | 20                |  |    |        | 262                             |               |                   |
| <b>GLACIAL TILL:</b> Very stiff to hard, grey silty clay to clayey silt with some sand and gravel                         |             | 4         | SS 6         | 71           | 7-11-13-16<br>24 | 17                |  |    |        | 261                             |               |                   |
|   |             | 5         | SS 7         | 100          | 4-9-17-21<br>26  | 18                |  |    | 4.45 m | 260                             |               |                   |
|   |             | 6         | SS 8         | 100          | 3-10-16-17<br>26 | 19                |  |    |        | 259                             |               |                   |
| 6.71m [258.48m]   |             | 6         | SS 9         | 100          | 3-12-13-21<br>25 | 18                |  |    |        | 259                             |               |                   |
| End of Borehole   |             | 7         |              |              |                  |                   |  |    |        | 258                             |               |                   |
| (BH Dry on - February 4, 2025)  |             | 8         |              |              |                  |                   |  |    |        | 257                             |               |                   |
| (GWL at 4.45 m depth - December 22, 2025)   |             | 8         |              |              |                  |                   |  |    |        | 257                             |               |                   |
|   |             | 9         |              |              |                  |                   |  |    |        | 256                             |               |                   |
|   |             | 10        |              |              |                  |                   |  |    |        | 255                             |               |                   |
|   |             | 11        |              |              |                  |                   |  |    |        | 255                             |               |                   |

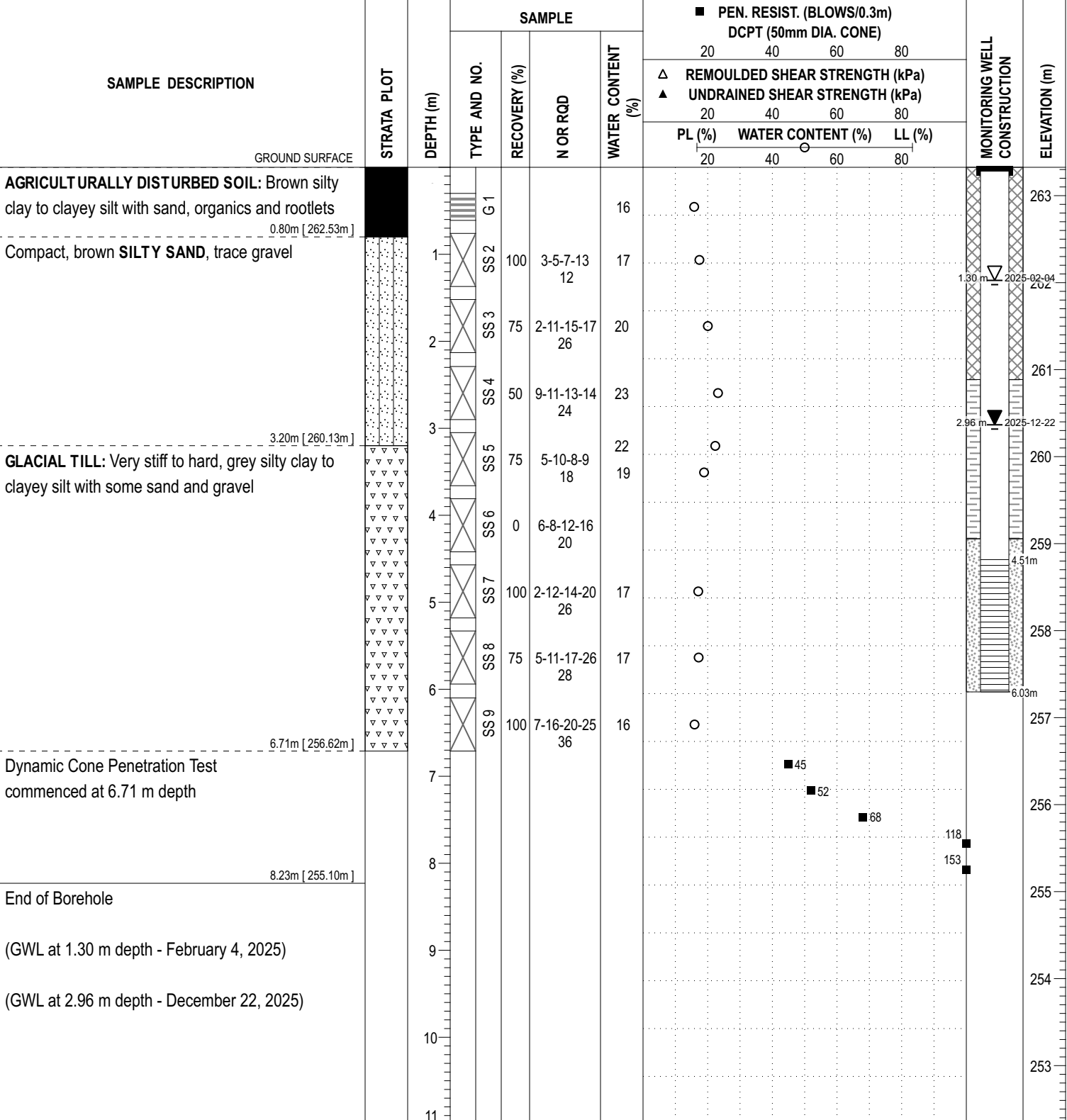
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**COORD. SYS.:** UTM ZONE 17N    **EASTING:** 600055.24    **NORTHING:** 4861150.74    **ELEVATION:** 263.33

**PROJECT:** Proposed Residential Development    **FILE NO. :** TG0257

**ADVANCED BY:** Track Mounted Drill Rig

**REMARKS:** Datum: NAD1983 (Canada)    Geoid: EGM96 (Global)    **DATE:** January 28, 2025    **HOLE NO. :** BH12-25



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COORD. SYS.: UTM ZONE 17N    EASTING: 599822.52    NORTHING: 4860874.63    ELEVATION: 265.25

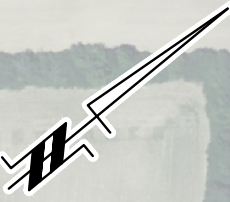
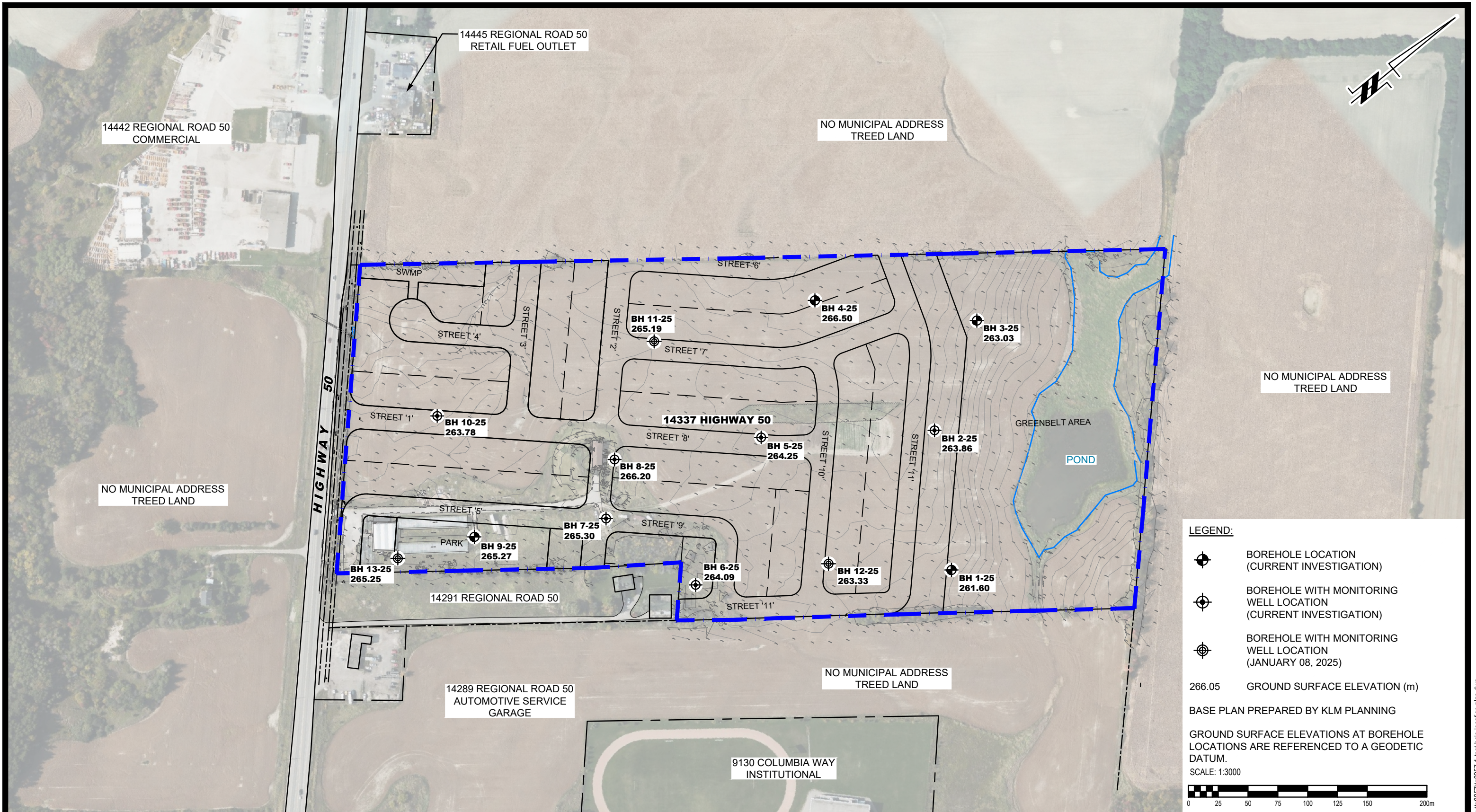
PROJECT: Proposed Residential Development    FILE NO.: **TG0257**

ADVANCED BY: Track Mounted Drill Rig




REMARKS: Datum: NAD1983 (Canada)    Geoid: EGM96 (Global)    DATE: January 28, 2025    HOLE NO.: **BH13-25**

| SAMPLE DESCRIPTION  | STRATA PLOT | DEPTH (m) | SAMPLE       |                   |                  | PEN. RESIST. (BLOWS/0.3m)<br>DCPT (50mm DIA. CONE) |    |    | MONITORING WELL<br>CONSTRUCTION | ELEVATION (m) |    |    |
|---|-------------|-----------|--------------|-------------------|------------------|--|----|----|---------------------------------|---------------|----|----|
|   |             |           | TYPE AND NO. | RECOVERY (%)      | N OR RQD         | WATER CONTENT (%)                                  | 20 | 40 |                                 |               | 60 | 80 |
|   |             |           |              |                   |                  |  | △  | ▲  |                                 |               | ○  | ○  |
|   |             |           | PL (%)       | WATER CONTENT (%) | LL (%)           |  |    |    |                                 |               |    |    |
| GROUND SURFACE  |             |           |              |                   |                  |  |    |    |                                 |               |    |    |
| TOPSOIL<br>0.05m [265.20m]  |             |           |              |                   |                  |  |    |    |                                 |               |    |    |
| GLACIAL TILL: Very stiff to hard, brown silty clay to clayey silt with some sand and gravel |             | 1         | SS 2         | 100               | 2-5-10-16<br>15  | 20   |    |    |                                 | 265           |    |    |
|   |             | 2         | SS 3         | 100               | 3-9-10-16<br>19  | 19   |    |    |                                 | 263           |    |    |
|   |             | 3         | SS 4         | 100               | 4-12-18-29<br>30 | 19   |    |    |                                 | 262           |    |    |
|   |             | 4         | SS 5         | 100               | 3-8-14-16<br>22  | 19   |    |    |                                 | 262           |    |    |
|   |             | 5         | SS 6         | 8                 | 3-6-11-14<br>17  | 20   |    |    |                                 | 261           |    |    |
| GLACIAL TILL: Very stiff to hard, grey silty clay to clayey silt with some sand and gravel  |             | 5         | SS 7         | 100               | 3-8-17-28<br>25  | 19   |    |    |                                 | 260           |    |    |
|   |             | 6         | SS 8         | 100               | 3-7-14-13<br>21  | 23   |    |    |                                 | 260           |    |    |
|   |             | 6         | SS 9         |                   | 5-6-14-18<br>20  | 18   |    |    |                                 | 259           |    |    |
| End of Borehole   |             | 7         |              |                   |                  |  |    |    |                                 | 258           |    |    |
| (GWL at 1.33 m depth - February 4, 2025)  |             | 8         |              |                   |                  |  |    |    |                                 | 257           |    |    |
| (GWL at 1.04 m depth - January 08, 2026)  |             | 8         |              |                   |                  |  |    |    |                                 | 257           |    |    |
|   |             | 9         |              |                   |                  |  |    |    |                                 | 256           |    |    |
|   |             | 10        |              |                   |                  |  |    |    |                                 | 255           |    |    |
|   |             | 11        |              |                   |                  |  |    |    |                                 | 255           |    |    |

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**LEGEND:**

-  BOREHOLE LOCATION (CURRENT INVESTIGATION)
-  BOREHOLE WITH MONITORING WELL LOCATION (CURRENT INVESTIGATION)
-  BOREHOLE WITH MONITORING WELL LOCATION (JANUARY 08, 2025)
- 266.05 GROUND SURFACE ELEVATION (m)

BASE PLAN PREPARED BY KLM PLANNING

GROUND SURFACE ELEVATIONS AT BOREHOLE LOCATIONS ARE REFERENCED TO A GEODETIC DATUM.

