PATERSON GROUP

Hydrogeological Study

Proposed Residential Development

4795 Bank Street
Ottawa, Ontario

Prepared for Caivan Communities

Report PH5254-REP.01.R1
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1.0 INTRODUCTION

1.1 Background

Paterson Group (Paterson) was retained by Caivan Communities to conduct a hydrogeological study for the proposed residential development located at 4795 Bank Street in the City of Ottawa (hereinafter referred to as the "subject site"). The location of the subject site is shown on Drawing PH5254-1 - Site Plan appended to this report. This report incorporates the findings of Paterson Report PG7301-1 prepared concurrently.

1.2 Scope of Work

Paterson has completed this report in accordance with the scope prepared by Paterson. As per the agreed upon scope, the purpose of this study was to:

- ❒ Complete a groundwater impact assessment to determine potential impacts to adjacent infrastructure, well users and the surrounding environment.

Additionally, the study was to include the standard components of a Water Budget Assessment as per the City of Ottawa's Water Budget Assessment Terms of Reference, which included the following:

- ❒ Review related higher-level studies.
- ❒ Conduct pre- and post-development water budget analyses, including water budget equations, to determine the hydrogeological function of the subject site in order to assess the need for supplemental stormwater management measures.
- ❒ Develop a conceptual model to characterize pre and post-development hydrologic and hydrogeologic site conditions.
- ❒ Identify sensitive hydrologic and hydrogeologic features (if any) within the study area.
- ❒ Identify water budget targets (if applicable) to mitigate post-development hydrologic and hydrogeologic impacts.
- ❒ Identify how climate change projections may impact the water budget.

2.0 RELATED 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/related reports:

- ❒ PG7301 Geotechnical Investigation - Proposed Residential Development - 4795 Bank Street and 3301 Blais Road - prepared by Paterson Group concurrently with this report.
- ❒ PE6876-1 Phase I Environmental Site Assessment - 4795 Bank Street and 3301 Blais Road - prepared by Paterson Group – January 28, 2025.

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.

Geotechnical field investigations were completed by Paterson at the subject site between September 2024 and February 2026. During this time, 26 boreholes and 50 probe holes were advanced to a maximum depth of 10.26 m and 14.9 m below ground surface (bgs), respectively. The location of the test holes are shown on Drawing PG7301-1 - Test Hole Location Plan, included in Appendix 1.

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. In addition to soil sampling, rock core samples were obtained with the use of a standard diamond drill bit. The depth at which split-spoon, auger samples and rock core samples were obtained from the test holes are shown as "**SS**", "**AU**" and "**RC**", respectively, on the Soil Profile and Test Data sheets, included in Appendix 1.

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. Rock core samples were recovered from select boreholes (BH1-22 and BH2-26) drilled during the February 2026 geotechnical investigation using a core barrel and diamond drilling techniques. The bedrock samples were classified on site, placed in hard cardboard core boxes and transported to Paterson's laboratory.

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 recovery value and a Rock Quality Designation (RQD) value were calculated for each drilled section of bedrock and are presented on the borehole logs. The recovery value is the length of the bedrock sample recovered over the length of the drilled section. The RQD value is the total length of intact rock pieces longer than 100 mm over the length of the core run. The values indicate the bedrock quality.

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 (slug testing) was completed at the monitoring wells installed during the geotechnical investigations completed during February 2026. 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 May 26, 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 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 either an acetal slug, 0.9 m in length and 38 mm in diameter, or an acetal slug, 1.0 m in length and 19 mm in diameter, depending on the well diameter. The slug was introduced to raise the groundwater 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 using the AQTESOLV Pro Version 4.5 aquifer analysis software package by HydroSOLVE

Inc. and the results were processed as per the method set out by Hvorslev (1951). Assumptions inherent in the Hvorslev method include a homogeneous aquifer of infinite extent and a screen length significantly greater than the monitoring well diameter. The assumption regarding screen length and well diameter is considered to be met based upon a typical length of 1.52 m and a diameter of 0.03 to 0.05 m.

While the idealized assumptions regarding aquifer extent, homogeneity 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.

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 geotechnical field programs completed between September 2024 and February 2026, monitoring wells were installed in select boreholes to permit the monitoring of groundwater levels and conduct drawdown analyses. The well installations were compliant with ASTM D5092 standards.

3.5 Water Level Measurements

Following the completion of the September 2024, October 2024 and February 2026 drilling programs, groundwater levels were measured at the monitoring well locations. Water levels were measured using an electronic water level meter relative to the ground surface elevation at each location and are noted on the Soil Profile and Test Data sheets, included in Appendix 1.

In addition to the manual groundwater level measurements, select wells were outfitted with dataloggers to record long-term fluctuations in monitoring well water elevations. The monitoring program began in October 2024 and continued until the spring freshet was captured in May 2026. Once the additional monitoring wells

were installed in February 2026, they were outfitted with dataloggers in March 2026. Groundwater monitoring data collected to date is presented in the Monitoring Well Water Elevation Plots in the Figures section of this report.

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 on Drawing PG7301-1 - Test Hole Location Plan, included in Appendix 1.

4.0 REVIEW AND EVALUATION

4.1 Physical Setting

At the time of the field investigations, the majority of the subject site consists of agricultural lands with sparse areas of mature trees which generally follow the property boundary and/or subdivide the fields. Residential and agricultural buildings are located within the central and southeast limits of the property. The western portion of the property is bisected by Findlay Creek.

The property is bordered by an existing residential development to the north and associated stormwater managing system to the east, respectively. The property is bordered by Blais Road to the south, followed by unoccupied lands, a single residential property, and commercial developments, and by Bank Street to the west followed by existing residential developments. The ground surface across the property slopes gently downward from west to east at approximate geodetic elevations of 94 m to 89 m. The location of the subject site is shown on Drawing PH5254-1 - Site Plan, appended to this report.

Based on mapping provided by the Ministry of Conservation and Parks (MECP) Source Protection Information Atlas, the subject site is located within the Castor River subwatershed. 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 and conveyance channels as well as an existing stormwater management pond and Findlay Creek, adjacent to the site. Also, the Findlay Creek Wetlands lies approximately 250 m south of the subject site. The site is generally at grade with adjacent roadways and properties. The site slopes from west to east with an elevation difference of approximately 4-5 m.

According to available mapping from the Ontario Geologic Survey (OGS; MRD 228), the majority of the subject site is located in the sand plans physiographic region. The sand plains region is characterized by silty sand deposits. This is generally consistent with field observations at the subject site.

4.2 Geology

Surficial Geology

Overburden mapping provided by the OGS was reviewed as part of this assessment. Available mapping (MRD 128) indicates that overburden soils throughout the subject site largely consist of till (stone-poor, sandy silt to silty sand-textured till on paleozoic terrain) with isolated areas within the west corner and eastern side consisting of coarse-textured glaciomarine deposits (sand, gravel, minor silt and clay). Overburden soil mapping is shown on Drawing PH5254-3 - Surficial Geology Plan, appended to this report.

Overburden soils identified during the geotechnical investigations by Paterson between September 2024 and February 2026 were generally consistent with the available mapping. Soils generally consisted of topsoil overlying a silty sand layer or glacial till underlain by bedrock. Fill material was encountered at select borehole locations and generally consisted of brown silty sand/silty clay with sand, gravel and cobbles, extending to a maximum depth of 2.6 m bgs. The glacial till deposit generally consisted of a silty sand/silty clay matrix with varying amounts of gravel, cobbles and boulders and trace clay, extending to a maximum observed depth of 6.1 m bgs.

Specific details are provided on the Soil Profile and Test Data Sheets included in Appendix 1 of this report. More details regarding the overburden soils can be found in Paterson Report PG7301-1.R1 prepared concurrently with this report.

Bedrock Geology

Bedrock was encountered between 4.1 to 6.7 m bgs during Paterson's 2026 geotechnical field investigation and cored to a maximum depth of 10.3 m bgs. The bedrock was observed to vary from poor to excellent quality. Based on available mapping, the overburden drift thickness at the subject site ranges between 1 and 10 m. A number of probe holes were completed across the subject site and encountered refusal on inferred bedrock at depths from 3.1 to 10.7 m bgs. Bedrock geology mapping is shown on Drawing PH5254-4 - Bedrock Geology Plan, appended to this report.

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 karstic landforms.

4.3 Hydrogeological Setting (Conceptual Model)

Based on the field investigations at the subject site, Paterson used borehole data, existing water well records, topography, monitoring well water levels, hydraulic conductivity and infiltration rates to develop a conceptual model of the transport fate of surface water and groundwater at the subject site. Information related to the conceptual flow model is described below.

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. Groundwater was observed within the overburden soils at the subject site, and the soils were found to exhibit moderate hydraulic conductivities. Given the limited quantity of groundwater within the overburden aquifer, it is not considered an adequate source for water supply wells. If water supply wells are still in use in the vicinity of the subject site, it is anticipated that they are accessing bedrock aquifers.

Based on a review of the MECP water well record database, available geological mapping and field investigations, Paterson has identified four (4) aquifer systems in the vicinity of the study area which consist of the overburden aquifer and three underlying bedrock aquifers. The bedrock aquifer systems consist of dolostone/dolostone and sandstone, sandstone or shale of the Oxford and March Formations, the Nepean Formation or Queenston Formation, respectively. Surrounding water well records are included in Appendix 4.

Groundwater Levels

Piezometers and monitoring wells were installed across the subject site for the purpose of monitoring groundwater levels within the overburden and bedrock. Groundwater levels were observed to be dry in the piezometers ranged from 1.0 and 5.8 m bgs in the monitoring wells. The initial groundwater level measurements are shown on the Soil Profile and Test Data Sheets appended to this report in Appendix 1. Groundwater elevations that were collected on May 21, 2026 were used to determine hydraulic gradients and the general groundwater flow direction at the subject site which is shown on Drawing PH5254-5 - Groundwater Contour

Plan appended to this report. The manual groundwater level measurements are presented in Table 1 below.

Table 1 – Summary of Manual Groundwater Level Measurements

Borehole ID	Ground Surface Elevation (m asl)	Manual Groundwater Level Measurement		Date Recorded
		Depth (m bgs)	Elevation (m asl)	
BH2-24*	92.85	2.23	90.62	21-May-26
BH4-24*	91.53	Dry	-	21-May-26
BH6-24*	92.00	Destroyed	-	21-May-26
BH9-24*	92.62	2.31	90.31	21-May-26
BH10-24*	91.64	Destroyed	-	21-May-26
BH11-24*	94.43	1.15	93.28	21-May-26
BH12-24*	89.26	1.77	87.49	21-May-26
BH13-24*	89.04	1.42	87.63	21-May-26
BH1-26*	89.47	1.80	87.67	21-May-26
BH2-26*	88.86	1.40	87.46	21-May-26
BH3-26*	89.19	1.39	87.81	21-May-26
BH4-26*	89.18	1.52	87.66	21-May-26
BH5-26*	89.25	1.65	87.61	21-May-26
BH6-26*	89.81	1.99	87.82	21-May-26
BH1-26*	89.47	1.51	87.96	20-Mar-26
BH2-26*	88.86	1.12	87.74	20-Mar-26
BH3-26*	89.19	1.00	88.19	20-Mar-26
BH4-26*	89.18	1.08	88.10	20-Mar-26
BH5-26*	89.25	1.36	87.89	20-Mar-26
BH6-26*	89.81	1.96	87.85	20-Mar-26
BH2-24*	92.85	3.45	89.40	22-Oct-25
BH4-24*	91.53	Dry	-	22-Oct-25
BH6-24*	92.00	Destroyed	-	22-Oct-25
BH9-24*	92.62	3.72	88.90	03-Nov-25
BH10-24*	91.64	Destroyed	-	22-Oct-25
BH11-24*	94.43	3.07	91.36	22-Oct-25
BH12-24*	89.26	2.02	87.24	22-Oct-25
BH13-24*	89.04	1.28	87.76	03-Nov-25
BH2-24*	92.85	2.74	90.11	20-Feb-25
BH4-24*	91.53	Dry	-	20-Feb-25
BH6-24*	92.00	Dry	-	20-Feb-25
BH9-24*	92.62	3.11	89.51	20-Feb-25
BH10-24*	91.64	2.81	88.83	20-Feb-25
BH11-24*	94.03	1.30	92.73	20-Feb-25
BH12-24*	89.26	2.04	87.22	20-Feb-25
BH13-24*	89.04	1.82	87.22	20-Feb-25
BH1-24	93.20	Dry	-	09-Oct-24
BH2-24*	92.85	2.90	89.95	09-Oct-24

BH3-24	91.20	Dry	-	09-Oct-24
BH4-24*	91.53	Dry	-	09-Oct-24
BH5-24	91.28	Dry	-	09-Oct-24
BH6-24*	92.00	Dry	-	09-Oct-24
BH7-24	91.33	Dry	-	09-Oct-24
BH8-24	93.41	Dry	-	09-Oct-24
BH9-24*	92.62	3.20	89.42	09-Oct-24
BH10-24*	91.64	5.76	85.88	09-Oct-24
BH11-24*	94.03	Dry	-	09-Oct-24
BH12-24*	89.26	2.05	87.21	09-Oct-24
BH13-24*	89.04	1.96	87.08	09-Oct-24
BH14-24	89.90	Dry	-	09-Oct-24
Note: The ground surface elevation at each borehole location was surveyed by Paterson using a handheld GPS and was referenced to a geodetic datum. *Borehole instrumented with groundwater monitoring well.				

Van Essen TD-Diver dataloggers were installed at all monitoring well locations to collect water level readings at a minimum of one (1) reading every 24 hours.

The long-term groundwater monitoring program began in October 2024 and lasted until spring high water levels were captured in May 2026. The monitoring data collected to date was compared with Environment and Natural Resources Canada precipitation data from the Ottawa International Airport over the same timeframe as part of the monitoring program. The monitoring data from each monitoring location is presented on the Monitoring Well Water Elevation Plots appended to this report.

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 materials 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 elevation (m asl)
L = horizontal distance between test hole locations

Using the above noted formula, the horizontal hydraulic gradients within the site were observed to be in an approximate easterly orientation with a magnitude of

approximately 0.011 to 0.018 m/m in the glacial till deposit within the study area. The approximate groundwater flow directions are presented on Drawing PH5254-5 – Overburden Groundwater Contour Plan, appended to this report. Regional groundwater flow in the overburden is expected to be in a southeasterly orientation towards Castor River which is consistent with available watershed mapping.

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 testing yielded hydraulic conductivity values of 5.4 x 10^{-6} to 9.0 x 10^{-6} m/sec for glacial till, 6.8 x 10^{-7} m/sec for silty clay to clayey silt, 9.3 x 10^{-6} to 2.6 x 10^{-5} m/sec for silty sand to sandy silt, and 1.2 x 10^{-4} to 5.7 x 10^{-3} m/sec for bedrock. Hydraulic conductivity results are summarized in Table 2 below and have been included in Appendix 3.

Table 2 – Summary of Hydraulic Conductivity (Slug) Testing Results

Test Hole ID	Ground Surface Elevation (m asl)	Testing Elevation (m asl)	Hydraulic Conductivity (m/sec)	Test Type	Soil Type
BH1-26	89.47	80.76-82.28	1.67 x 10^{-4}	Falling Head	Bedrock
			1.22 x 10^{-4}	Rising Head	
BH2-26	88.86	78.75-80.27	1.23 x 10^{-5}	Falling Head	Bedrock
			1.63 x 10^{-5}	Rising Head	
BH3-26	89.19	83.09-84.61	8.97 x 10^{-6}	Falling Head	Glacial Till
			5.35 x 10^{-6}	Rising Head	
BH4-26	89.18	84.23-85.75	6.84 x 10^{-7}	Falling Head	Silty Clay to Clayey Silt
BH5-26	89.25	82.75-84.27	5.69 x 10^{-3}	Falling Head	Bedrock
			2.31 x 10^{-3}	Rising Head	
BH6-26	89.81	84.60-86.12	2.61 x 10^{-5}	Falling Head	Silty Sand to Sandy Silt
			9.26 x 10^{-6}	Rising Head	

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. Upward and downward hydraulic gradients are typically indicative of areas of discharge and recharge, respectively.

It is our interpretation that there is recharge is occurring at the subject site due to the soils identified at the time of the field investigations. Recharge of the shallow overburden aquifer will occur as precipitation infiltrates the subsoils where it will flow vertically downward through the unsaturated surficial soils before intercepting

the overburden aquifer. Furthermore, the eastern portion of the site mapped as a significant groundwater recharge area (SGRA) by the MECP.

With regards to discharge zones, both the topography and the geological conditions would suggest that there is a potential for discharge to be occurring within the confines of the subject site. While the extent of the discharge was not considered as part of the current investigation, given the nature of the nearby watercourse (creek), the extent of discharge occurring is anticipated to be limited.

The subject site intersects one subwatershed as previously mentioned. However, within the confines of the subject site, shallow groundwater was found to have flow generally travelling in an eastward direction.

It should be noted that the subject site is identified by the MECP as an Intake Protection Zone 3.

Catchment Areas

The subject site is located within the Castor River subwatershed. As shown on Drawing PH5254 - 5 - Groundwater Contour Plan, the groundwater flows in an eastward direction within the eastern portion of the subject site towards the stormwater management pond and Findlay Creek. Therefore, it is Paterson's opinion that the subject site is predominantly characterized by one catchment area.

Groundwater Inflow/Dewatering Requirements

Four (4) potential sources of dewatering have been identified at the subject site. The sources consist of the excavation footprints related to the building foundations, condominium foundations, servicing trenches and eastern stormwater management pond (SWMP). Details regarding the excavation footprints and depths for each potential dewatering source were based on the information available at the time of report preparation. Therefore, the building, servicing and SWMP excavations are assumed to encompass areas of approximately 750 m^2, 20,400 m^2, 125 m^2 and 7,040 m^2, respectively, for a preliminary dewatering assessment. It should be noted that, although drift thickness is mapped to be shallow, probe holes across the site showed refusal at depths ranging from 3.05 to 10.67 m, with the overburden being shallowest in the western corner and deepest in the middle and eastern sections.

Based on available conceptual drawings for the site, excavation sizes were estimated based on proposed building footprints, typical servicing excavation sizes 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 assumed the buildings will consist of slab-on-grade construction or one basement level with a maximum excavation depth of 3 m bgs. Calculations are based on an excavation size of approximately 750 m^2 and a saturated depth of 2 m. Using a representative hydraulic conductivity of 6.0 x 10^{-6} m/sec (geometric mean of the calculated hydraulic conductivities from overburden wells), the steady state volume of groundwater inflow is estimated to be between approximately 90,000 to 100,000 L/day, per excavation.

The stratigraphy within the anticipated saturated depth of the condominium 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 buildings will consist of slab-on-grade construction or one basement level with a maximum excavation depth of 3 m bgs. Calculations are based on an excavation size of approximately 20,500 m^2 and a saturated depth of 2 m. Using a representative hydraulic conductivity of 6.0 x 10^{-6} m/sec (geometric mean of the calculated hydraulic conductivities from overburden wells), the steady state volume of groundwater inflow is estimated to be between approximately 210,000 to 230,000 L/day, per excavation.

The servicing trench excavations are anticipated to primarily encounter saturated glacial till material with the potential to intercept shallow saturated bedrock in some locations. 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^2 and either a saturated depth of 4 m within the glacial till and up to 2 m within the bedrock where bedrock is present. Based on probe holes completed on site, it is anticipated that bedrock will only be encountered in the western corner of the site and servicing excavations at other locations will be only in the glacial till. Using a representative hydraulic conductivity of 6.0 x 10^{-6} m/sec and 1.9 x 10^{-4} (geometric mean of the calculated hydraulic conductivities from overburden and bedrock wells, respectively), the steady state volume of groundwater inflow is estimated to be between approximately 70,000 to 75,000 L/day and 1,700,000 to 1,800,000 L/day, per excavation within the glacial till and bedrock, respectively.

The stratigraphy within the anticipated saturated depth of the western SWMP excavation generally consists of a glacial till deposit. Based on available drawings at the time of report preparation, it is anticipated that the SWMP excavation will have a maximum excavation depth of approximately 3 m bgs. Calculations are based on an excavation size of approximately 7,040 m^2 and a saturated depth of 2 m. Using a representative hydraulic conductivity of 6.0 x 10^{-6} m/ sec (geometric mean of the calculated hydraulic conductivities from overburden wells), the steady state groundwater inflow is anticipated is to be between approximately 240,000 to 260,000 L/day.

It should be noted that the above estimated inflow values are unfactored. 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 mature trees, grass and shrubs. The pre and post-development terrain compositions are illustrated on Drawings PH5254-6 - Pre-Development Terrain Composition Plan and PH5254-7 - Post-Development Terrain Composition Plan, appended to this report.

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 topsoil overlying a silty sand- or silty clay- based glacial till deposit, dependent on the location across the site. Additionally, there is carrying amounts of treed areas,

shrubs and farmland across the site. Therefore, the above noted calculations were carried out for the soil moisture holding capacities of each material found on site.

Based on the location of the site within the Ottawa area, climatic data was obtained from the climate station located at the McDonald-Cartier International Airport covering the period of January 1939 to December 2022. The information was provided by Environment Canada's Engineering Climate Services Unit and is presented in Appendix 2 of the report.

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. The monthly/annual water balance data is presented in Tables 5 to 8 in Appendix 2 of this report. For the purpose of this study, 70% of the single and detached homes property footprints and 80% of the condominium footprints are considered to be impervious surfaces (100% of surplus will result in runoff) and 30% of the single and detached homes and 20% of the condominium footprints are considered to be urban lawns with the remainder (70 and 80%, respectively) is considered as impervious surfaces.

Table 3 - Site Specific Water Surplus Information

Land Use Unit	Water Holding Capacity (mm)	Actual Evapotranspiration (mm/year)	Surplus Water (mm/year)
Impervious Surfaces	N/A	145*	759
Urban Lawn/Shallow Rooted Crops (Fine Sandy Loam)	75	525	378
Pasture and Shrubs (Fine Sandy Loam)	150	574	329
Pasture and Shrubs (Clay Loam)	250	600	304
Mature Forests (Fine Sandy Loam)	300	605	298

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.

Table 4 - MOE (2003) Infiltration Factors

Description of Area/Development Site	Value of Infiltration Factor
Topography	
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
Soil	
Tight impervious clay	0.10
Medium combinations of clay and loam	0.20
Open sandy loam	0.40
Cover	
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 hilly land (slope of 28-47 m/km throughout the subject site) Therefore, a pre-development topography infiltration factor of 0.1 was given for the materials analysed on this property. In order for

development to proceed, it is expected that alterations will be made to the topography of the site. In general, it is expected that the overall slope of the site will be reduced to accommodate buildings and parking areas. Therefore, the topography of the subject site under post-development conditions will consist of a mix rolling and hilly land and was therefore assigned a post-development topography infiltration factor of 0.15. An infiltration factor of 0 was assigned to the impervious surfaces due to its negligible infiltration capacity.

As previously discussed, soils within the study area generally consisted of topsoil overlying a glacial till deposit of varying composition. Therefore, a pre-development soil infiltration factor of 0.3 was given for the sand-textured materials analysed on this property and 0.2 was given for the clay-textured materials analysed on this property. Under post-development conditions, the majority of the site will consist of either landscaped areas or impervious surfaces, with soil infiltration factors ranging from 0.3 for fine sandy loam to 0 for impervious surfaces.

At the time of the field investigations, the subject site generally consisted of shallow rooted crops (i.e soybeans) or overgrown with some forested areas. A pre-development vegetation infiltration factor of 0.1 was therefore used for the site. 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, which were given an infiltration factor of 0 due to its negligible potential to benefit from vegetation cover.

The pre and post-development infiltration factors for all materials considered are included in the water budget calculations provided in Table 9 and Table 10 included in Appendix 2 of this report.

5.2 Pre and Post-Development Water Budget

The pre-development water budget analysis conducted for the study area determined that an estimated 25,966,399 L/year of surplus water currently infiltrates the surface soils. The remaining estimated 39,046,230 L/year of surplus leaves the site as runoff.