SCALE: 1:3000




9 AURIGA DRIVE  
OTTAWA, ON  
K2E 7T9  
TEL: (613) 226-7381

| NO. | REVISIONS | DATE | INITIAL |
|-----|-----------|------|---------|
|     |           |      |         |
|     |           |      |         |
|     |           |      |         |

**TIFFANY ROX NORTH HILL LTD.**  
**GEOTECHNICAL INVESTIGATION**  
**PROPOSED RESIDENTIAL DEVELOPMENT**  
**14337 HIGHWAY 50**

**BOLTON,**  
 Title:

**ONTARIO**

**TEST HOLE LOCATION PLAN**

|              |        |               |                 |
|--------------|--------|---------------|-----------------|
| Scale:       | 1:3000 | Date:         | 01/2026         |
| Drawn by:    | YA     | Report No.:   | TG0257-1        |
| Checked by:  | BN     | Dwg. No.:     | <b>TG0257-1</b> |
| Approved by: | DG     | Revision No.: |                 |

# APPENDIX 3

Table 5 - Pre-Development Annual Water Budget Calculations

Table 6 - Post-Development Annual Water Budget Calculations

Sample Calculations - Dupuit Forchheimer

Hydraulic Conductivity Results - Falling and Rising Head Tests

Water Quality Results

Table 5 - Pre-Development Annual Water Budget Calculations

| Land Use Unit                  | Area (m <sup>2</sup> ) | Water Surplus (mm) | Topography Factor | Soil Factor | Vegetation Factor | Infiltration Factor | Runoff Factor | Total Infiltration (mm/year) | Total Infiltration (L/year) | Total Runoff (mm/year) | Total Runoff (L/year) |
|--------------------------------|------------------------|--------------------|-------------------|-------------|-------------------|---------------------|---------------|------------------------------|-----------------------------|------------------------|-----------------------|
| Agricultural Land (Silt Loam)  | 109,135                | 197                | 0.2               | 0.15        | 0.15              | 0.5                 | 0.5           | 98.5                         | 10,749,817                  | 98.5                   | 10,749,817            |
| Mature Trees (Silt Loam)       | 1,546                  | 162                | 0.2               | 0.15        | 0.2               | 0.55                | 0.45          | 89.1                         | 137,737                     | 72.9                   | 112,694               |
| Pasture and Shrubs (Silt Loam) | 23,215                 | 183                | 0.2               | 0.15        | 0.15              | 0.5                 | 0.5           | 91.5                         | 2,124,129                   | 91.5                   | 2,124,129             |
| Urban Lawns (Fine Sand Loam)   | 2,413                  | 279                | 0.2               | 0.3         | 0.1               | 0.6                 | 0.4           | 167.4                        | 403,960                     | 111.6                  | 269,306               |
| Impervious Surfaces            | 4,760                  | 660                | 0                 | 0           | 0                 | 0                   | 1             | 0                            | 0                           | 660                    | 3,141,455             |
| <b>Total</b>                   | <b>141,069</b>         |                    |                   |             |                   |                     |               |                              | <b>13,415,643</b>           |                        | <b>16,397,402</b>     |

Table 6 - Post-Development Annual Water Budget Calculations

| Land Use Unit                               | Area (m <sup>2</sup> ) | Water Surplus (mm) | Topography Factor | Soil Factor | Vegetation Factor | Infiltration Factor | Runoff Factor | Total Infiltration (mm/year) | Total Infiltration (L/year) | Total Runoff (mm/year) | Total Runoff (L/year) |
|---|------------------------|--------------------|-------------------|-------------|-------------------|---------------------|---------------|------------------------------|-----------------------------|------------------------|-----------------------|
| Impervious Surfaces                         | 111,904                | 660                | 0                 | 0           | 0                 | 0                   | 1             | 0                            | 0                           | 660.0                  | 73,856,640            |
| Urban Lawn/Shallow Rooted Crops (Silt Loam) | 27,411                 | 238                | 0.2               | 0.15        | 0.1               | 0.45                | 0.55          | 107.1                        | 2,935,718                   | 130.9                  | 3,588,100             |
| Stormwater Management Pond                  | 1,754                  | 244                | 0                 | 0           | 0                 | 0                   | 1             | 0                            | 0                           | 244                    | 428,064               |
| <b>Totals</b>                               | <b>141,069</b>         |                    |                   |             |                   |                     |               |                              | <b>2,935,718</b>            |                        | <b>77,872,804</b>     |
| <b>Difference (L/year)</b>                  |                        |                    |                   |             |                   |                     |               |                              | <b>-10,479,925</b>          |                        | <b>61,475,402</b>     |
| <b>Percentage Variation</b>                 |                        |                    |                   |             |                   |                     |               |                              | <b>-78%</b>                 |                        | <b>375%</b>           |

**Estimated Groundwater Inflow**

**Tiffany Rox North Hill Ltd. - 14337 Highway 50, Caledon - Building Excavation**

**Dupuit-Forchheimer Equation**

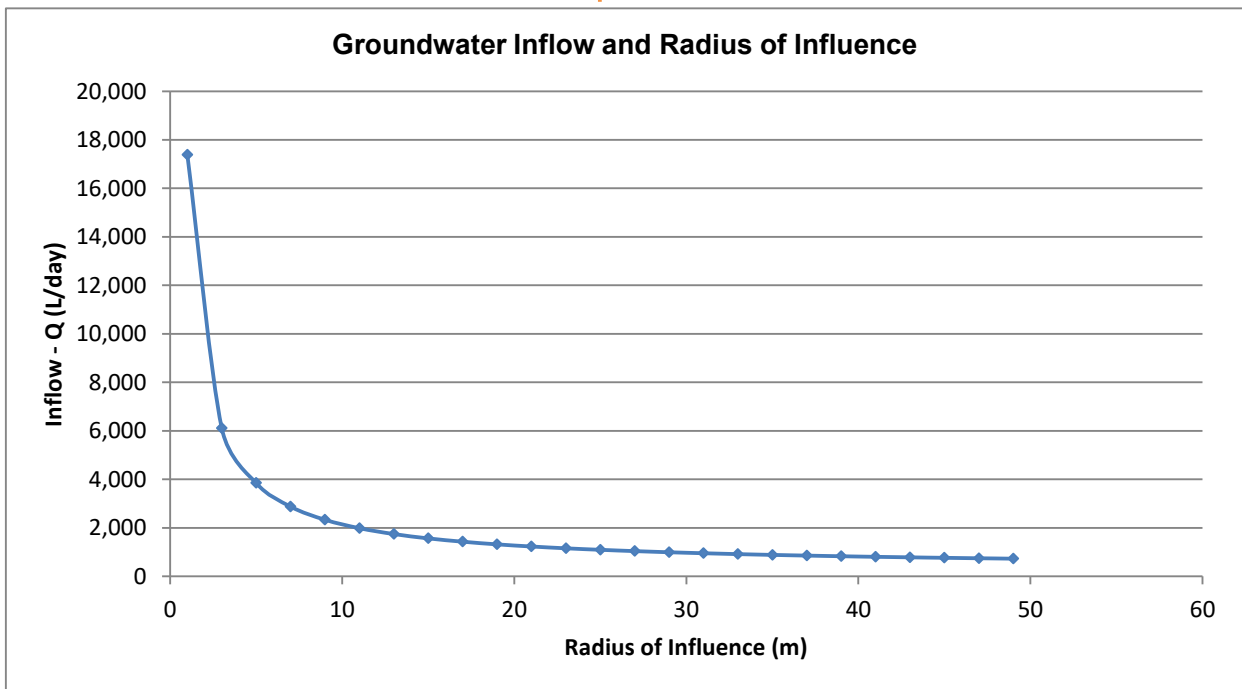
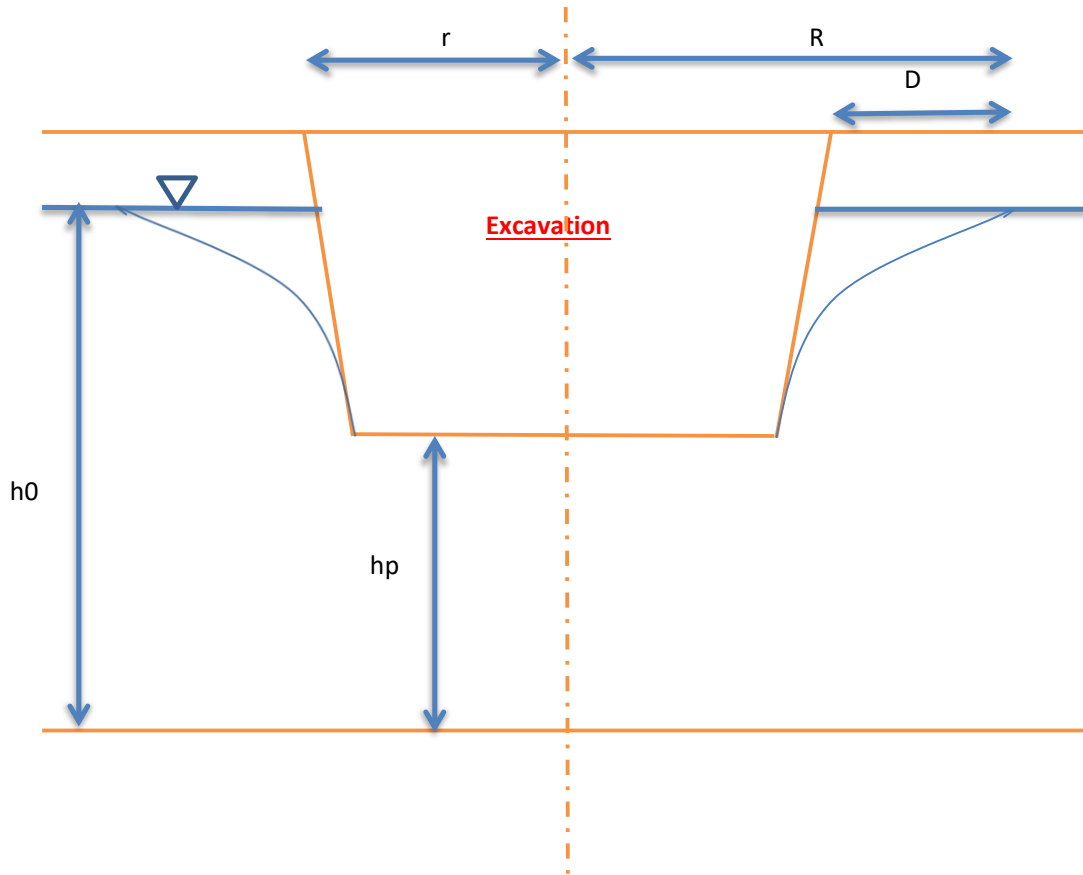
$$Q = \pi K ((h_0^2 - h_p^2) / \ln(R/r))$$

K (m/sec) = 1.45E-07  
 h0 (m) = 25  
 hp (m) = 24.5  
 r (m) = 17.35

Equivalent Radius of Excavation =  $A+B=Pi*r$   
 Excavation Width (A) = 26.5 m  
 Excavation Length (B) = 28 m  
 Perimeter Length = 109 m  
 Equivalent Radius (r) = 17.35 m

| R     | Distance to edge of excavation (D) |
|-------|------------------------------------|
| 18.35 | 1.00                               |
| 20.35 | 3.00                               |
| 22.35 | 5.00                               |
| 24.35 | 7.00                               |
| 26.35 | 9.00                               |
| 28.35 | 11.00                              |
| 30.35 | 13.00                              |
| 32.35 | 15.00                              |
| 34.35 | 17.00                              |
| 36.35 | 19.00                              |
| 38.35 | 21.00                              |
| 40.35 | 23.00                              |
| 42.35 | 25.00                              |
| 44.35 | 27.00                              |
| 46.35 | 29.00                              |
| 48.35 | 31.00                              |
| 50.35 | 33.00                              |
| 52.35 | 35.00                              |
| 54.35 | 37.00                              |
| 56.35 | 39.00                              |
| 58.35 | 41.00                              |
| 60.35 | 43.00                              |
| 62.35 | 45.00                              |
| 64.35 | 47.00                              |
| 66.35 | 49.00                              |
| 68.35 | 51.00                              |
| 70.35 | 53.00                              |
| 72.35 | 55.00                              |
| 74.35 | 57.00                              |
| 76.35 | 59.00                              |

| Q (m <sup>3</sup> /s) | Q (m <sup>3</sup> /day) | Q (L/day) |
|-----------------------|-------------------------|-----------|
| 0.0002                | 17.4                    | 17,381    |
| 0.0001                | 6.1                     | 6,107     |
| 0.0000                | 3.8                     | 3,846     |
| 0.0000                | 2.9                     | 2,874     |
| 0.0000                | 2.3                     | 2,331     |
| 0.0000                | 2.0                     | 1,984     |
| 0.0000                | 1.7                     | 1,742     |
| 0.0000                | 1.6                     | 1,563     |
| 0.0000                | 1.4                     | 1,426     |
| 0.0000                | 1.3                     | 1,317     |
| 0.0000                | 1.2                     | 1,228     |
| 0.0000                | 1.2                     | 1,154     |
| 0.0000                | 1.1                     | 1,092     |
| 0.0000                | 1.0                     | 1,038     |
| 0.0000                | 1.0                     | 991       |
| 0.0000                | 1.0                     | 950       |
| 0.0000                | 0.9                     | 914       |
| 0.0000                | 0.9                     | 882       |
| 0.0000                | 0.9                     | 853       |
| 0.0000                | 0.8                     | 827       |
| 0.0000                | 0.8                     | 803       |
| 0.0000                | 0.8                     | 781       |
| 0.0000                | 0.8                     | 761       |
| 0.0000                | 0.7                     | 743       |
| 0.0000                | 0.7                     | 726       |
| 0.0000                | 0.7                     | 710       |
| 0.0000                | 0.7                     | 696       |
| 0.0000                | 0.7                     | 682       |
| 0.0000                | 0.7                     | 669       |
| 0.0000                | 0.7                     | 657       |



**Estimated Groundwater Inflow**

**Tiffany Rox North Hill Ltd. - 14337 Highway 50, Caledon - Servicing Excavation**

**Dupuit-Forchheimer Equation**

$$Q = \pi K ((h_0^2 - h_p^2) / \ln(R/r))$$

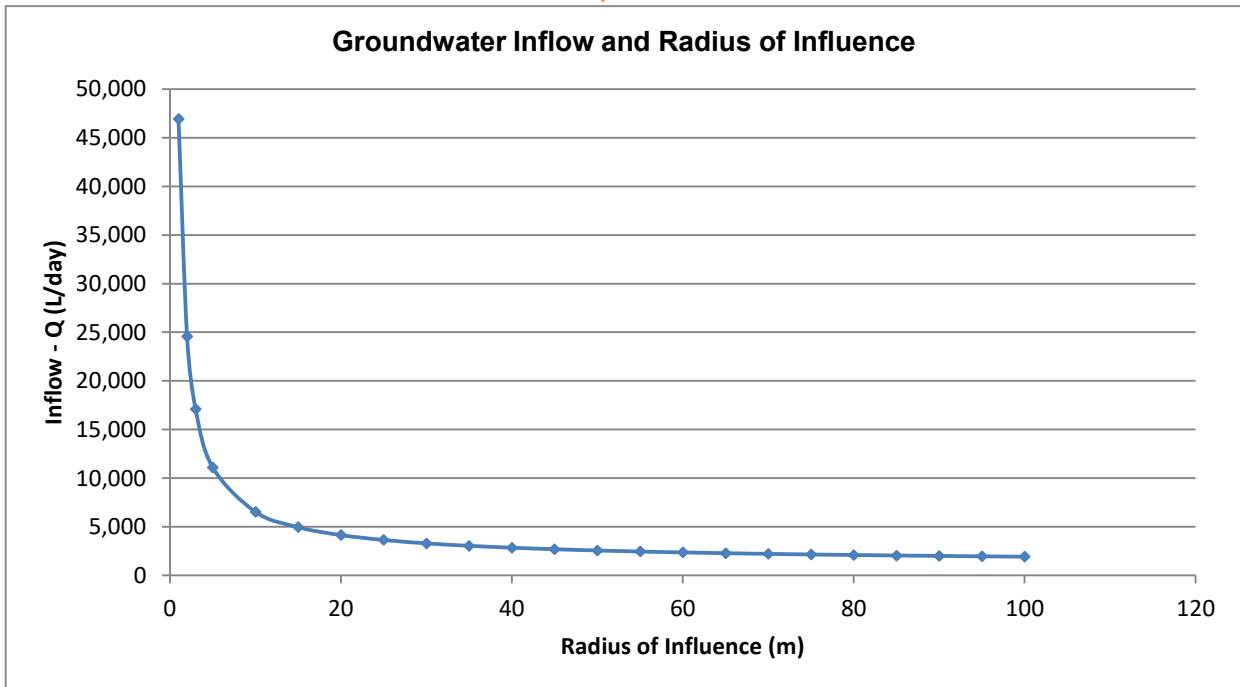
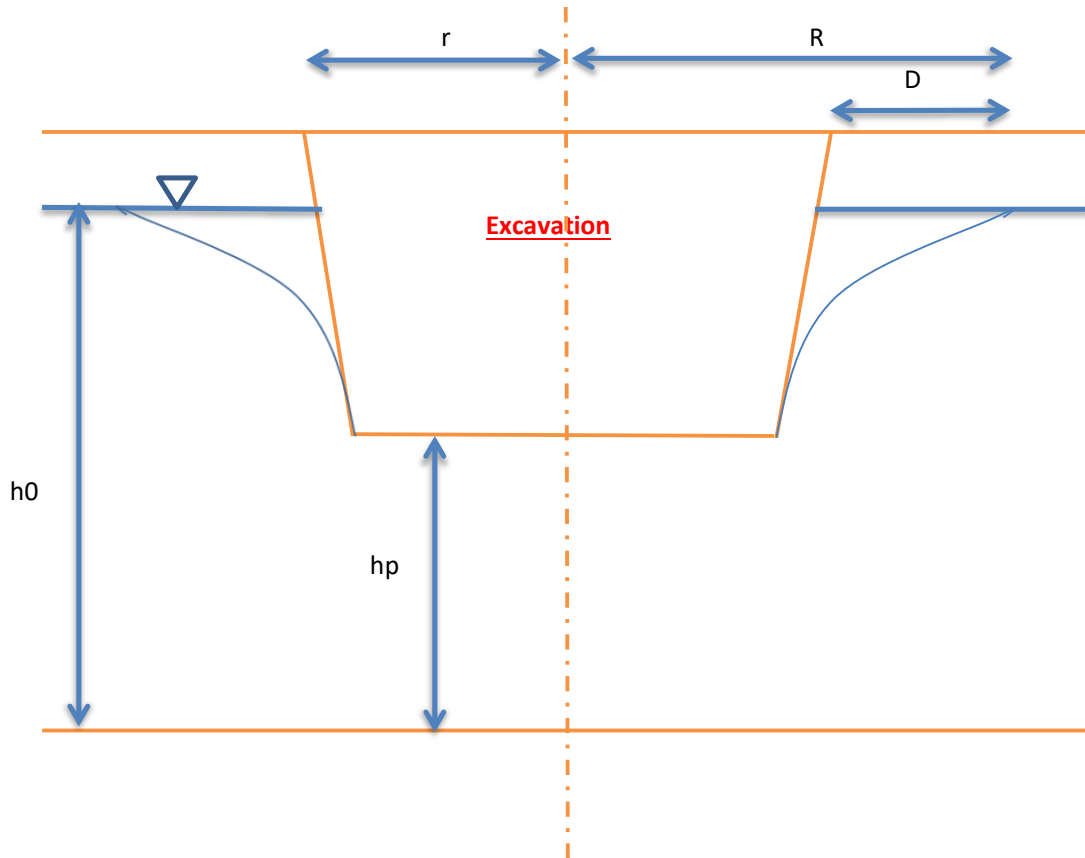
K (m/sec) = 1.45E-07  
 h0 (m) = 25  
 hp (m) = 22.5  
 r (m) = 9.55

Equivalent Radius of Excavation = A+B=Pi\*r  
 Excavation Width (X) = 5 m  
 Excavation Length (Y) = 25 m  
 Perimeter Length = 60 m  
 Equivalent Radius (r) = 9.55 m

| R            | Distance to edge of excavation (D) |
|--------------|------------------------------------|
| 10.55        | 1.00                               |
| 11.55        | 2.00                               |
| <b>12.55</b> | <b>3.00</b>                        |
| 14.55        | 5.00                               |
| 19.55        | 10.00                              |
| 24.55        | 15.00                              |
| 29.55        | 20.00                              |
| 34.55        | 25.00                              |
| 39.55        | 30.00                              |
| 44.55        | 35.00                              |
| 49.55        | 40.00                              |
| 54.55        | 45.00                              |
| 59.55        | 50.00                              |
| 64.55        | 55.00                              |
| 69.55        | 60.00                              |
| 74.55        | 65.00                              |
| 79.55        | 70.00                              |
| 84.55        | 75.00                              |
| 89.55        | 80.00                              |
| 94.55        | 85.00                              |
| 99.55        | 90.00                              |
| 104.55       | 95.00                              |
| 109.55       | 100.00                             |
| 114.55       | 105.00                             |
| 119.55       | 110.00                             |
| 124.55       | 115.00                             |
| 129.55       | 120.00                             |
| 134.55       | 125.00                             |
| 139.55       | 130.00                             |
| 144.55       | 135.00                             |

| Q (m <sup>3</sup> /s) | Q (m <sup>3</sup> /day) | Q (L/day)     |
|-----------------------|-------------------------|---------------|
| 0.0005                | 46.9                    | 46,929        |
| 0.0003                | 24.6                    | 24,578        |
| <b>0.0002</b>         | <b>17.1</b>             | <b>17,108</b> |
| 0.0001                | 11.1                    | 11,100        |
| 0.0001                | 6.5                     | 6,523         |
| 0.0001                | 4.9                     | 4,950         |
| 0.0000                | 4.1                     | 4,138         |
| 0.0000                | 3.6                     | 3,635         |
| 0.0000                | 3.3                     | 3,289         |
| 0.0000                | 3.0                     | 3,035         |
| 0.0000                | 2.8                     | 2,839         |
| 0.0000                | 2.7                     | 2,682         |
| 0.0000                | 2.6                     | 2,553         |
| 0.0000                | 2.4                     | 2,446         |
| 0.0000                | 2.4                     | 2,354         |
| 0.0000                | 2.3                     | 2,274         |
| 0.0000                | 2.2                     | 2,205         |
| 0.0000                | 2.1                     | 2,143         |
| 0.0000                | 2.1                     | 2,088         |
| 0.0000                | 2.0                     | 2,039         |
| 0.0000                | 2.0                     | 1,994         |
| 0.0000                | 2.0                     | 1,953         |
| 0.0000                | 1.9                     | 1,916         |
| 0.0000                | 1.9                     | 1,881         |
| 0.0000                | 1.8                     | 1,849         |
| 0.0000                | 1.8                     | 1,820         |
| 0.0000                | 1.8                     | 1,792         |
| 0.0000                | 1.8                     | 1,767         |
| 0.0000                | 1.7                     | 1,743         |
| 0.0000                | 1.7                     | 1,720         |

265.06



**Estimated Groundwater Inflow**

**Tiffany Rox North Hill Ltd. - 14337 Highway 50, Caledon - SWMP Excavation**

**Dupuit-Forchheimer Equation**

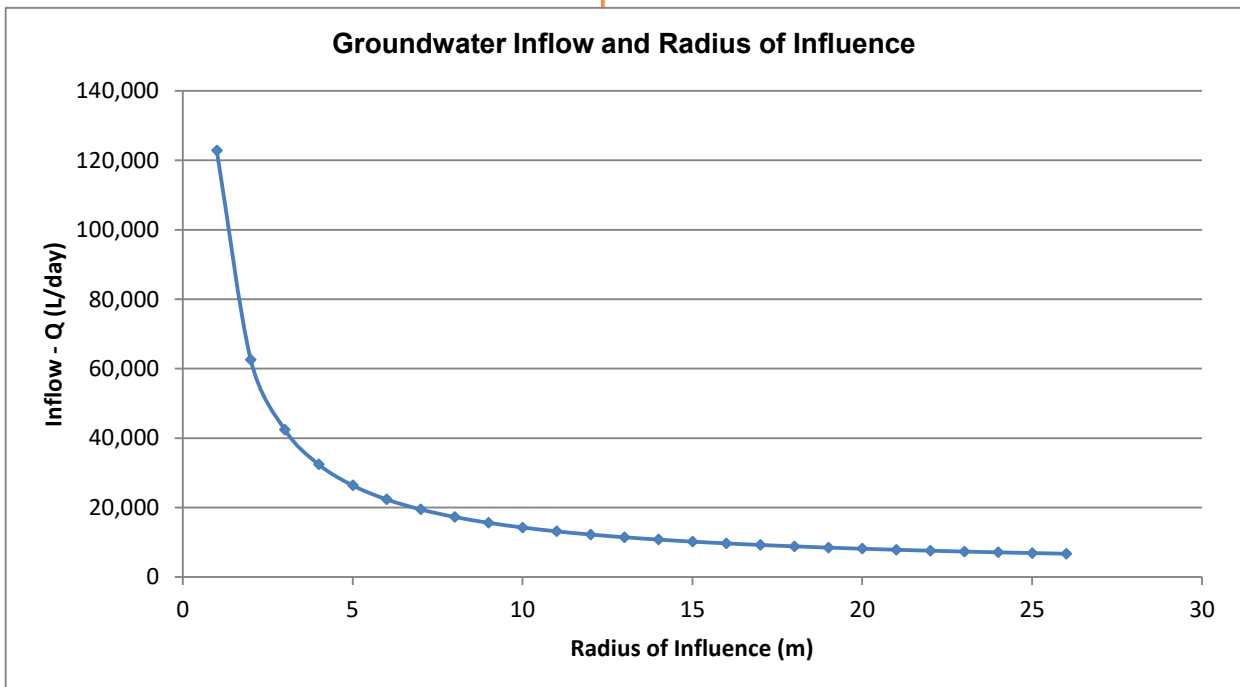
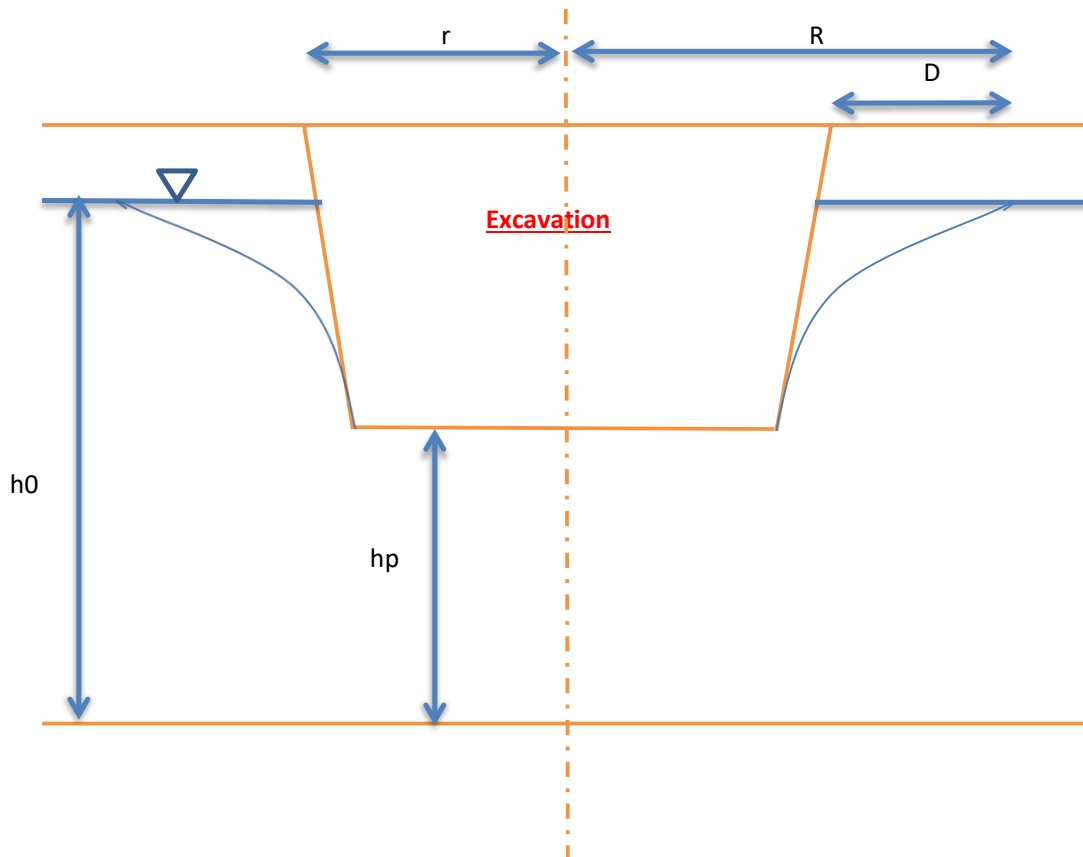
$$Q = \pi K \frac{(h_0^2 - h_p^2)}{\ln(R/r)}$$