The post-development water budget analysis determined that an estimated 11,089,802 L/year of surplus water will infiltrate the surface soils and approximately 93,608,617 L/year will leave the site as runoff. These values equate to an approximate decrease in infiltration of 57% and an increase in runoff of 140%.

The main variable that changed from pre-development conditions to post-development conditions was the addition of approximately 9.6 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 (fine sandy loam) material. Also, it should be noted that the SWMP area was excluded from the post-development water budget analysis given that this area is designed to manage stormwater runoff and does not contribute to the infiltration or runoff potential of the site.

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 9 and 10, 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 topsoil, overlying a glacial till deposit. 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)
Δh = 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:

- Δh = 2 to 4 m for the glacial till and 1 to 2 m for the bedrock.
- K = 6.0×10^{-6} m/sec for the glacial till and 1.9×10^{-4} m/sec for the bedrock.

Using the above equation and assumptions, a radius of influence of approximately 15 to 29 m will develop as a steady state condition within the glacial till, extending from the edge of the excavation, depending on the groundwater levels and hydraulic properties of the specific soils encountered. If shallow bedrock removal is required, a radius of influence of approximately 41 to 83 m will develop as a steady state condition based on the geometric mean hydraulic conductivity values measured at the bedrock well location.

The surrounding area consists of mostly low-rise residential homes and commercial properties. The buildings located within the theoretical radius of influence 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. Furthermore, 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 PH5254-2 - MECP Water Well Location Plan, appended to this report. However, it is expected that the majority of these wells are either no longer in use due to their installation dates and developed nature of the region or are monitoring well installations. Additionally, the majority of properties surrounding the site are serviced by municipal water supplies. Any wells that may still be in use are cased well below the anticipated excavation depths associated with the proposed development and are accessing the deeper bedrock aquifer. Therefore, it is anticipated that the existing wells will either no longer be in use or have adequate vertical and horizontal separation from proposed construction activities. Therefore, dewatering activities at the subject site are not expected to cause any interference to the water supply of surrounding properties or other negative impacts.

However, as a precautionary measure, a Baseline Water Sampling Program has been recommended to be completed prior to commencing construction on site. The premise of the program is to obtain groundwater quality information from the water supply wells in the vicinity of the proposed development prior to the project commencing. This ensures that all parties involved (developer, homeowners, and City of Ottawa) are protected should a concern arise during or after construction.

Baseline Water Sampling Program

As mentioned above, the theoretical radius of influence that may develop as a result of dewatering activities associated with the proposed development is expected to be 25 to 97 m, from the edge of the excavations at the time of construction, depending on the hydraulic properties and groundwater levels across the site. The domestic wells in the area were completed at depths well below the anticipated municipal servicing depths with WWRs noting that the majority of water-bearing zones were encountered below the anticipated servicing depths at the subject site.

Based on the water service mapping provided by the City of Ottawa, as well as all the available information, a total of three (3) potential privately serviced lots have been identified to be included in the Baseline Water Sampling Program and are shown on the attached Drawing PH5254-2 MECP Water Well Location Plan. All privately serviced lots on Blais Road were included in the program, which provides

a sampling radius in excess of the potential theoretical radius of influence discussed above. Furthermore, given the size and layout of the proposed development, only servicing installations on the outer perimeter of the subject site will have a radius of influence that may intercept adjacent properties.

The following municipal addresses are proposed to be included in the Baseline Water Sampling Program:

- 3216 Blais Road
- 3238 Blais Road
- 3250 Blais Road

The available water well records that are mapped within the aforementioned properties are included with the historical water well records included in Appendix 4.

The homeowners of the aforementioned properties will be invited to participate in the Baseline Water Sampling Program by providing one registered letter delivered by Canada Post. Upon receipt of the letter, homeowners will have approximately two to four weeks to contact Paterson to participate in the sampling program. To avoid the harassment of homeowners, homeowners that do not contact Paterson within four weeks of receiving the notification letter will be considered to have elected not to participate in the program. Interested homeowners will be interviewed for the purpose of obtaining anecdotal baseline water quality/quantity information about their water supply well followed by the collection of a raw water sample that will be submitted to an accredited laboratory for analysis.

The parameters that are being analyzed as part of the sampling program consist of the "Subdivision Water Quality Package" offered by Eurofins Environmental Testing Canada Inc. This package includes; alkalinity, bacteria, colour, conductivity, pH, hardness, IC anions, NH_3, TKN, DOC, phenols, sulphide, trace metals (as listed in City of Ottawa's Hydrogeological and Terrain Analysis Guidelines), Tannin & Lignin, TDS and turbidity.

A draft copy of the registered letter will be submitted to the City of Ottawa for review prior to commencement of the Baseline Water Sampling Program outlined above.

If wells are found to remain in existence on the subject site, they should be decommissioned in accordance with Ontario Regulation 903 prior to construction.

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 I Environmental Site Assessment (ESA) was completed by Paterson for the subject site. It was determined that there were no areas of potential environmental concern within the assessment area and it was Paterson's opinion that a Phase II ESA was not required for the property.

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, conveyance channels and Findlay Creek. Also, the Findlay Creek Wetlands lies south of the subject site.

Based on the results of the water budget assessment, it is anticipated that there will be an increase in contribution of flow to Findlay Creek as a result of the increase in runoff under post-development conditions. To mitigate this increase, studies are currently being undertaken by both geomorphologists and stormwater engineers (Geomorphix and JSFA, respectively). Specific details were unavailable at the time of report preparation, however it is expected that the recommendations provided as part of their assessments will be incorporated into the overall stormwater management strategy for the subject site to mitigate potential impacts to the water feature.

6.4 Adjacent PTTW/EASRs/ECAs

A search of the MECP Permit to Take Water (PTTW) database provided one (1) PTTW within a 500 m radius of the subject site.

PTTW 7437-D73S6L is registered to Thomas Cavanagh Construction Limited and is located to the west and northwest of the subject site along Bank Street. The above noted permit contains 1 source (Servicing Trenches) with a maximum taking of 45,121,000 L/day.

A search of the MECP Environmental Activity and Sector Registry (EASR) database provided one (1) active EASR within a 500 m radius of the subject site.

EASR R-009-4295072770 is registered to Thomas Cavanagh Construction Limited and is located within the subject site associated with the street widening of Bank Street. The above noted permit contains 1 source (Construction Dewatering) with a maximum taking of 400,000 L/day, per source. It is anticipated that this EASR has been replaced by the aforementioned PTTW.

It is anticipated that the street widening will be completed prior to the commencement of construction and therefore, it is unlikely that dewatering between the two sites would be taking place concurrently. Cumulative impacts related to anticipated dewatering activities for the proposed development from adjacent water taking permits are not anticipated.

With respect to Environmental Compliance Approvals (ECAs), given the nature of the development in the area (residential and commercial), there are several ECAs that exist for various purposes in the areas bordering the site. Three (3) ECAs were found to be in relation to existing stormwater and sanitary management systems in the area, however they were stated to be expired in 2025. Upon review of the aforementioned ECAs, the ECAs generally relate to installations of new sanitary and storm sewers for new residential developments along with stormwater management facilities on the respective sites. As the ECAs relate to municipal stormwater infrastructure, no concerns were found from a hydrogeological perspective in relation to the subject site.

7.0 ASSESSMENT AND RECOMMENDTIONS

7.1 Sources of Contamination

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, conveyance channels and Findlay Creek. As previously noted, various studies were currently underway by others at the time of report preparation to assess the extent of effort required to mitigate potential impacts resulting from increased flows from the proposed development. Dependant on the outcome of these studies, additional measures may need to be incorporated into the overall stormwater management strategy for the site to limit the extent of increase in flows to the creek.

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 Existing Wells

Any wells within the subject site must be decommissioned prior to construction in accordance with Ontario Regulation 903.

If construction activities are shown to cause negative impacts to the water supplies of existing well users, the developer 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. 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 proposed development.

7.4 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.

7.5 Infiltration Potential

At the time of report preparation, site specific infiltration testing had not been completed based on the current stage of development approvals. As previously discussed, surficial soils within the study area generally consisted of topsoil overlying a glacial till deposit. From a theoretical perspective, K_{fs} values within the glacial till are anticipated to range from 1×10^{-8} to 1×10^{-5} m/sec., with the variation in the K_{fs} values dependent on the composition/compaction of the material at a given location. Should infiltration-based Low Impact Development (LID) measures be considered at the subject site, it is recommended that site-specific infiltration testing be completed once additional development details become available.

As noted above, the results of the water budget analyses completed at the subject site indicated that 25,966,399 L/year of infiltration and 39,046,230 L/year of surface runoff are occurring under pre-development conditions. Under post development conditions, it is expected that there will be a 57% infiltration deficit and a 140%

increase in runoff. Therefore, it will likely 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 Ottawa 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, while maintaining consideration of site constraints as defined by the Appendix 10 of the City of Ottawa's Sewer Design Guideline and the MECP's Consolidated Linear Infrastructure Environmental Compliance Approval documentation. Based on the site constraints observed at the subject site (i.e., shallow water table, shallow bedrock), infiltration based Low Impact Development (LID) measures are not recommended at the time of report preparation. Given that infiltration based LID's are not feasible due to site constraints, it is anticipated that the stormwater management strategy for the site will include conventional stormwater management measures (i.e. end of pipe quality and quantity control) and Best Management Practices.

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.

A hydrogeological review of this nature is a limited sampling of a site. The recommendations are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around the test locations. Should any conditions at the site be encountered which differ from those at the test locations, we request notification immediately in order to permit reassessment of our recommendations.

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 Caivan Communities 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.

Oliver Blume, P.Geo.

Michael Laflamme, P.Geo.

9.0 REFERENCES

Government of Ontario. Provincial Policy Statement 2020 Under the Planning Act.