K (m/sec) = 1.45E-07  
 h<sub>0</sub> (m) = 25  
 h<sub>p</sub> (m) = 22.5  
 r (m) = 25.78

Equivalent Radius of Excavation = A+B=Pi + r  
 Excavation Width (X) = 40 m  
 Excavation Length (Y) = 41 m  
 Perimeter Length = 241 m  
 Equivalent Radius (r) = 25.78 m

| R            | Distance to edge of excavation (D) |
|--------------|------------------------------------|
| 26.78        | 1.00                               |
| 27.78        | 2.00                               |
| <b>28.78</b> | <b>3.00</b>                        |
| 29.78        | 4.00                               |
| 30.78        | 5.00                               |
| 31.78        | 6.00                               |
| 32.78        | 7.00                               |
| 33.78        | 8.00                               |
| 34.78        | 9.00                               |
| 35.78        | 10.00                              |
| 36.78        | 11.00                              |
| 37.78        | 12.00                              |
| 38.78        | 13.00                              |
| 39.78        | 14.00                              |
| 40.78        | 15.00                              |
| 41.78        | 16.00                              |
| 42.78        | 17.00                              |
| 43.78        | 18.00                              |
| 44.78        | 19.00                              |
| 45.78        | 20.00                              |
| 46.78        | 21.00                              |
| 47.78        | 22.00                              |
| 48.78        | 23.00                              |
| 49.78        | 24.00                              |
| 50.78        | 25.00                              |
| 51.78        | 26.00                              |
| 52.78        | 27.00                              |
| 53.78        | 28.00                              |
| 54.78        | 29.00                              |
| 55.78        | 30.00                              |

| Q (m <sup>3</sup> /s) | Q (m <sup>3</sup> /day) | Q (L/day)     |
|-----------------------|-------------------------|---------------|
| 0.0014                | 122.8                   | 122,826       |
| 0.0007                | 62.6                    | 62,560        |
| <b>0.0005</b>         | <b>42.5</b>             | <b>42,462</b> |
| 0.0004                | 32.4                    | 32,407        |
| 0.0003                | 26.4                    | 26,369        |
| 0.0003                | 22.3                    | 22,339        |
| 0.0002                | 19.5                    | 19,458        |
| 0.0002                | 17.3                    | 17,295        |
| 0.0002                | 15.6                    | 15,610        |
| 0.0002                | 14.3                    | 14,260        |
| 0.0002                | 13.2                    | 13,154        |
| 0.0001                | 12.2                    | 12,230        |
| 0.0001                | 11.4                    | 11,448        |
| 0.0001                | 10.8                    | 10,776        |
| 0.0001                | 10.2                    | 10,192        |
| 0.0001                | 9.7                     | 9,681         |
| 0.0001                | 9.2                     | 9,229         |
| 0.0001                | 8.8                     | 8,826         |
| 0.0001                | 8.5                     | 8,465         |
| 0.0001                | 8.1                     | 8,140         |
| 0.0001                | 7.8                     | 7,844         |
| 0.0001                | 7.6                     | 7,576         |
| 0.0001                | 7.3                     | 7,329         |
| 0.0001                | 7.1                     | 7,103         |
| 0.0001                | 6.9                     | 6,895         |
| 0.0001                | 6.7                     | 6,702         |
| 0.0001                | 6.5                     | 6,523         |
| 0.0001                | 6.4                     | 6,357         |
| 0.0001                | 6.2                     | 6,201         |
| 0.0001                | 6.1                     | 6,056         |



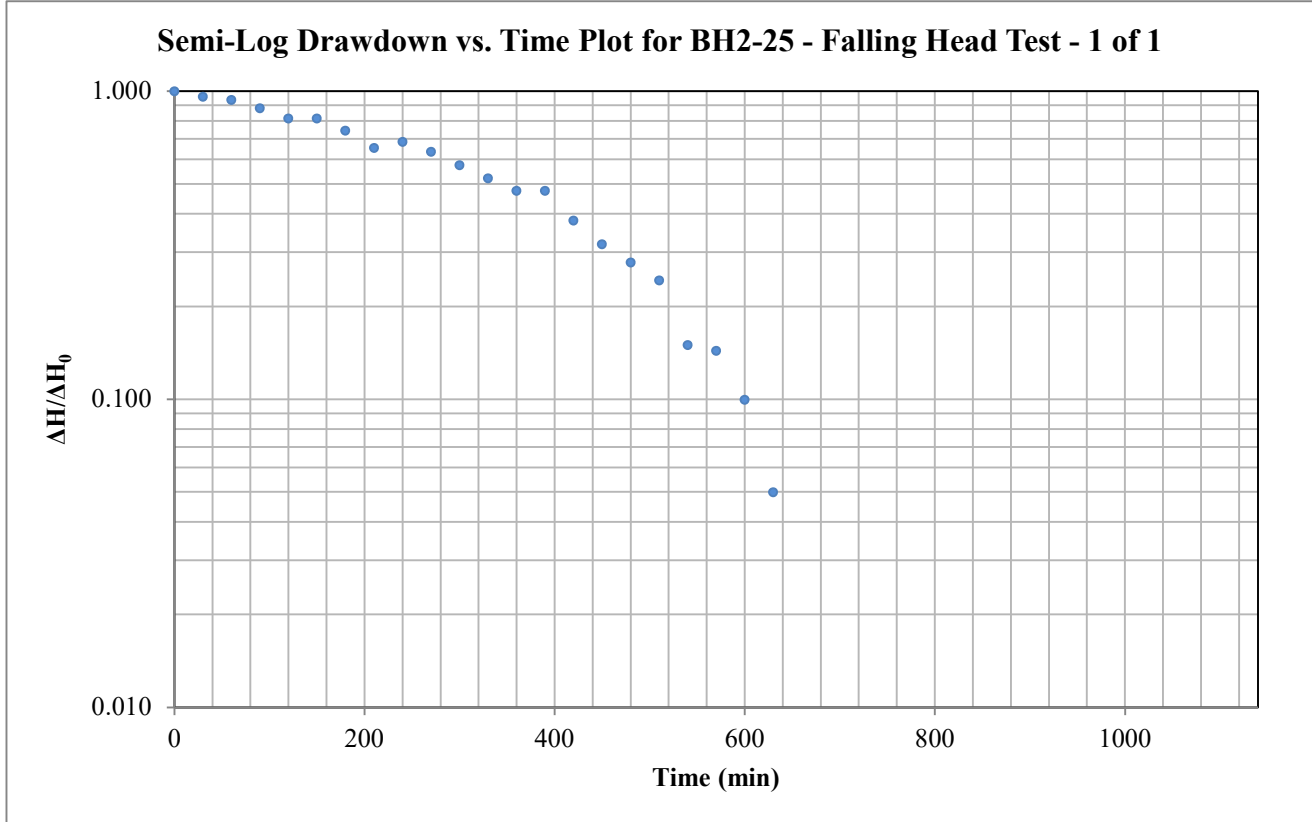
**Hvorslev Hydraulic Conductivity Analysis**

Project: Tiffancy Rox North Hill Ltd/ - Highway 50, Bolton - Parcel 6

Test Location: BH2-25

Test: Falling Head - 1 of 1

Date: January 22, 2026



Hvorslev Horizontal Hydraulic Conductivity

Hvorslev Shape Factor

$$K = \frac{\pi r_c^2}{F t^*} \ln\left(\frac{\Delta H^*}{\Delta H_0}\right)$$

$$F = \frac{2\pi L}{\ln\left(\frac{2L}{D}\right)}$$

Valid for L >> D

Hvorslev Shape Factor F: 2.31086

Well Parameters:

|                |          |   |
|----------------|----------|---|
| L              | 1.5 m    | Saturated length of screen or open hole |
| D              | 0.0508 m | Diameter of well                        |
| r <sub>c</sub> | 0.0254 m | Radius of well                          |

Data Points (from plot):

t\*: 354.789 minutes      ΔH\*/ΔH₀: 0.37

**Horizontal Hydraulic Conductivity**  
**K = 4.10E-08 m/sec**



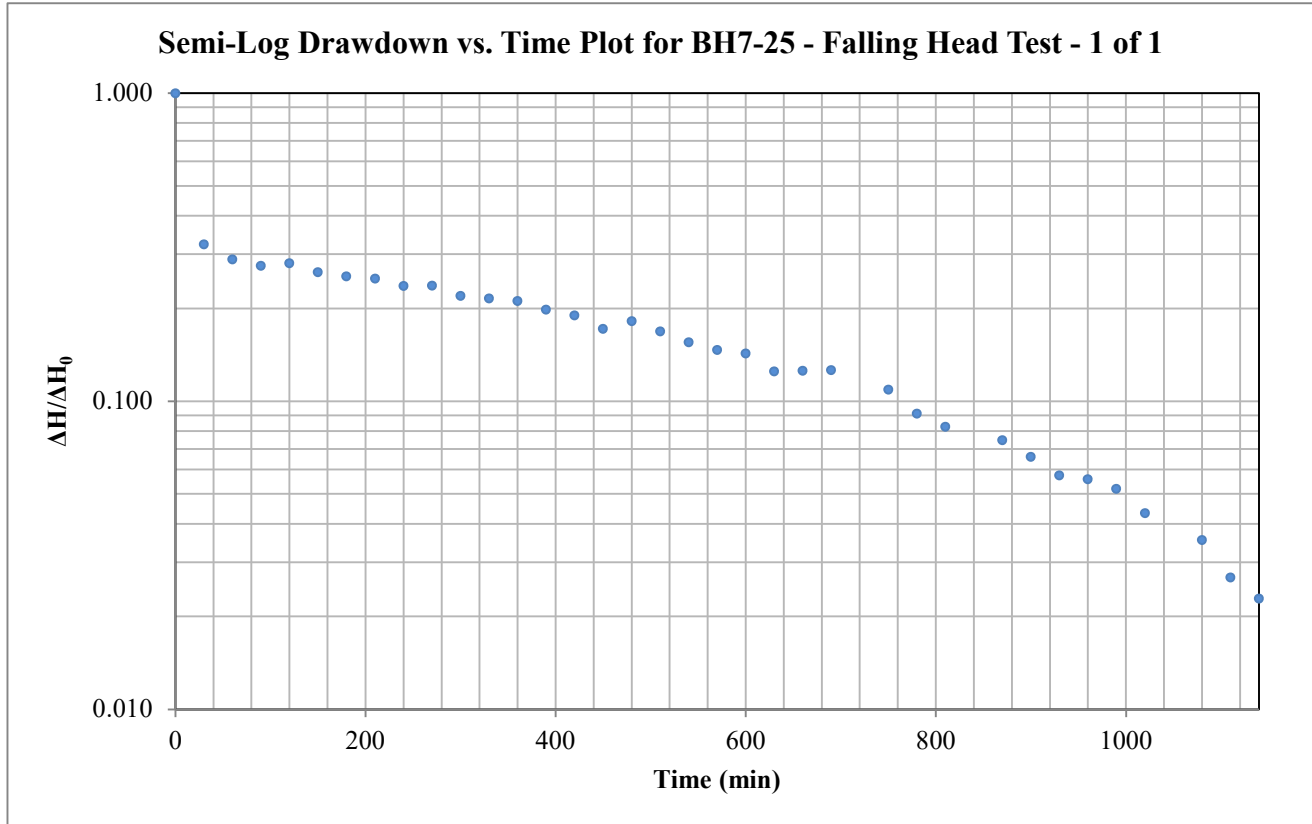
**Hvorslev Hydraulic Conductivity Analysis**

Project: Tiffancy Rox North Hill Ltd/ - Highway 50, Bolton - Parcel 6

Test Location: BH7-25

Test: Falling Head - 1 of 1

Date: January 22, 2026



Hvorslev Horizontal Hydraulic Conductivity

Hvorslev Shape Factor

$$K = \frac{\pi r_c^2}{F t^*} \ln\left(\frac{\Delta H^*}{\Delta H_0}\right)$$

$$F = \frac{2\pi L}{\ln\left(\frac{2L}{D}\right)}$$

Valid for L >> D

Hvorslev Shape Factor F: 3.59613

Well Parameters:

|                |            |   |
|----------------|------------|---|
| L              | 3 m        | Saturated length of screen or open hole |
| D              | 0.03175 m  | Diameter of well                        |
| r <sub>c</sub> | 0.015875 m | Radius of well                          |

Data Points (from plot):

|     |                |          |      |
|-----|----------------|----------|------|
| t*: | 17.684 minutes | ΔH*/ΔH₀: | 0.37 |
|-----|----------------|----------|------|

|  |
|--|
| <b>Horizontal Hydraulic Conductivity</b> |
| <b>K = 2.06E-07 m/sec</b>                |



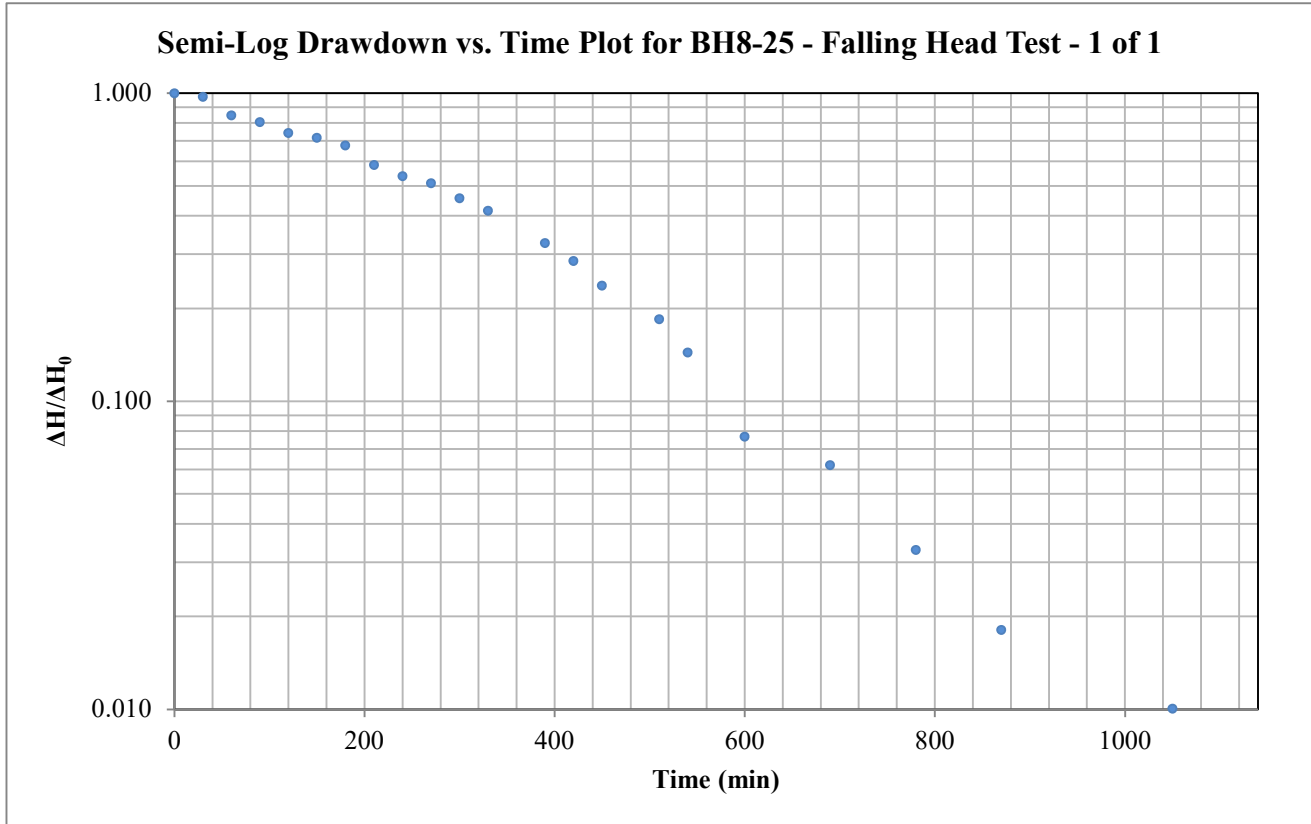
**Hvorslev Hydraulic Conductivity Analysis**

Project: Tiffancy Rox North Hill Ltd. - Highway 50, Bolton - Parcel 6

Test Location: BH8-25

Test: Falling Head - 1 of 1

Date: January 22, 2026



Hvorslev Horizontal Hydraulic Conductivity

Hvorslev Shape Factor

$$K = \frac{\pi r_c^2}{F} \frac{1}{t^*} \ln\left(\frac{\Delta H^*}{\Delta H_0}\right)$$

$$F = \frac{2\pi L}{\ln\left(\frac{2L}{D}\right)}$$

Valid for L >> D

Hvorslev Shape Factor F: 3.59613

Well Parameters:

|                |            |   |
|----------------|------------|---|
| L              | 3 m        | Saturated length of screen or open hole |
| D              | 0.03175 m  | Diameter of well                        |
| r <sub>c</sub> | 0.015875 m | Radius of well                          |

Data Points (from plot):

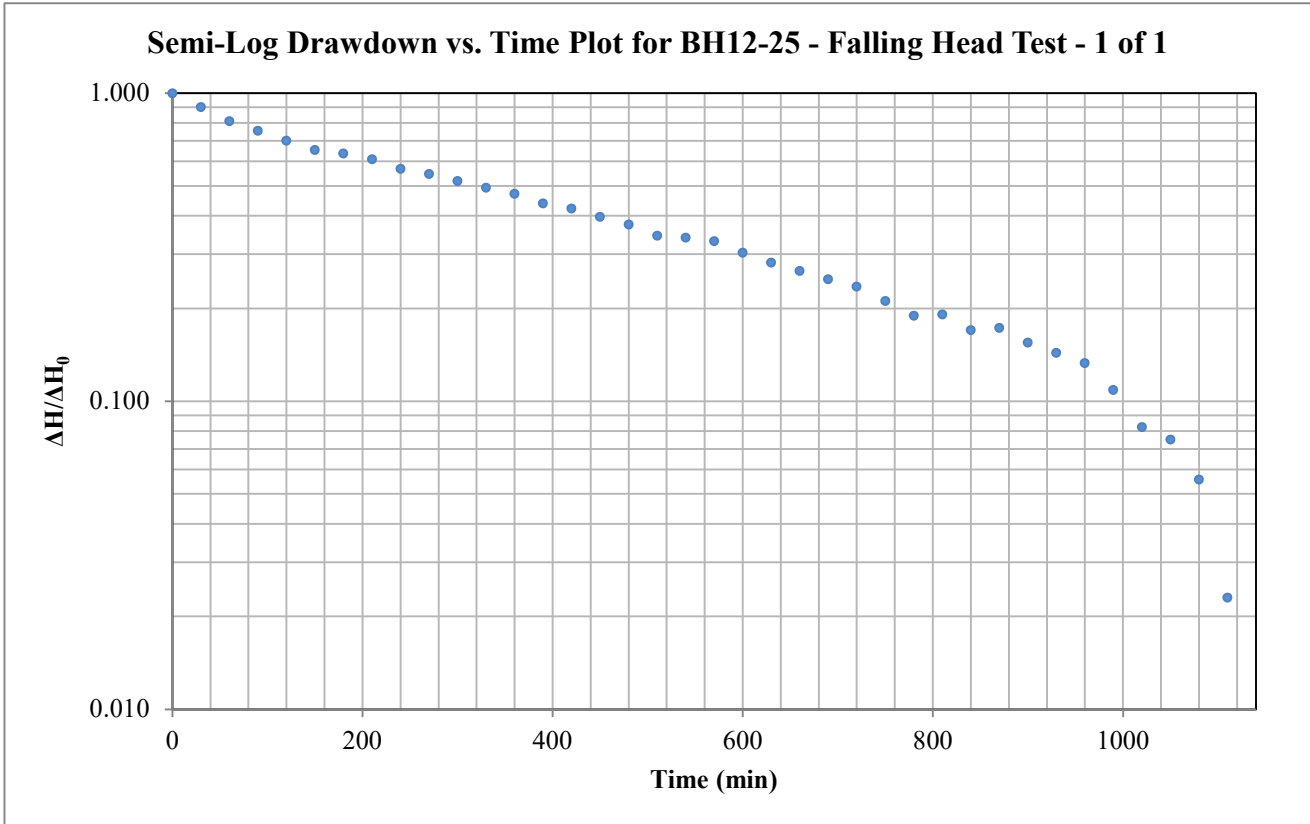
|     |                 |                       |      |
|-----|-----------------|-----------------------|------|
| t*: | 333.868 minutes | ΔH*/ΔH <sub>0</sub> : | 0.37 |
|-----|-----------------|-----------------------|------|

|  |
|--|
| <b>Horizontal Hydraulic Conductivity</b> |
| <b>K = 1.09E-08 m/sec</b>                |



**Hvorslev Hydraulic Conductivity Analysis**

Project: Tiffany Rox North Hill Ltd. - Highway 50, Bolton - Parcel 6  
 Test Location: BH12-25  
 Test: Falling Head - 1 of 1  
 Date: February 5, 2025



Hvorslev Horizontal Hydraulic Conductivity

Hvorslev Shape Factor

$$K = \frac{\pi r_c^2}{F} \frac{1}{t^*} \ln\left(\frac{\Delta H^*}{\Delta H_0}\right)$$

$$F = \frac{2\pi L}{\ln\left(\frac{2L}{D}\right)}$$

Valid for L >> D

Hvorslev Shape Factor F: 2.31086

Well Parameters:

|                |          |   |
|----------------|----------|---|
| L              | 1.5 m    | Saturated length of screen or open hole |
| D              | 0.0508 m | Diameter of well                        |
| r <sub>c</sub> | 0.0254 m | Radius of well                          |

Data Points (from plot):

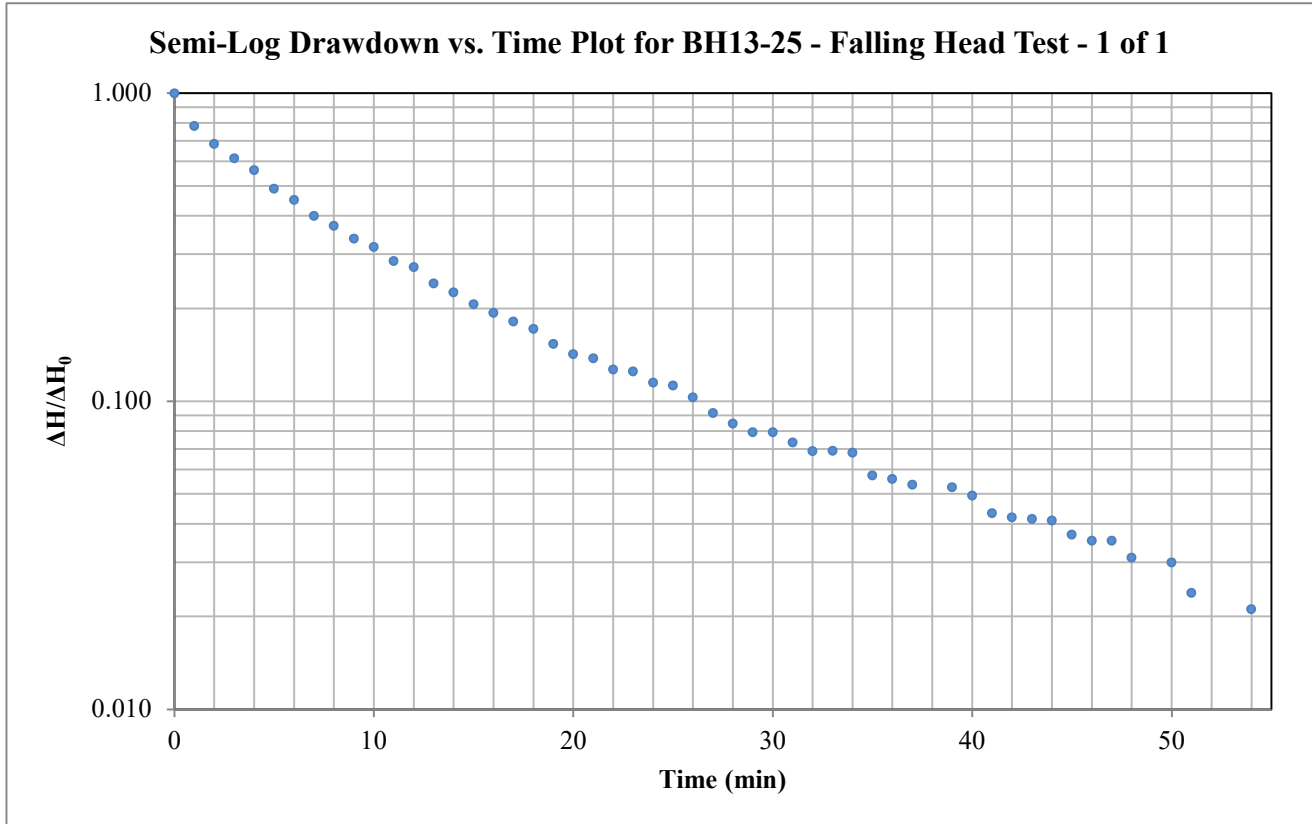
|     |                 |                       |      |
|-----|-----------------|-----------------------|------|
| t*: | 469.332 minutes | ΔH*/ΔH <sub>0</sub> : | 0.37 |
|-----|-----------------|-----------------------|------|

|  |
|--|
| <b>Horizontal Hydraulic Conductivity</b> |
| <b>K = 3.10E-08 m/sec</b>                |