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

FIGURES

DRAWING PH5254-1 - SITE PLAN

DRAWING PH5254-2 - MECP WATER WELL LOCATION PLAN

DRAWING PH5254-3 - SURFICIAL GEOLOGY PLAN

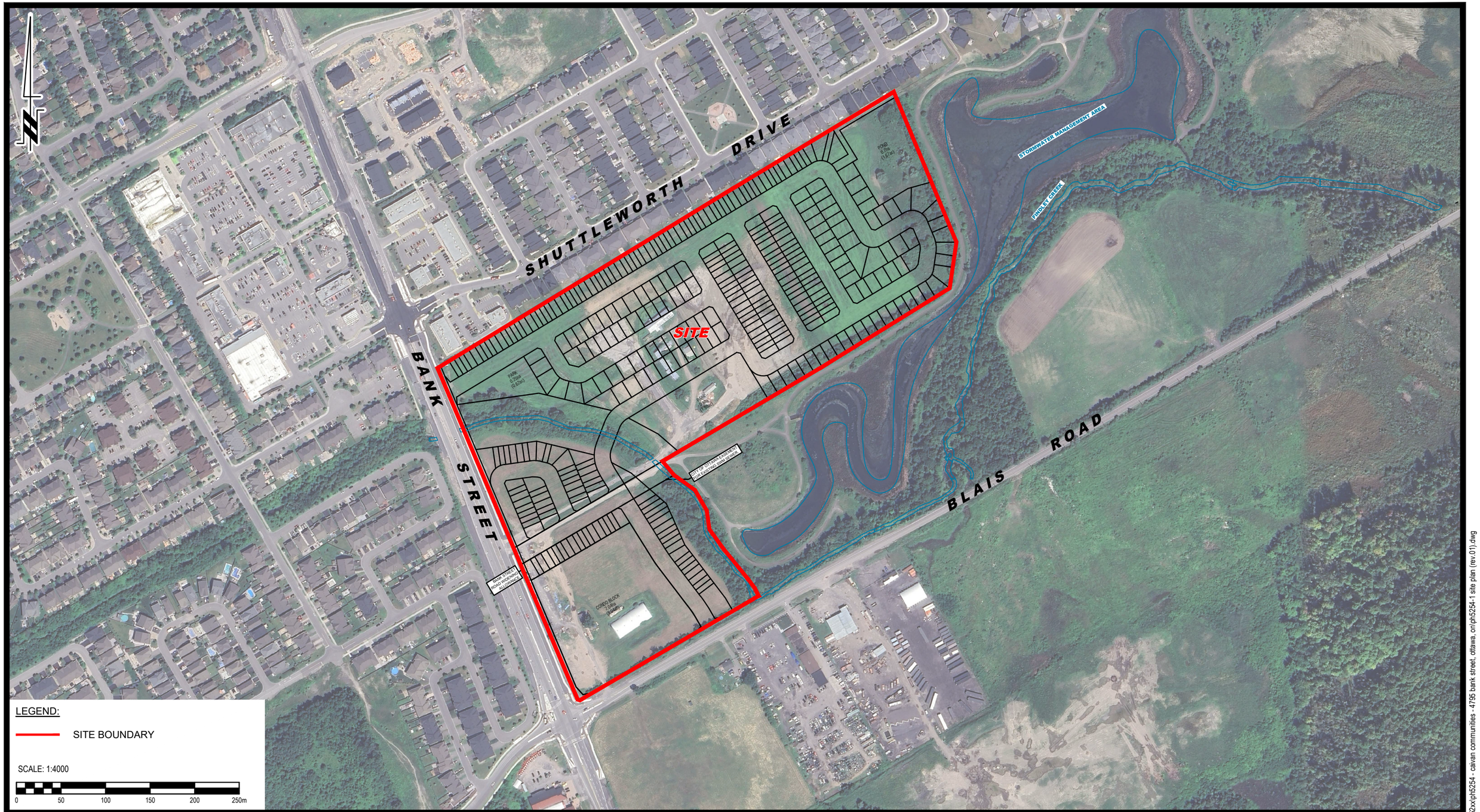
DRAWING PH5254-4 - BEDROCK GEOLOGY PLAN

DRAWING PH5254-5 - GROUNDWATER CONTOUR PLAN

DRAWING PH5254-6 - PRE-DEVELOPMENT TERRAIN COMPOSITION PLAN

DRAWING PH5254-7 - POST-DEVELOPMENT TERRAIN COMPOSITION PLAN

MONITORING WELL WATER ELEVATION PLOTS



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NO.	REVISIONS	DD/MM/YYYY	INITIAL
1	UPDATED CONCEPT PLAN	26/06/2026	OB

CAIVAN COMMUNITIES
HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4795 BANK STREET
OTTAWA, ONTARIO

Title:

SITE PLAN

Scale: 1:4000	Date: 05/2026
Drawn by: GK	Report No.: PH5254-REP.01
Checked by: AS	Dwg. No.: PH5254-1
Approved by: ML	Revision No.: 1

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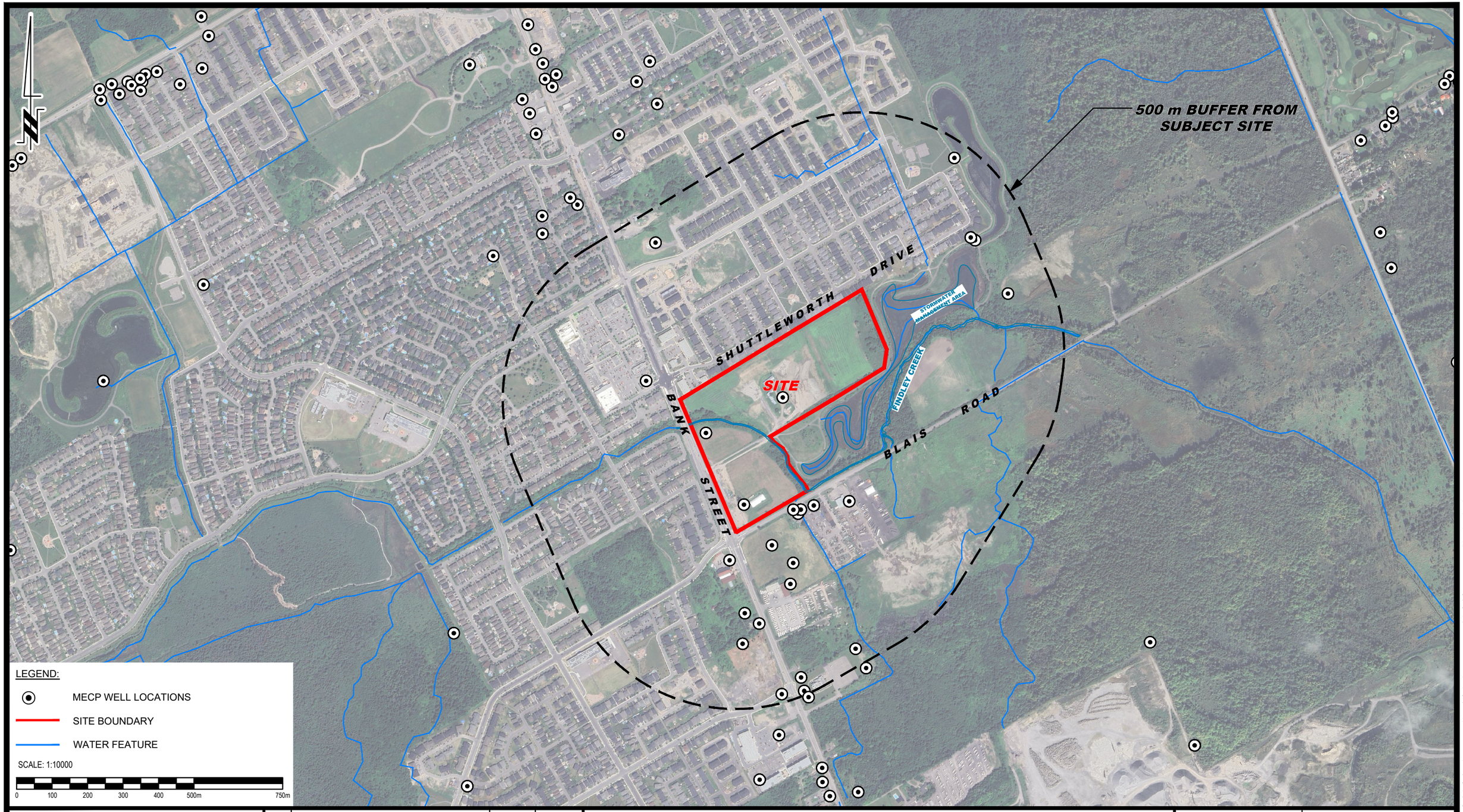

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CAIVAN COMMUNITIES
HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4795 BANK STREET
OTTAWA, ONTARIO

Title:
SITE PLAN

Scale: 1:10000	Date: 05/2026
Drawn by: GK	Report No.: PH5254-REP.01
Checked by: AS	Dwg. No.: PH5254-2
Approved by: ML	Revision No.:

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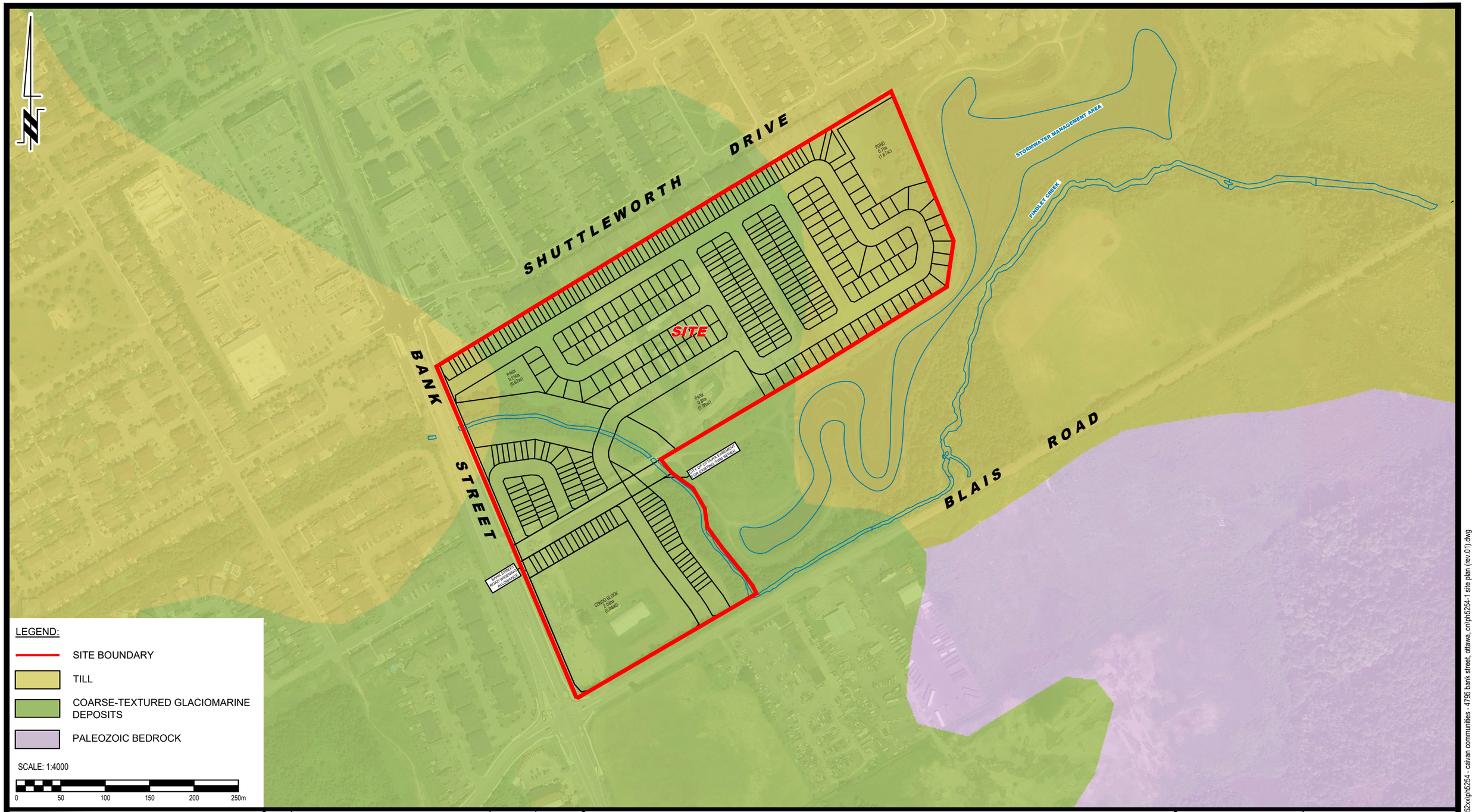

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NO.	REVISIONS	DD/MM/YYYY	INITIAL
1	UPDATED CONCEPT PLAN	26/06/2026	OB

CAIVAN COMMUNITIES
HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4795 BANK STREET
OTTAWA, ONTARIO

Title:
SURFICIAL GEOLOGY PLAN

Scale: 1:4000	Date: 05/2026
Drawn by: GK	Report No.: PH5254-REP.01
Checked by: AS	Dwg. No.: PH5254-3
Approved by: ML	Revision No.: 1