**Hvorslev Hydraulic Conductivity Analysis**

Project: Tiffany Rox North Hill Ltd. - Highway 50, Bolton - Parcel 6  
 Test Location: BH13-25  
 Test: Falling Head - 1 of 1  
 Date: February 4, 2025



Hvorslev Horizontal Hydraulic Conductivity

Hvorslev Shape Factor

$$K = \frac{\pi r_c^2}{F} \frac{1}{t^*} \ln\left(\frac{\Delta H^*}{\Delta H_0}\right)$$

$$F = \frac{2\pi L}{\ln\left(\frac{2L}{D}\right)}$$

Valid for L >> D

Hvorslev Shape Factor F: 2.31086

Well Parameters:

|                |          |   |
|----------------|----------|---|
| L              | 1.5 m    | Saturated length of screen or open hole |
| D              | 0.0508 m | Diameter of well                        |
| r <sub>c</sub> | 0.0254 m | Radius of well                          |

Data Points (from plot):

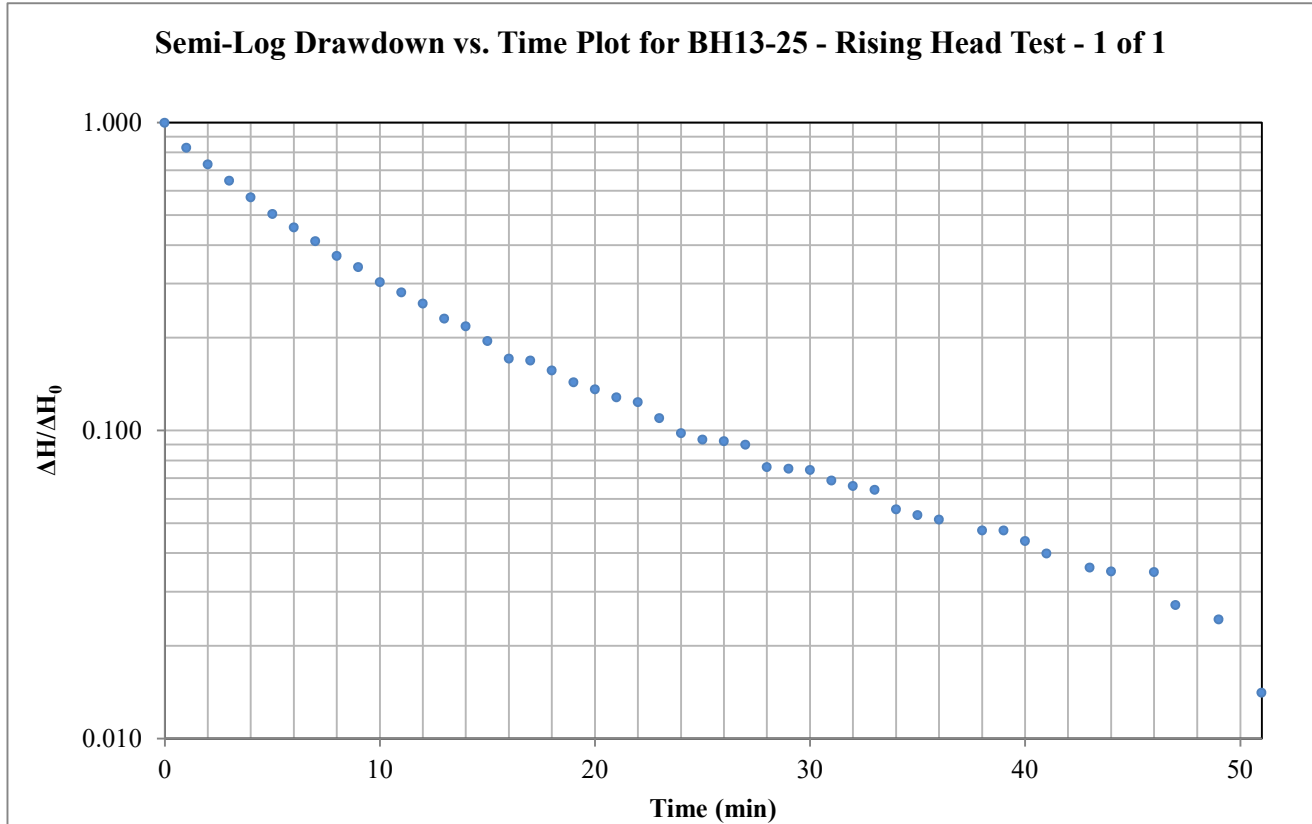
|     |               |                       |      |
|-----|---------------|-----------------------|------|
| t*: | 8.005 minutes | ΔH*/ΔH <sub>0</sub> : | 0.37 |
|-----|---------------|-----------------------|------|

|  |
|--|
| <b>Horizontal Hydraulic Conductivity</b> |
| <b>K = 1.82E-06 m/sec</b>                |



**Hvorslev Hydraulic Conductivity Analysis**

Project: Tiffany Rox North Hill Ltd. - Highway 50, Bolton - Parcel 6  
 Test Location: BH13-25  
 Test: Rising Head - 1 of 1  
 Date: February 4, 2025



Hvorslev Horizontal Hydraulic Conductivity

Hvorslev Shape Factor

$$K = \frac{\pi r_c^2}{F} \frac{1}{t^*} \ln\left(\frac{\Delta H^*}{\Delta H_0}\right)$$

$$F = \frac{2\pi L}{\ln\left(\frac{2L}{D}\right)}$$

Valid for L >> D

Hvorslev Shape Factor F: 2.31086

Well Parameters:

|                |          |   |
|----------------|----------|---|
| L              | 1.5 m    | Saturated length of screen or open hole |
| D              | 0.0508 m | Diameter of well                        |
| r <sub>c</sub> | 0.0254 m | Radius of well                          |

Data Points (from plot):

|     |               |          |      |
|-----|---------------|----------|------|
| t*: | 7.949 minutes | ΔH*/ΔH₀: | 0.37 |
|-----|---------------|----------|------|

|  |
|--|
| <b>Horizontal Hydraulic Conductivity</b> |
| <b>K = 1.83E-06 m/sec</b>                |



## Certificate of Analysis

**Paterson Group Consulting Engineers (Mississauga)**

1535 Meyerside Drive, Unit 7 & 8

Mississauga, ON L5T 1M9

Attn: Balaji Nirmala

Client PO: 64929

Project:

Custody: 149717

Report Date: 28-Jan-2026

Order Date: 20-Jan-2026

**Order #: 2604007**

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

| Parcel ID  | Client ID |
|------------|-----------|
| 2604007-01 | BH7-25    |

Approved By:



Mark Foto, M.Sc.

Laboratory Director

Certificate of Analysis

Report Date: 28-Jan-2026

Client: Paterson Group Consulting Engineers (Mississauga)

Order Date: 20-Jan-2026

Client PO: 64929

Project Description:

**Analysis Summary Table**

| Analysis                                    | Method Reference/Description          | Lab Location | Extraction Date | Analysis Date |
|---|---------------------------------------|--------------|-----------------|---------------|
| Anions                                      | EPA 300.1 - IC                        | Ottawa       | 22-Jan-26       | 22-Jan-26     |
| CBOD  | SM 5210B - DO Probe                   | Ottawa       | 21-Jan-26       | 21-Jan-26     |
| Cyanide, total                              | MOE E3015 - Auto Colour               | Ottawa       | 23-Jan-26       | 23-Jan-26     |
| E. coli                                     | MOE E3407                             | Ottawa       | 21-Jan-26       | 21-Jan-26     |
| Mercury by CVAA                             | EPA 245.2 - Cold Vapour AA            | Ottawa       | 22-Jan-26       | 22-Jan-26     |
| Metals, ICP-MS                              | EPA 200.8 - ICP-MS                    | Ottawa       | 23-Jan-26       | 23-Jan-26     |
| Oil & Grease, mineral/synthetic             | SM5520F - Gravimetric                 | Ottawa       | 22-Jan-26       | 23-Jan-26     |
| Oil & Grease, total                         | SM5520B - Gravimetric, hexane soluble | Ottawa       | 22-Jan-26       | 23-Jan-26     |
| PCBs, total                                 | EPA 608 - GC-ECD                      | Ottawa       | 21-Jan-26       | 22-Jan-26     |
| Peel - Sanitary: Nonylphenols & Ethoxylates | Subcontract - ASTM D7065-06, GC/MS    | Ottawa       | 21-Jan-26       | 21-Jan-26     |
| Oil & Grease, animal/vegetable              | SM5520 - Gravimetric                  | Ottawa       | 22-Jan-26       | 23-Jan-26     |
| Peel - Sanitary: Phthalates                 | EPA 625                               | Ottawa       | 21-Jan-26       | 22-Jan-26     |
| Peel - Sanitary: VOCs                       | EPA 624 - P&T GC-MS                   | Ottawa       | 21-Jan-26       | 21-Jan-26     |
| pH  | SM 4500-H+                            | Ottawa       | 21-Jan-26       | 22-Jan-26     |
| Phenolics                                   | EPA 420.2 - Auto Colour, 4AAP         | Ottawa       | 21-Jan-26       | 21-Jan-26     |
| Phosphorus, total, water                    | EPA 365.4 - Auto Colour, digestion    | Ottawa       | 23-Jan-26       | 23-Jan-26     |
| Total Kjeldahl Nitrogen                     | EPA 351.2 - Auto Colour, digestion    | Ottawa       | 23-Jan-26       | 23-Jan-26     |
| Total Suspended Solids                      | SM 2540D - Gravimetric                | Ottawa       | 23-Jan-26       | 23-Jan-26     |

Certificate of Analysis

Report Date: 28-Jan-2026

Client: Paterson Group Consulting Engineers (Mississauga)

Order Date: 20-Jan-2026

Client PO: 64929

Project Description:

|                     |                 |   |   |   |   |
|---------------------|-----------------|---|---|---|---|
| <b>Client ID:</b>   | BH7-25          | - | - | - | - |
| <b>Sample Date:</b> | 20-Jan-26 09:30 | - | - | - | - |
| <b>Sample ID:</b>   | 2604007-01      | - | - | - | - |
| <b>Matrix:</b>      | Ground Water    | - | - | - | - |
| <b>MDL/Units</b>    |                 |   |   |   |   |

**Microbiological Parameters**

|         |             |             |   |   |   |   |
|---------|-------------|-------------|---|---|---|---|
| E. coli | 1 CFU/100mL | <10 [1] [2] | - | - | - | - |
|---------|-------------|-------------|---|---|---|---|

**General Inorganics**

|                         |              |        |   |   |   |   |
|-------------------------|--------------|--------|---|---|---|---|
| CBOD                    | 2 mg/L       | <2     | - | - | - | - |
| Cyanide, total          | 0.01 mg/L    | <0.01  | - | - | - | - |
| pH                      | 0.1 pH Units | 7.2    | - | - | - | - |
| Phenolics               | 0.001 mg/L   | <0.001 | - | - | - | - |
| Phosphorus, total       | 0.01 mg/L    | 0.27   | - | - | - | - |
| Total Suspended Solids  | 2 mg/L       | 275    | - | - | - | - |
| Total Kjeldahl Nitrogen | 0.1 mg/L     | 0.4    | - | - | - | - |

**Anions**

|          |          |     |   |   |   |   |
|----------|----------|-----|---|---|---|---|
| Fluoride | 0.1 mg/L | 0.2 | - | - | - | - |
| Sulphate | 1 mg/L   | 74  | - | - | - | - |

**Metals - Total**

|            |             |         |   |   |   |   |
|------------|-------------|---------|---|---|---|---|
| Aluminum   | 0.01 mg/L   | 6.09    | - | - | - | - |
| Antimony   | 0.001 mg/L  | <0.001  | - | - | - | - |
| Arsenic    | 0.01 mg/L   | <0.01   | - | - | - | - |
| Cadmium    | 0.001 mg/L  | <0.001  | - | - | - | - |
| Chromium   | 0.05 mg/L   | <0.05   | - | - | - | - |
| Cobalt     | 0.001 mg/L  | 0.006   | - | - | - | - |
| Copper     | 0.005 mg/L  | 0.010   | - | - | - | - |
| Lead       | 0.001 mg/L  | 0.004   | - | - | - | - |
| Mercury    | 0.0001 mg/L | <0.0001 | - | - | - | - |
| Manganese  | 0.05 mg/L   | 0.44    | - | - | - | - |
| Molybdenum | 0.005 mg/L  | <0.005  | - | - | - | - |
| Nickel     | 0.005 mg/L  | 0.012   | - | - | - | - |

Certificate of Analysis

Report Date: 28-Jan-2026

Client: **Paterson Group Consulting Engineers (Mississauga)**

Order Date: 20-Jan-2026

Client PO: 64929

**Project Description:**

|                     |                 |   |   |   |   |
|---------------------|-----------------|---|---|---|---|
| <b>Client ID:</b>   | BH7-25          | - | - | - | - |
| <b>Sample Date:</b> | 20-Jan-26 09:30 | - | - | - | - |
| <b>Sample ID:</b>   | 2604007-01      | - | - | - | - |
| <b>Matrix:</b>      | Ground Water    | - | - | - | - |
| <b>MDL/Units</b>    |                 |   |   |   |   |