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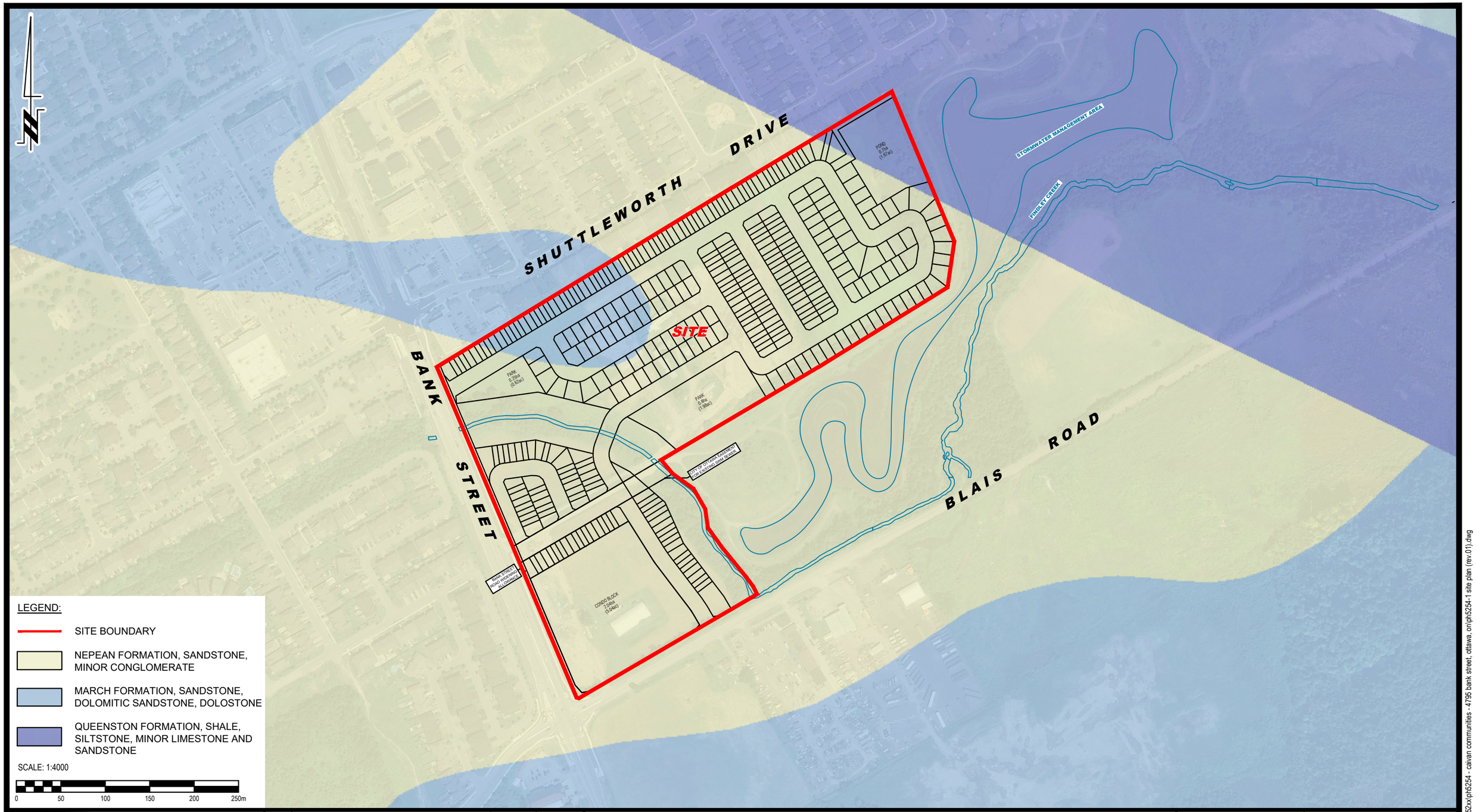

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NO.	REVISIONS	DD/MM/YYYY	INITIAL
1	UPDATED CONCEPT PLAN	26/06/2026	OB

CAIVAN COMMUNITIES
HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4795 BANK STREET
OTTAWA, ONTARIO

Title:

BEDROCK GEOLOGY PLAN

Scale: 1:4000	Date: 05/2026
Drawn by: GK	Report No.: PH5254-REP.01
Checked by: AS	Dwg. No.: PH5254-4
Approved by: ML	Revision No.: 1

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LEGEND:

- SITE BOUNDARY
- BOREHOLE WITH MONITORING WELL LOCATION, CURRENT INVESTIGATION
- BOREHOLE LOCATION, 2024
- BOREHOLE WITH MONITORING WELL LOCATION, 2024
- PROBEHOLE LOCATION
- PREVIOUS TEST PIT LOCATION (PATERSON GROUP REPORT: PG6896-1, NOVEMBER, 2023)

91.20 GROUND SURFACE ELEVATION (m)

[78.18] INFERRED BEDROCK ELEVATION, BASED ON PROBE HOLE (m)

{84.46} PRACTICAL REFUSAL TO AUGERING ELEVATION (m)

(86.22) PRACTICAL REFUSAL TO DCPT ELEVATION (m)

(90.23) OVERBURDEN GROUNDWATER SURFACE ELEVATION (m) (MAY 21, 2026)

89 GROUNDWATER CONTOUR (m)

APPROX.GROUNDWATER FLOW DIRECTION

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

SCALE: 1:4000

0 50 100 150 200 250m

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

NO.	REVISIONS	DD/MM/YYYY	INITIAL
1	UPDATED CONCEPT PLAN	26/06/2026	OB

CAIVAN COMMUNITIES
HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4795 BANK STREET
OTTAWA, ONTARIO

Title:
OVERBURDEN GROUNDWATER CONTOUR PLAN

Scale: 1:4000	Date: 05/2026
Drawn by: GK	Report No.: PH5254-REP.01
Checked by: AS	Dwg. No.: PH5254-5
Approved by: ML	Revision No.: 1

11x17

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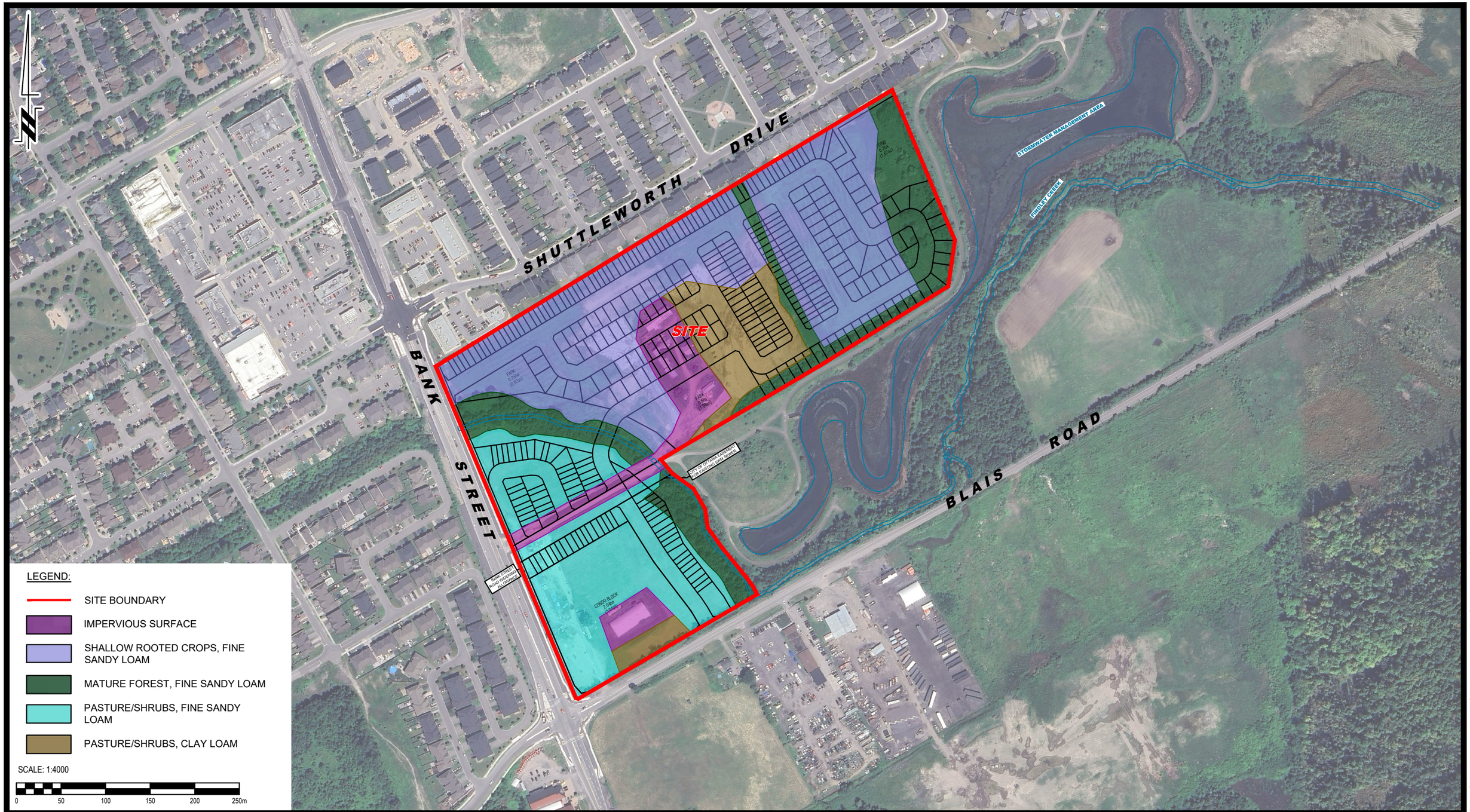

LEGEND:

- SITE BOUNDARY
- IMPERVIOUS SURFACE
- SHALLOW ROOTED CROPS, FINE SANDY LOAM
- MATURE FOREST, FINE SANDY LOAM
- PASTURE/SHRUBS, FINE SANDY LOAM
- PASTURE/SHRUBS, CLAY LOAM

SCALE: 1:4000

0 50 100 150 200 250m

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
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NO.	REVISIONS	DD/MM/YYYY	INITIAL
1	UPDATED CONCEPT PLAN	26/06/2026	OB

CAIVAN COMMUNITIES
HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4795 BANK STREET
OTTAWA, ONTARIO

Title:
PRE-DEVELOPMENT TERRAIN COMPOSITION PLAN

Scale: 1:4000	Date: 05/2026
Drawn by: GK	Report No.: PH5254-REP.01
Checked by: AS	Dwg. No.: PH5254-6
Approved by: ML	Revision No.: 1

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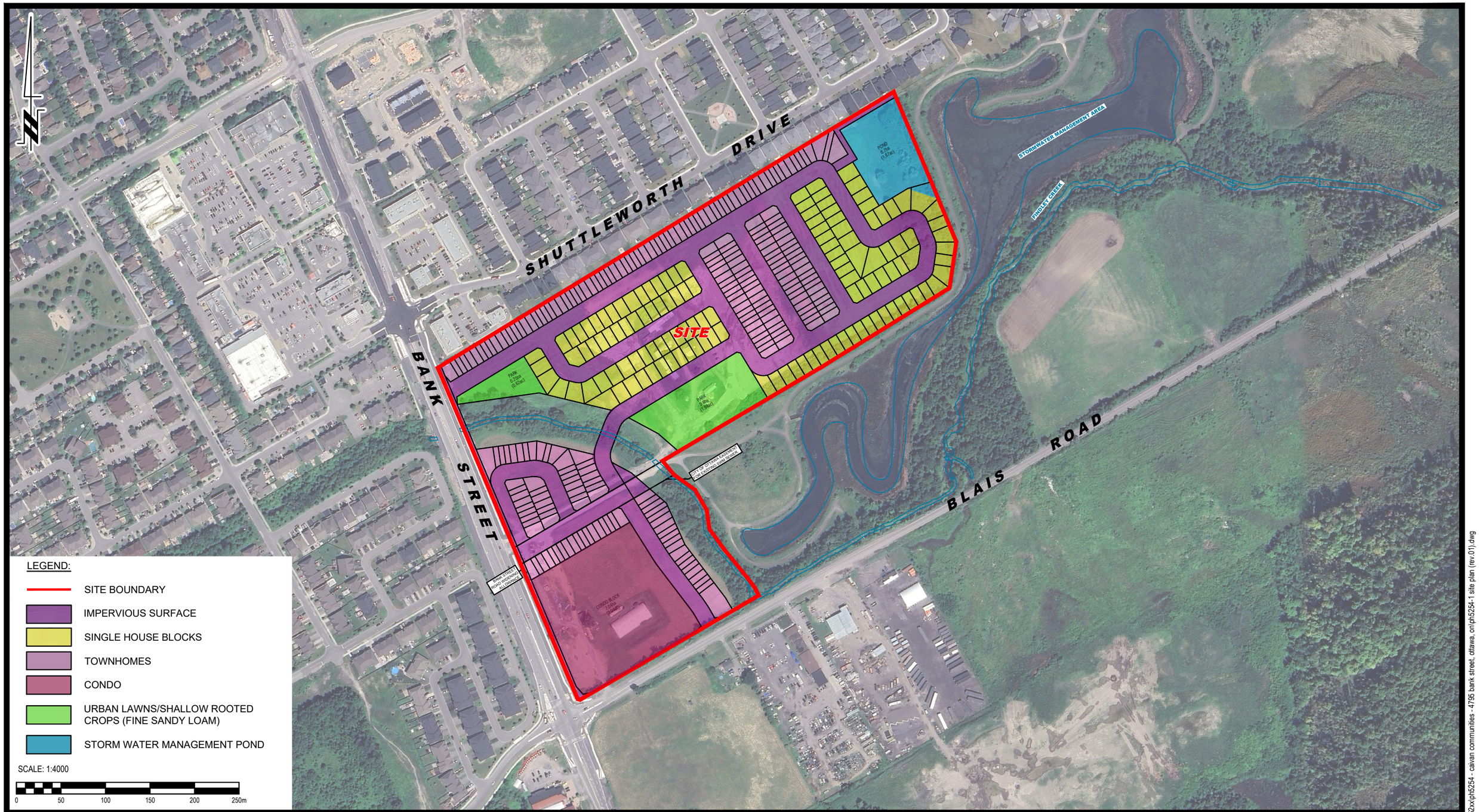
11x17