**Metals - Total**

|          |            |        |   |   |   |   |
|----------|------------|--------|---|---|---|---|
| Selenium | 0.005 mg/L | <0.005 | - | - | - | - |
| Silver   | 0.001 mg/L | <0.001 | - | - | - | - |
| Tin      | 0.01 mg/L  | <0.01  | - | - | - | - |
| Titanium | 0.01 mg/L  | 0.21   | - | - | - | - |
| Zinc     | 0.02 mg/L  | 0.02   | - | - | - | - |

**Volatiles**

|                                  |             |         |   |   |   |   |
|----------------------------------|-------------|---------|---|---|---|---|
| Benzene                          | 0.0005 mg/L | <0.0005 | - | - | - | - |
| Chloroform                       | 0.0005 mg/L | <0.0005 | - | - | - | - |
| 1,2-Dichlorobenzene              | 0.0005 mg/L | <0.0005 | - | - | - | - |
| 1,4-Dichlorobenzene              | 0.0005 mg/L | <0.0005 | - | - | - | - |
| cis-1,2-Dichloroethylene         | 0.0005 mg/L | <0.0005 | - | - | - | - |
| trans-1,3-Dichloropropylene      | 0.0005 mg/L | <0.0005 | - | - | - | - |
| Ethylbenzene                     | 0.0005 mg/L | <0.0005 | - | - | - | - |
| Methyl Ethyl Ketone (2-Butanone) | 0.0050 mg/L | <0.0050 | - | - | - | - |
| Methylene Chloride               | 0.0050 mg/L | <0.0050 | - | - | - | - |
| Styrene                          | 0.0005 mg/L | <0.0005 | - | - | - | - |
| 1,1,2,2-Tetrachloroethane        | 0.0005 mg/L | <0.0005 | - | - | - | - |
| Tetrachloroethylene              | 0.0005 mg/L | <0.0005 | - | - | - | - |
| Toluene                          | 0.0005 mg/L | <0.0005 | - | - | - | - |
| Trichloroethylene                | 0.0005 mg/L | <0.0005 | - | - | - | - |
| Xylenes, total                   | 0.0005 mg/L | <0.0005 | - | - | - | - |
| Toluene-d8                       | Surrogate   | 92.4%   | - | - | - | - |
| Dibromofluoromethane             | Surrogate   | 113%    | - | - | - | - |
| 4-Bromofluorobenzene             | Surrogate   | 98.6%   | - | - | - | - |

**Hydrocarbons**

Certificate of Analysis

Report Date: 28-Jan-2026

Client: **Paterson Group Consulting Engineers (Mississauga)**

Order Date: 20-Jan-2026

Client PO: 64929

Project Description:

|                     |                 |   |   |   |   |
|---------------------|-----------------|---|---|---|---|
| <b>Client ID:</b>   | BH7-25          | - | - | - | - |
| <b>Sample Date:</b> | 20-Jan-26 09:30 | - | - | - | - |
| <b>Sample ID:</b>   | 2604007-01      | - | - | - | - |
| <b>Matrix:</b>      | Ground Water    | - | - | - | - |
| <b>MDL/Units</b>    |                 |   |   |   |   |

**Hydrocarbons**

|                                 |          |      |   |   |   |   |
|---------------------------------|----------|------|---|---|---|---|
| Oil & Grease, animal/vegetable  | 0.5 mg/L | <0.5 | - | - | - | - |
| Oil & Grease, mineral/synthetic | 0.5 mg/L | <0.5 | - | - | - | - |
| Oil & Grease, total             | 0.5 mg/L | <0.5 | - | - | - | - |

**Semi-Volatiles**

|                            |            |           |   |   |   |   |
|----------------------------|------------|-----------|---|---|---|---|
| Bis(2-ethylhexyl)phthalate | 0.001 mg/L | <0.001    | - | - | - | - |
| Di-n-butylphthalate        | 0.001 mg/L | 0.007     | - | - | - | - |
| Terphenyl-d14              | Surrogate  | 65.8% [6] | - | - | - | - |

**PCBs**

|                    |           |       |   |   |   |   |
|--------------------|-----------|-------|---|---|---|---|
| PCBs, total        | 0.05 ug/L | <0.05 | - | - | - | - |
| Decachlorobiphenyl | Surrogate | 80.0% | - | - | - | - |

**Subcontract**

|                               |              |              |   |   |   |   |
|-------------------------------|--------------|--------------|---|---|---|---|
| Nonylphenol                   | 0.00100 mg/L | <0.00100 [7] | - | - | - | - |
| Total Nonylphenol Ethoxylates | 0.0100 mg/L  | <0.0100 [7]  | - | - | - | - |
| Nonylphenol Monoethoxylates   | 0.0100 mg/L  | <0.0100 [7]  | - | - | - | - |
| Nonylphenol Diethoxylates     | 0.0100 mg/L  | <0.0100 [7]  | - | - | - | - |

Certificate of Analysis

Report Date: 28-Jan-2026

Client: Paterson Group Consulting Engineers (Mississauga)

Order Date: 20-Jan-2026

Client PO: 64929

Project Description:

**Method Quality Control: Blank**

| Analyte                           | Result | Reporting Limit | Units     | %REC | %REC Limit | RPD | RPD Limit | Notes |
|-----------------------------------|--------|-----------------|-----------|------|------------|-----|-----------|-------|
| <b>Anions</b>                     |        |                 |           |      |            |     |           |       |
| Fluoride                          | ND     | 0.1             | mg/L      |      |            |     |           |       |
| Sulphate                          | ND     | 1               | mg/L      |      |            |     |           |       |
| <b>General Inorganics</b>         |        |                 |           |      |            |     |           |       |
| CBOD                              | ND     | 2               | mg/L      |      |            |     |           |       |
| Cyanide, total                    | ND     | 0.01            | mg/L      |      |            |     |           |       |
| Phenolics                         | ND     | 0.001           | mg/L      |      |            |     |           |       |
| Phosphorus, total                 | ND     | 0.01            | mg/L      |      |            |     |           |       |
| Total Suspended Solids            | ND     | 2               | mg/L      |      |            |     |           |       |
| Total Kjeldahl Nitrogen           | ND     | 0.1             | mg/L      |      |            |     |           |       |
| <b>Hydrocarbons</b>               |        |                 |           |      |            |     |           |       |
| Oil & Grease, mineral/synthetic   | ND     | 0.5             | mg/L      |      |            |     |           |       |
| Oil & Grease, total               | ND     | 0.5             | mg/L      |      |            |     |           |       |
| <b>Metals - Total</b>             |        |                 |           |      |            |     |           |       |
| Aluminum                          | ND     | 0.01            | mg/L      |      |            |     |           |       |
| Antimony                          | ND     | 0.001           | mg/L      |      |            |     |           |       |
| Arsenic                           | ND     | 0.01            | mg/L      |      |            |     |           |       |
| Cadmium                           | ND     | 0.001           | mg/L      |      |            |     |           |       |
| Chromium                          | ND     | 0.05            | mg/L      |      |            |     |           |       |
| Cobalt                            | ND     | 0.001           | mg/L      |      |            |     |           |       |
| Copper                            | ND     | 0.005           | mg/L      |      |            |     |           |       |
| Lead                              | ND     | 0.001           | mg/L      |      |            |     |           |       |
| Manganese                         | ND     | 0.05            | mg/L      |      |            |     |           |       |
| Mercury                           | ND     | 0.0001          | mg/L      |      |            |     |           |       |
| Molybdenum                        | ND     | 0.005           | mg/L      |      |            |     |           |       |
| Nickel                            | ND     | 0.005           | mg/L      |      |            |     |           |       |
| Selenium                          | ND     | 0.005           | mg/L      |      |            |     |           |       |
| Silver                            | ND     | 0.001           | mg/L      |      |            |     |           |       |
| Tin                               | ND     | 0.01            | mg/L      |      |            |     |           |       |
| Titanium                          | ND     | 0.01            | mg/L      |      |            |     |           |       |
| Zinc                              | ND     | 0.02            | mg/L      |      |            |     |           |       |
| <b>Microbiological Parameters</b> |        |                 |           |      |            |     |           |       |
| E. coli                           | ND     | 1               | CFU/100mL |      |            |     |           |       |

Certificate of Analysis

Report Date: 28-Jan-2026

Client: Paterson Group Consulting Engineers (Mississauga)

Order Date: 20-Jan-2026

Client PO: 64929

Project Description:

**Method Quality Control: Blank**

| Analyte                          | Result | Reporting Limit | Units | %REC | %REC Limit | RPD | RPD Limit | Notes |
|----------------------------------|--------|-----------------|-------|------|------------|-----|-----------|-------|
| <b>PCBs</b>                      |        |                 |       |      |            |     |           |       |
| PCBs, total                      | ND     | 0.05            | ug/L  |      |            |     |           |       |
| Surrogate: Decachlorobiphenyl    | 0.221  |                 | %     | 88.5 | 60-140     |     |           |       |
| <b>Semi-Volatiles</b>            |        |                 |       |      |            |     |           |       |
| Bis(2-ethylhexyl)phthalate       | ND     | 0.001           | mg/L  |      |            |     |           |       |
| Di-n-butylphthalate              | ND     | 0.001           | mg/L  |      |            |     |           |       |
| Surrogate: 2-Fluorobiphenyl      | 0.0207 |                 | %     | 104  | 76-125     |     |           |       |
| Surrogate: Nitrobenzene-d5       | 0.0209 |                 | %     | 105  | 68-125     |     |           |       |
| Surrogate: Terphenyl-d14         | 0.0181 |                 | %     | 90.3 | 70-125     |     |           |       |
| <b>Volatiles</b>                 |        |                 |       |      |            |     |           |       |
| Benzene                          | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| Chloroform                       | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| 1,2-Dichlorobenzene              | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| 1,4-Dichlorobenzene              | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| cis-1,2-Dichloroethylene         | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| trans-1,3-Dichloropropylene      | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| Ethylbenzene                     | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| Methyl Ethyl Ketone (2-Butanone) | ND     | 0.0050          | mg/L  |      |            |     |           |       |
| Methylene Chloride               | ND     | 0.0050          | mg/L  |      |            |     |           |       |
| Styrene                          | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| 1,1,2,2-Tetrachloroethane        | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| Tetrachloroethylene              | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| Toluene                          | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| Trichloroethylene                | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| Xylenes, total                   | ND     | 0.0005          | mg/L  |      |            |     |           |       |
| Surrogate: 4-Bromofluorobenzene  | 0.0728 |                 | %     | 91.1 | 50-140     |     |           |       |
| Surrogate: Dibromofluoromethane  | 0.0846 |                 | %     | 106  | 50-140     |     |           |       |
| Surrogate: Toluene-d8            | 0.0801 |                 | %     | 100  | 50-140     |     |           |       |

Certificate of Analysis

Report Date: 28-Jan-2026

Client: Paterson Group Consulting Engineers (Mississauga)

Order Date: 20-Jan-2026

Client PO: 64929

Project Description:

**Method Quality Control: Duplicate**

| Analyte                           | Result | Reporting Limit | Units     | Source Result | %REC | %REC Limit | RPD  | RPD Limit | Notes        |
|-----------------------------------|--------|-----------------|-----------|---------------|------|------------|------|-----------|--------------|
| <b>Anions</b>                     |        |                 |           |               |      |            |      |           |              |
| Fluoride                          | 0.47   | 0.1             | mg/L      | 0.47          |      |            | 0.1  | 20        |              |
| Sulphate                          | 75.9   | 1               | mg/L      | 74.8          |      |            | 1.5  | 10        |              |
| <b>General Inorganics</b>         |        |                 |           |               |      |            |      |           |              |
| Cyanide, total                    | ND     | 0.01            | mg/L      | ND            |      |            | NC   | 20        |              |
| pH                                | 7.7    | 0.1             | pH Units  | 7.7           |      |            | 0.3  | 3.3       |              |
| Phenolics                         | ND     | 0.001           | mg/L      | ND            |      |            | NC   | 10        |              |
| Phosphorus, total                 | ND     | 0.01            | mg/L      | ND            |      |            | NC   | 15        |              |
| Total Suspended Solids            | ND     | 2               | mg/L      | ND            |      |            | NC   | 10        |              |
| Total Kjeldahl Nitrogen           | 0.22   | 0.1             | mg/L      | 0.23          |      |            | 4.9  | 20        |              |
| <b>Metals - Total</b>             |        |                 |           |               |      |            |      |           |              |
| Aluminum                          | 0.01   | 0.01            | mg/L      | 0.02          |      |            | 48.4 | 20        | QR-05        |
| Antimony                          | 0.007  | 0.001           | mg/L      | ND            |      |            | NC   | 20        |              |
| Arsenic                           | ND     | 0.01            | mg/L      | ND            |      |            | NC   | 20        |              |
| Cadmium                           | ND     | 0.001           | mg/L      | ND            |      |            | NC   | 20        |              |
| Chromium                          | ND     | 0.05            | mg/L      | ND            |      |            | NC   | 20        |              |
| Cobalt                            | ND     | 0.001           | mg/L      | ND            |      |            | NC   | 20        |              |
| Copper                            | 0.018  | 0.005           | mg/L      | 0.033         |      |            | NC   | 20        |              |
| Lead                              | ND     | 0.001           | mg/L      | ND            |      |            | NC   | 20        |              |
| Mercury                           | ND     | 0.0001          | mg/L      | ND            |      |            | NC   | 20        |              |
| Manganese                         | ND     | 0.05            | mg/L      | ND            |      |            | NC   | 20        |              |
| Molybdenum                        | ND     | 0.005           | mg/L      | ND            |      |            | NC   | 20        |              |
| Nickel                            | ND     | 0.005           | mg/L      | ND            |      |            | NC   | 20        |              |
| Selenium                          | ND     | 0.005           | mg/L      | ND            |      |            | NC   | 20        |              |
| Silver                            | ND     | 0.001           | mg/L      | ND            |      |            | NC   | 20        |              |
| Tin                               | ND     | 0.01            | mg/L      | ND            |      |            | NC   | 20        |              |
| Titanium                          | ND     | 0.01            | mg/L      | ND            |      |            | NC   | 20        |              |
| Zinc                              | ND     | 0.02            | mg/L      | ND            |      |            | NC   | 20        |              |
| <b>Microbiological Parameters</b> |        |                 |           |               |      |            |      |           |              |
| E. coli                           | ND     | 10              | CFU/100mL | ND            |      |            | NC   | 30        | BAC06, BAC12 |
| <b>Volatiles</b>                  |        |                 |           |               |      |            |      |           |              |