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

NO.	REVISIONS	DD/MM/YYYY	INITIAL
1	UPDATED CONCEPT PLAN	26/06/2026	OB

CAIVAN COMMUNITIES
HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4795 BANK STREET
OTTAWA, ONTARIO

Title:
POST-DEVELOPMENT TERRAIN COMPOSITION PLAN

Scale: 1:4000	Date: 05/2026
Drawn by: GK	Report No.: PH5254-REP.01
Checked by: AS	Dwg. No.: PH5254-7
Approved by: ML	Revision No.: 1

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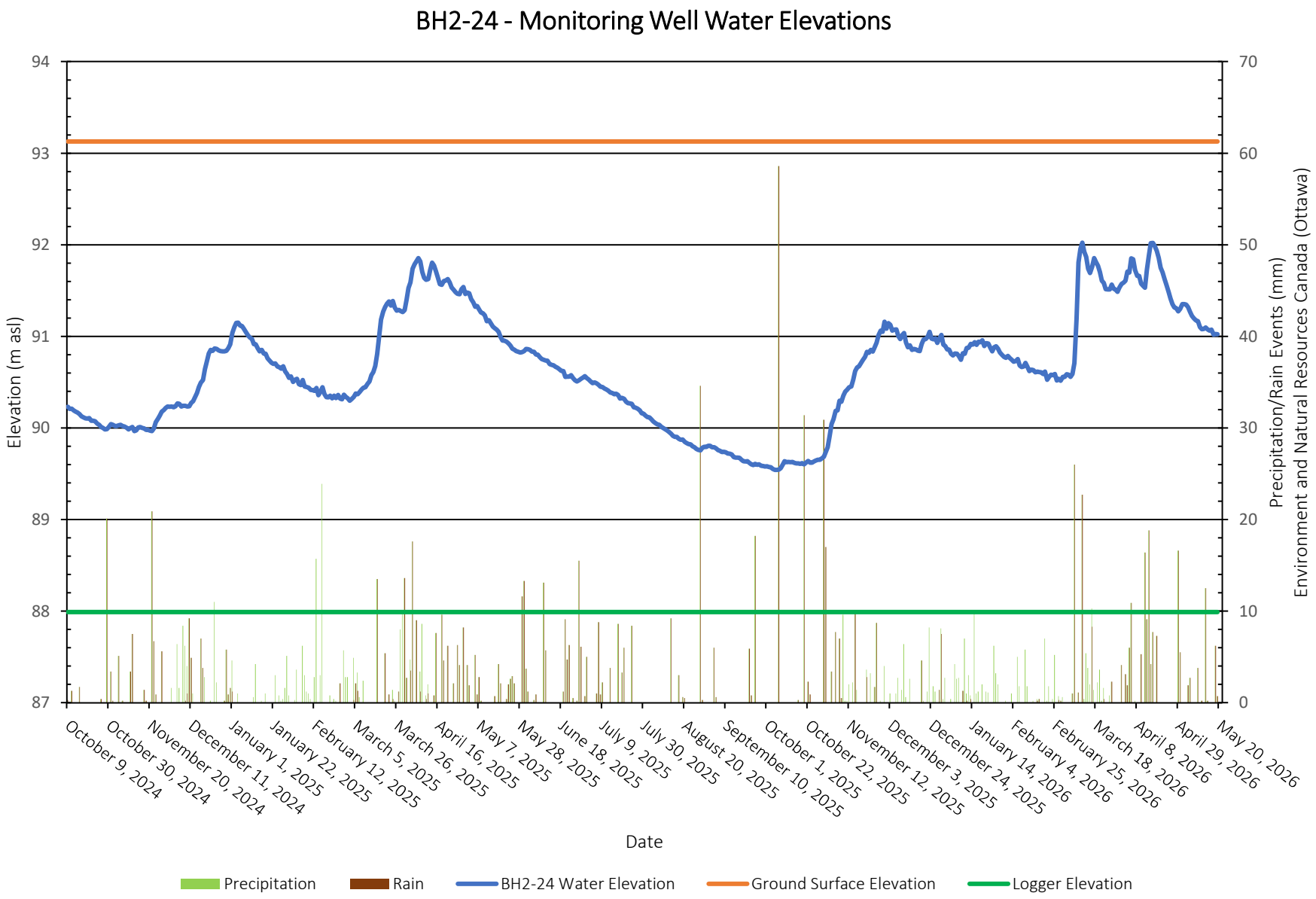
Caivan Communities
4795 Bank Street and 3301 Blais Road, Ottawa
Monitoring Well Water Elevations



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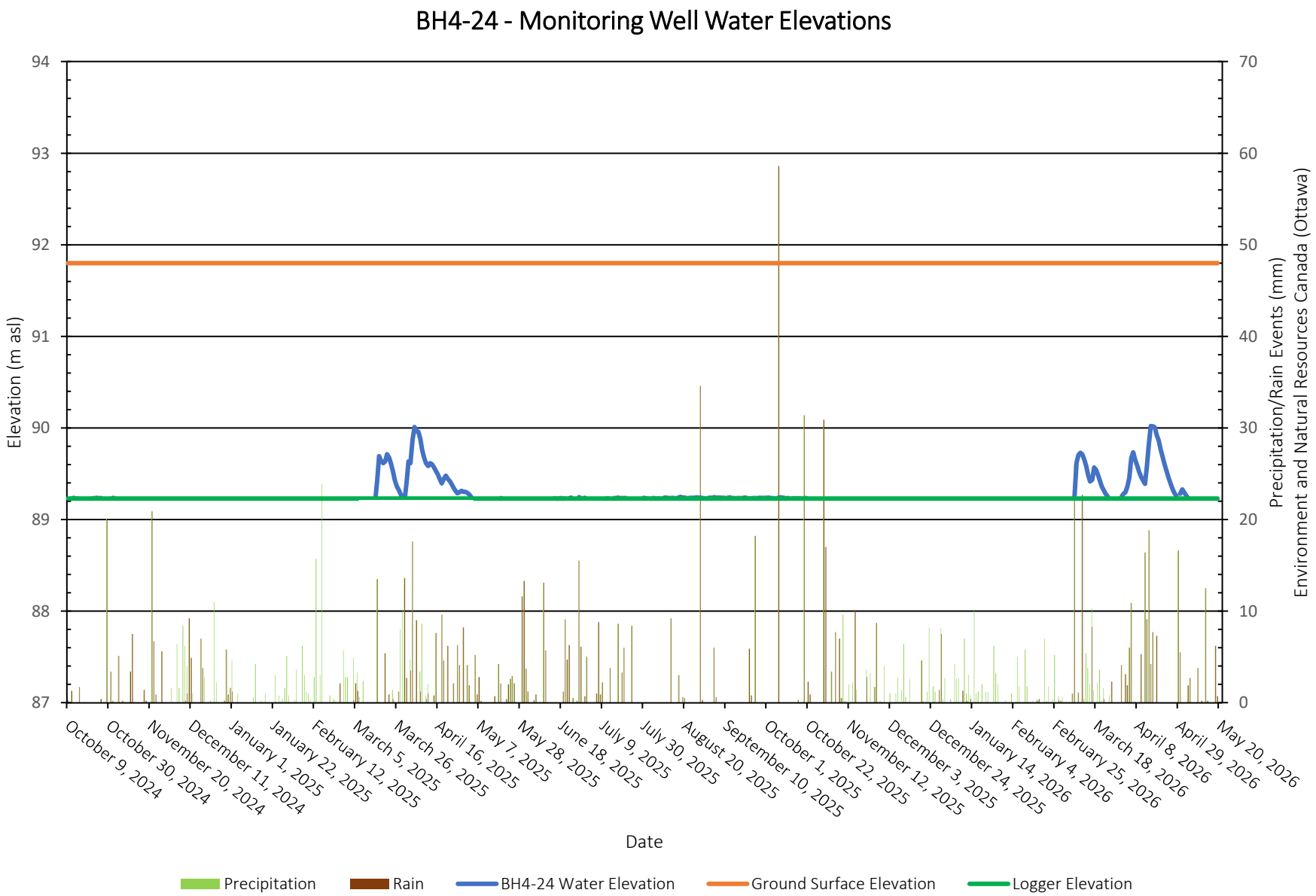
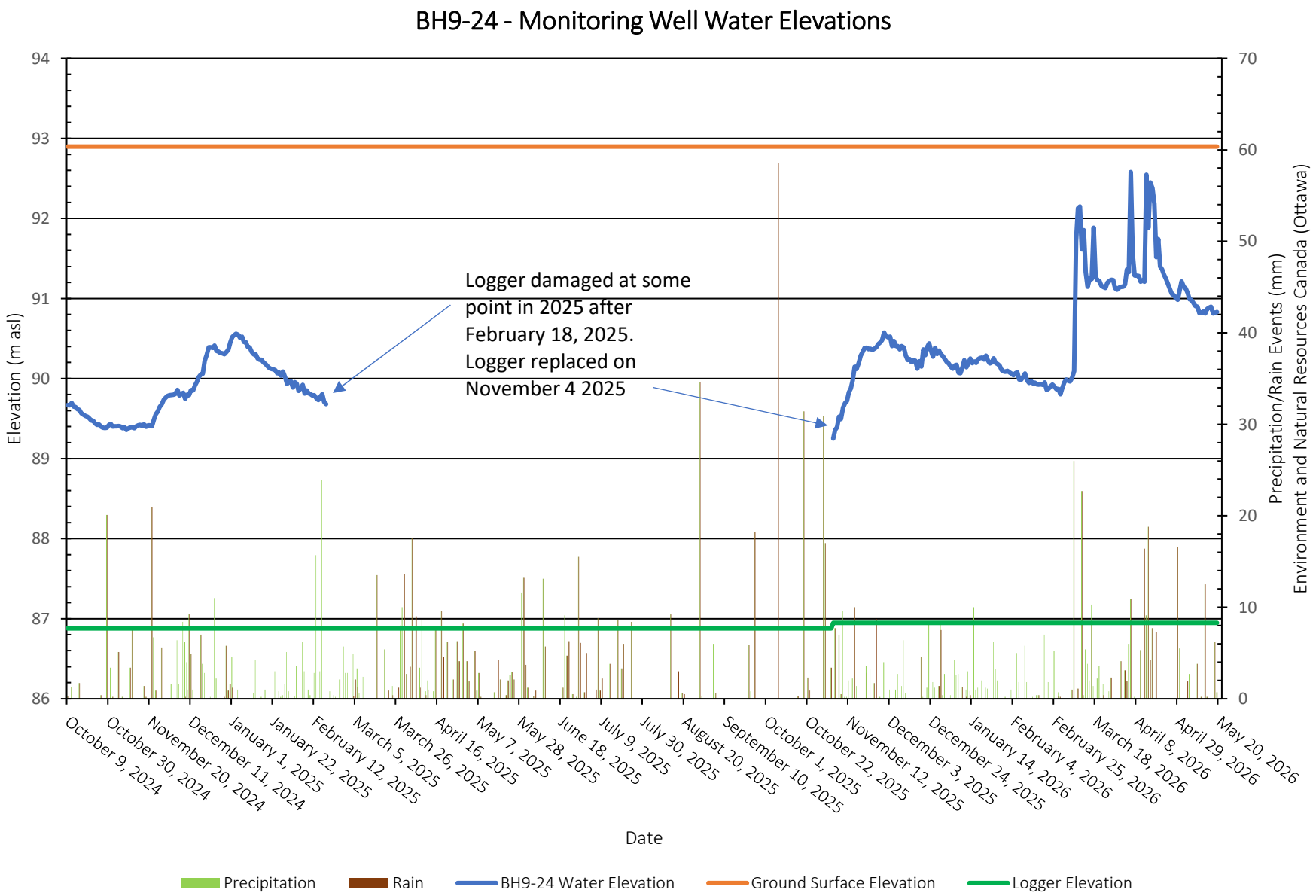
Caivan Communities
4795 Bank Street and 3301 Blais Road, Ottawa
Monitoring Well Water Elevations



Caivan Communities
4795 Bank Street and 3301 Blais Road, Ottawa
Monitoring Well Water Elevations



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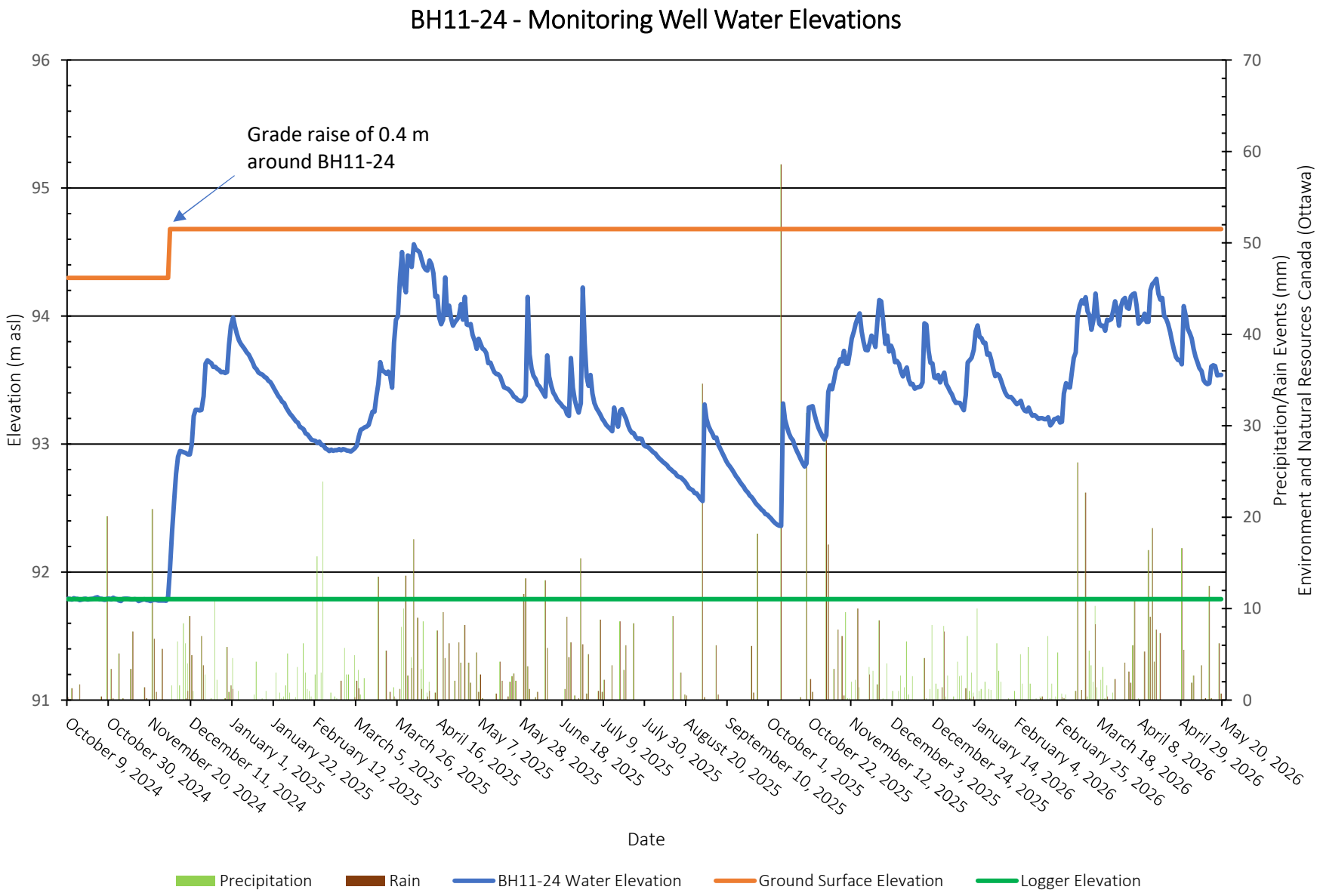
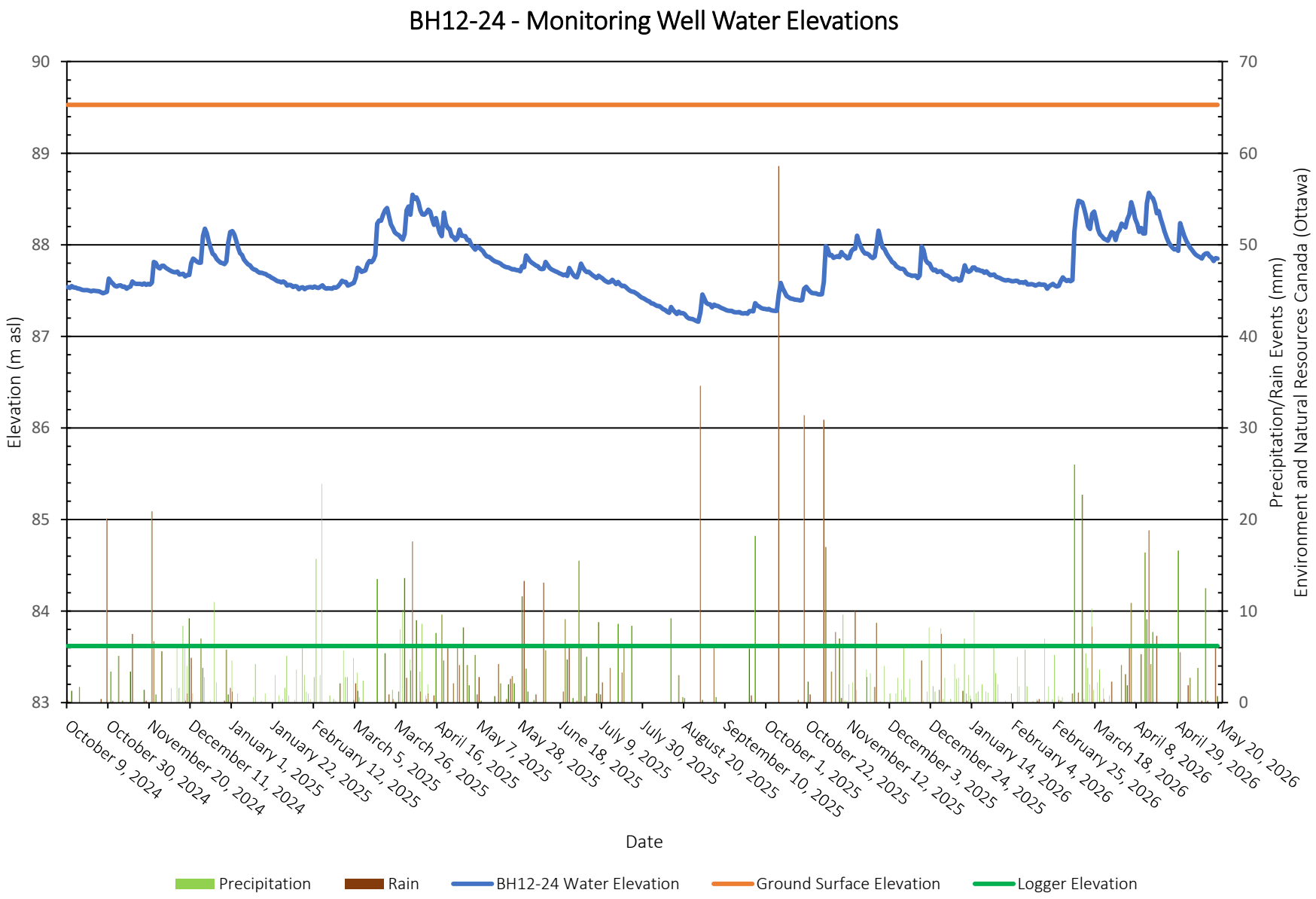
Caivan Communities
4795 Bank Street and 3301 Blais Road, Ottawa
Monitoring Well Water Elevations



Caivan Communities
4795 Bank Street and 3301 Blais Road, Ottawa
Monitoring Well Water Elevations



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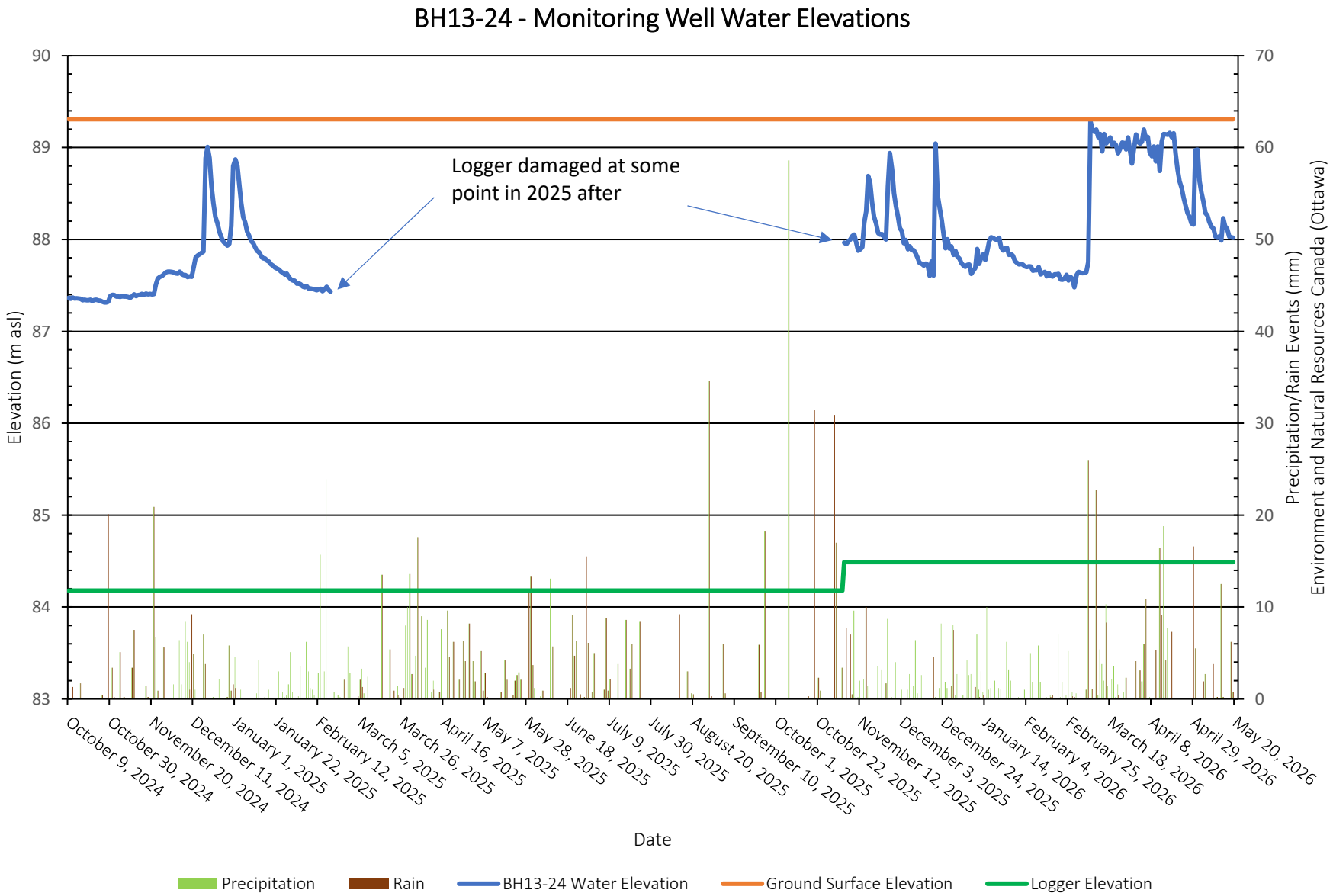