Certificate of Analysis

Report Date: 28-Jan-2026

Client: **Paterson Group Consulting Engineers (Mississauga)**

Order Date: 20-Jan-2026

Client PO: 64929

**Project Description:**

**Method Quality Control: Duplicate**

| Analyte                                | Result        | Reporting Limit | Units    | Source Result | %REC        | %REC Limit    | RPD | RPD Limit | Notes |
|--|---------------|-----------------|----------|---------------|-------------|---------------|-----|-----------|-------|
| Benzene                                | 0.0098        | 0.0005          | mg/L     | 0.0100        |             |               | 2.5 | 30        |       |
| Chloroform                             | ND            | 0.0005          | mg/L     | ND            |             |               | NC  | 30        |       |
| 1,2-Dichlorobenzene                    | ND            | 0.0005          | mg/L     | ND            |             |               | NC  | 30        |       |
| 1,4-Dichlorobenzene                    | ND            | 0.0005          | mg/L     | ND            |             |               | NC  | 30        |       |
| cis-1,2-Dichloroethylene               | 0.0009        | 0.0005          | mg/L     | 0.0010        |             |               | 6.2 | 30        |       |
| trans-1,3-Dichloropropylene            | ND            | 0.0005          | mg/L     | ND            |             |               | NC  | 30        |       |
| Ethylbenzene                           | 0.0175        | 0.0005          | mg/L     | 0.0178        |             |               | 1.8 | 30        |       |
| Methyl Ethyl Ketone (2-Butanone)       | 0.0341        | 0.0050          | mg/L     | 0.0350        |             |               | 2.6 | 30        |       |
| Methylene Chloride                     | ND            | 0.0050          | mg/L     | ND            |             |               | NC  | 30        |       |
| Styrene                                | 0.0010        | 0.0005          | mg/L     | 0.0010        |             |               | 4.1 | 30        |       |
| 1,1,2,2-Tetrachloroethane              | ND            | 0.0005          | mg/L     | ND            |             |               | NC  | 30        |       |
| Tetrachloroethylene                    | ND            | 0.0005          | mg/L     | ND            |             |               | NC  | 30        |       |
| Toluene                                | 0.0773        | 0.0005          | mg/L     | 0.0782        |             |               | 1.2 | 30        |       |
| Trichloroethylene                      | ND            | 0.0005          | mg/L     | ND            |             |               | NC  | 30        |       |
| m,p-Xylenes                            | 0.0662        | 0.0005          | mg/L     | 0.0665        |             |               | 0.4 | 30        |       |
| o-Xylene                               | 0.0261        | 0.0005          | mg/L     | 0.0265        |             |               | 1.3 | 30        |       |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>0.0763</i> |                 | <i>%</i> |               | <i>95.4</i> | <i>50-140</i> |     |           |       |
| <i>Surrogate: Dibromofluoromethane</i> | <i>0.0870</i> |                 | <i>%</i> |               | <i>109</i>  | <i>50-140</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>           | <i>0.0788</i> |                 | <i>%</i> |               | <i>98.4</i> | <i>50-140</i> |     |           |       |

Certificate of Analysis

Report Date: 28-Jan-2026

Client: Paterson Group Consulting Engineers (Mississauga)

Order Date: 20-Jan-2026

Client PO: 64929

Project Description:

**Method Quality Control: Spike**

| Analyte                         | Result | Reporting Limit | Units | Source Result | %REC | %REC Limit | RPD | RPD Limit | Notes |
|---------------------------------|--------|-----------------|-------|---------------|------|------------|-----|-----------|-------|
| <b>Anions</b>                   |        |                 |       |               |      |            |     |           |       |
| Fluoride                        | 1.45   | 0.1             | mg/L  | 0.47          | 97.9 | 70-130     |     |           |       |
| Sulphate                        | 84.7   | 1               | mg/L  | 74.8          | 99.4 | 74-126     |     |           |       |
| <b>General Inorganics</b>       |        |                 |       |               |      |            |     |           |       |
| CBOD                            | 182    | 2               | mg/L  | ND            | 90.8 | 62-129     |     |           |       |
| Cyanide, total                  | 0.048  | 0.01            | mg/L  | ND            | 96.9 | 64-136     |     |           |       |
| Phenolics                       | 0.024  | 0.001           | mg/L  | ND            | 95.3 | 80-120     |     |           |       |
| Phosphorus, total               | 1.06   | 0.01            | mg/L  | ND            | 106  | 80-120     |     |           |       |
| Total Suspended Solids          | 21.0   | 2               | mg/L  | ND            | 94.6 | 84-124     |     |           |       |
| Total Kjeldahl Nitrogen         | 1.21   | 0.1             | mg/L  | 0.23          | 98.2 | 75-125     |     |           |       |
| <b>Hydrocarbons</b>             |        |                 |       |               |      |            |     |           |       |
| Oil & Grease, mineral/synthetic | 7.45   | 0.5             | mg/L  | ND            | 74.5 | 65-110     |     |           |       |
| Oil & Grease, total             | 21.4   | 0.5             | mg/L  | ND            | 107  | 85-110     |     |           |       |
| <b>Metals - Total</b>           |        |                 |       |               |      |            |     |           |       |
| Aluminum                        | 57.0   | 0.01            | mg/L  | 1.90          | 110  | 80-120     |     |           |       |
| Antimony                        | 45.0   | 0.001           | mg/L  | ND            | 90.0 | 80-120     |     |           |       |
| Arsenic                         | 57.5   | 0.01            | mg/L  | 0.092         | 115  | 80-120     |     |           |       |
| Cadmium                         | 53.2   | 0.001           | mg/L  | 0.003         | 106  | 80-120     |     |           |       |
| Chromium                        | 65.7   | 0.05            | mg/L  | 0.053         | 131  | 80-120     |     |           | QM-07 |
| Cobalt                          | 61.2   | 0.001           | mg/L  | 0.004         | 122  | 80-120     |     |           | QM-07 |
| Copper                          | 60.6   | 0.005           | mg/L  | 3.26          | 115  | 80-120     |     |           |       |
| Lead                            | 48.7   | 0.001           | mg/L  | 0.017         | 97.3 | 80-120     |     |           |       |
| Mercury                         | 0.0028 | 0.0001          | mg/L  | ND            | 93.6 | 70-130     |     |           |       |
| Manganese                       | 63.4   | 0.05            | mg/L  | 0.094         | 127  | 80-120     |     |           | QM-07 |
| Molybdenum                      | 61.1   | 0.005           | mg/L  | 0.139         | 122  | 80-120     |     |           | QM-07 |
| Nickel                          | 61.7   | 0.005           | mg/L  | 0.075         | 123  | 80-120     |     |           | QM-07 |
| Selenium                        | 53.7   | 0.005           | mg/L  | 0.038         | 107  | 80-120     |     |           |       |
| Silver                          | 52.5   | 0.001           | mg/L  | 0.002         | 105  | 80-120     |     |           |       |
| Tin                             | 56.1   | 0.01            | mg/L  | 0.036         | 112  | 80-120     |     |           |       |
| Titanium                        | 64.2   | 0.01            | mg/L  | 0.015         | 128  | 80-120     |     |           | QM-07 |
| Zinc                            | 54.7   | 0.02            | mg/L  | 0.436         | 109  | 80-120     |     |           |       |

Certificate of Analysis

Report Date: 28-Jan-2026

Client: Paterson Group Consulting Engineers (Mississauga)

Order Date: 20-Jan-2026

Client PO: 64929

Project Description:

**Method Quality Control: Spike**

| Analyte                                | Result        | Reporting Limit | Units | Source Result | %REC        | %REC Limit    | RPD | RPD Limit | Notes |
|--|---------------|-----------------|-------|---------------|-------------|---------------|-----|-----------|-------|
| <b>PCBs</b>                            |               |                 |       |               |             |               |     |           |       |
| PCBs, total                            | 0.807         | 0.05            | ug/L  | ND            | 80.7        | 65-135        |     |           |       |
| <i>Surrogate: Decachlorobiphenyl</i>   | <i>0.269</i>  |                 | %     |               | <i>108</i>  | <i>60-140</i> |     |           |       |
| <b>Semi-Volatiles</b>                  |               |                 |       |               |             |               |     |           |       |
| Bis(2-ethylhexyl)phthalate             | 0.0109        | 0.001           | mg/L  | ND            | 109         | 50-140        |     |           |       |
| Di-n-butylphthalate                    | 0.0106        | 0.001           | mg/L  | ND            | 106         | 50-140        |     |           |       |
| <i>Surrogate: 2-Fluorobiphenyl</i>     | <i>0.0169</i> |                 | %     |               | <i>84.7</i> | <i>76-125</i> |     |           |       |
| <i>Surrogate: Nitrobenzene-d5</i>      | <i>0.0157</i> |                 | %     |               | <i>78.4</i> | <i>68-125</i> |     |           |       |
| <i>Surrogate: Terphenyl-d14</i>        | <i>0.0145</i> |                 | %     |               | <i>72.3</i> | <i>70-125</i> |     |           |       |
| <b>Volatiles</b>                       |               |                 |       |               |             |               |     |           |       |
| Benzene                                | 0.0420        | 0.0005          | mg/L  | ND            | 105         | 60-130        |     |           |       |
| Chloroform                             | 0.0418        | 0.0005          | mg/L  | ND            | 105         | 60-130        |     |           |       |
| 1,2-Dichlorobenzene                    | 0.0419        | 0.0005          | mg/L  | ND            | 105         | 60-130        |     |           |       |
| 1,4-Dichlorobenzene                    | 0.0414        | 0.0005          | mg/L  | ND            | 103         | 60-130        |     |           |       |
| cis-1,2-Dichloroethylene               | 0.0422        | 0.0005          | mg/L  | ND            | 106         | 60-130        |     |           |       |
| trans-1,3-Dichloropropylene            | 0.0437        | 0.0005          | mg/L  | ND            | 109         | 60-130        |     |           |       |
| Ethylbenzene                           | 0.0407        | 0.0005          | mg/L  | ND            | 102         | 60-130        |     |           |       |
| Methyl Ethyl Ketone (2-Butanone)       | 0.107         | 0.0050          | mg/L  | ND            | 107         | 50-140        |     |           |       |
| Methylene Chloride                     | 0.0443        | 0.0050          | mg/L  | ND            | 111         | 60-130        |     |           |       |
| Styrene                                | 0.0406        | 0.0005          | mg/L  | ND            | 101         | 60-130        |     |           |       |
| 1,1,2,2-Tetrachloroethane              | 0.0446        | 0.0005          | mg/L  | ND            | 112         | 60-130        |     |           |       |
| Tetrachloroethylene                    | 0.0406        | 0.0005          | mg/L  | ND            | 102         | 60-130        |     |           |       |
| Toluene                                | 0.0404        | 0.0005          | mg/L  | ND            | 101         | 60-130        |     |           |       |
| Trichloroethylene                      | 0.0426        | 0.0005          | mg/L  | ND            | 106         | 60-130        |     |           |       |
| m,p-Xylenes                            | 0.0813        | 0.0005          | mg/L  | ND            | 102         | 60-130        |     |           |       |
| o-Xylene                               | 0.0409        | 0.0005          | mg/L  | ND            | 102         | 60-130        |     |           |       |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>0.0876</i> |                 | %     |               | <i>109</i>  | <i>50-140</i> |     |           |       |
| <i>Surrogate: Dibromofluoromethane</i> | <i>0.0851</i> |                 | %     |               | <i>106</i>  | <i>50-140</i> |     |           |       |
| <i>Surrogate: Toluene-d8</i>           | <i>0.0782</i> |                 | %     |               | <i>97.8</i> | <i>50-140</i> |     |           |       |

Certificate of Analysis

Report Date: 28-Jan-2026

Client: **Paterson Group Consulting Engineers (Mississauga)**

Order Date: 20-Jan-2026

Client PO: 64929

**Project Description:**

**Qualifier Notes:**

**Sample Qualifiers :**

- 1: Increased detection limit was a consequence of dilution/reduced analysis volume due to high background bacteria levels / sample matrix limitations.  
Applies to Samples: BH7-25
- 2: Confluent background/interfering flora: May interfere with target colony growth and the analysts' ability to count discrete colonies. The target colonies may be under-represented.  
Applies to Samples: BH7-25
- 6: Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.  
Applies to Samples: BH7-25
- 7: Subcontracted analysis - SGS

**QC Qualifiers:**

- |       |   |
|-------|---|
| BAC06 | Increased detection limit was a consequence of dilution/reduced analysis volume due to high background bacteria levels / sample matrix limitations.                                 |
| BAC12 | Confluent background/interfering flora: May interfere with target colony growth and the analysts' ability to count discrete colonies. The target colonies may be under-represented. |
| QM-07 | The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.  |
| QR-05 | Duplicate RPDs higher than normally accepted. Remaining batch QA\QC was acceptable. May be sample effect.   |

**Sample Data Revisions:**

None

**Work Order Revisions / Comments:**

None

**Other Report Notes:**

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

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