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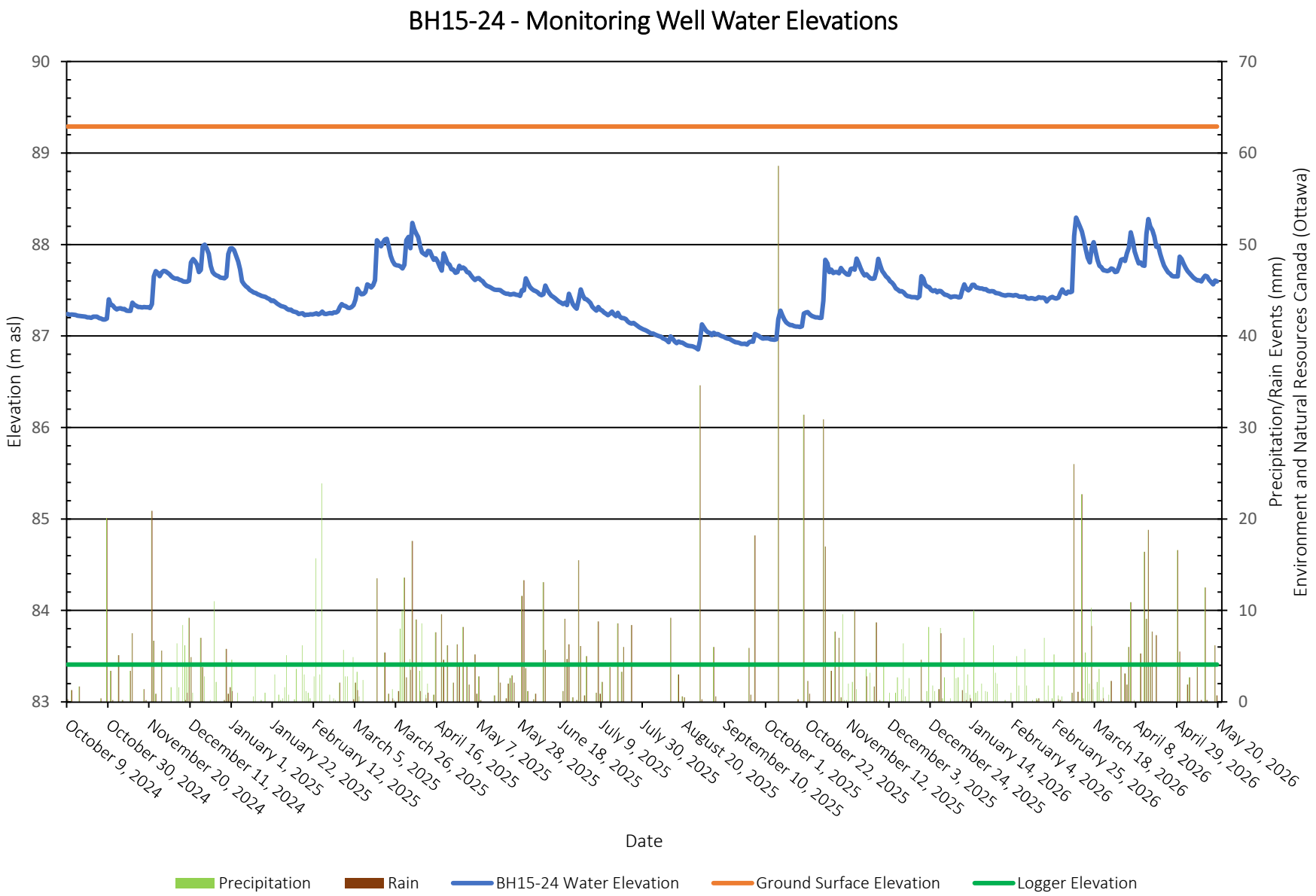

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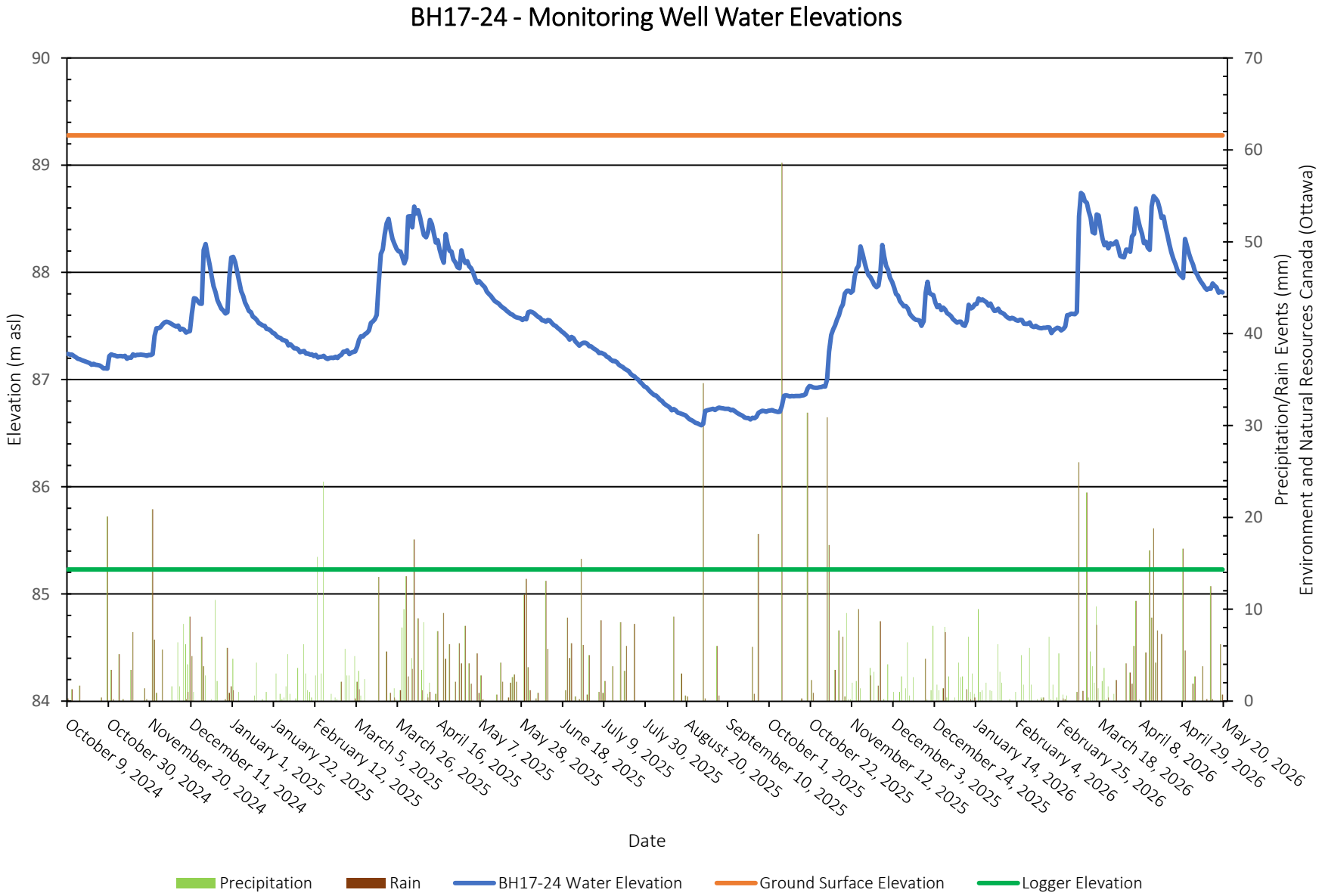
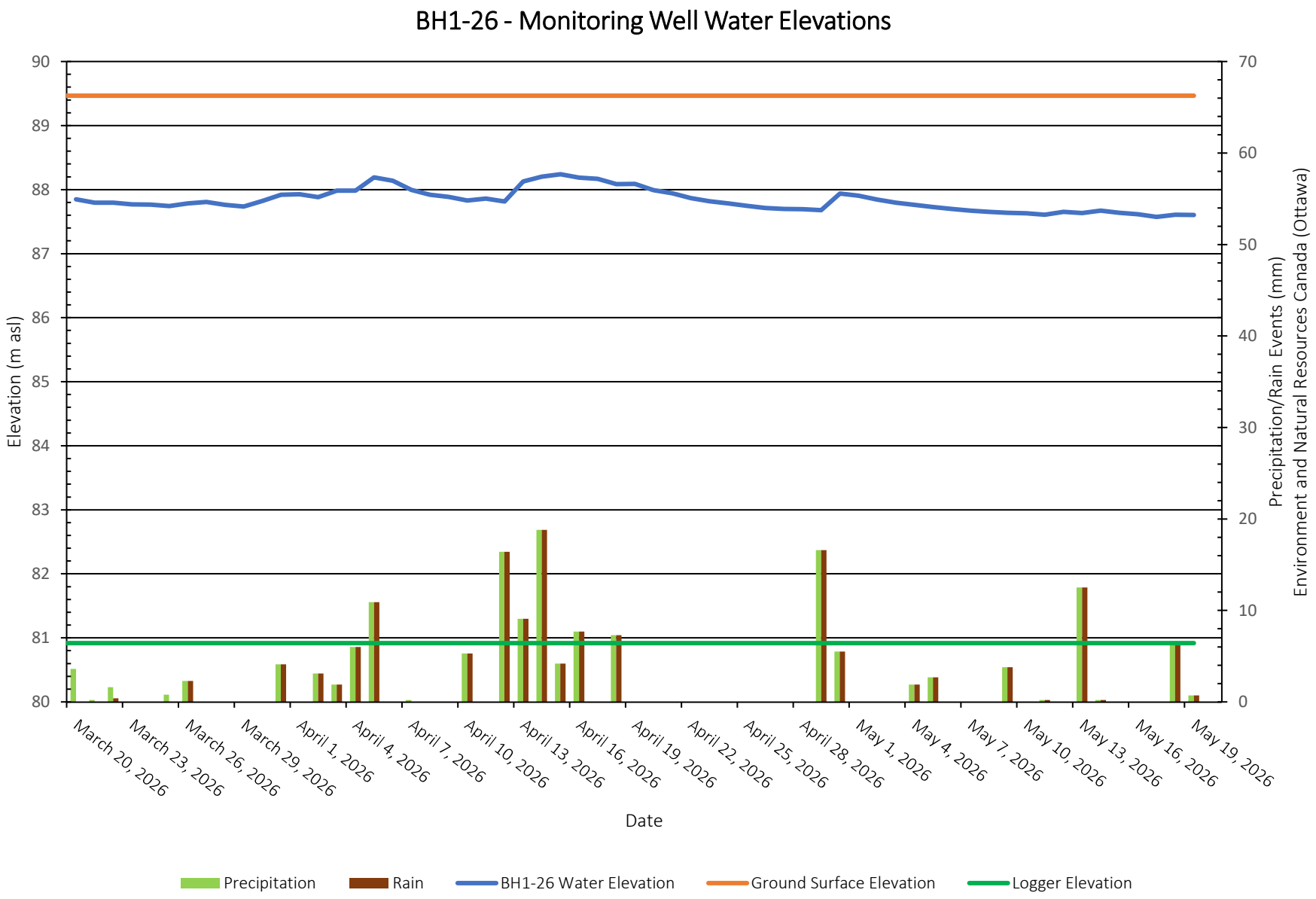


Caivan Communities
4795 Bank Street and 3301 Blais Road, Ottawa
Monitoring Well Water Elevations



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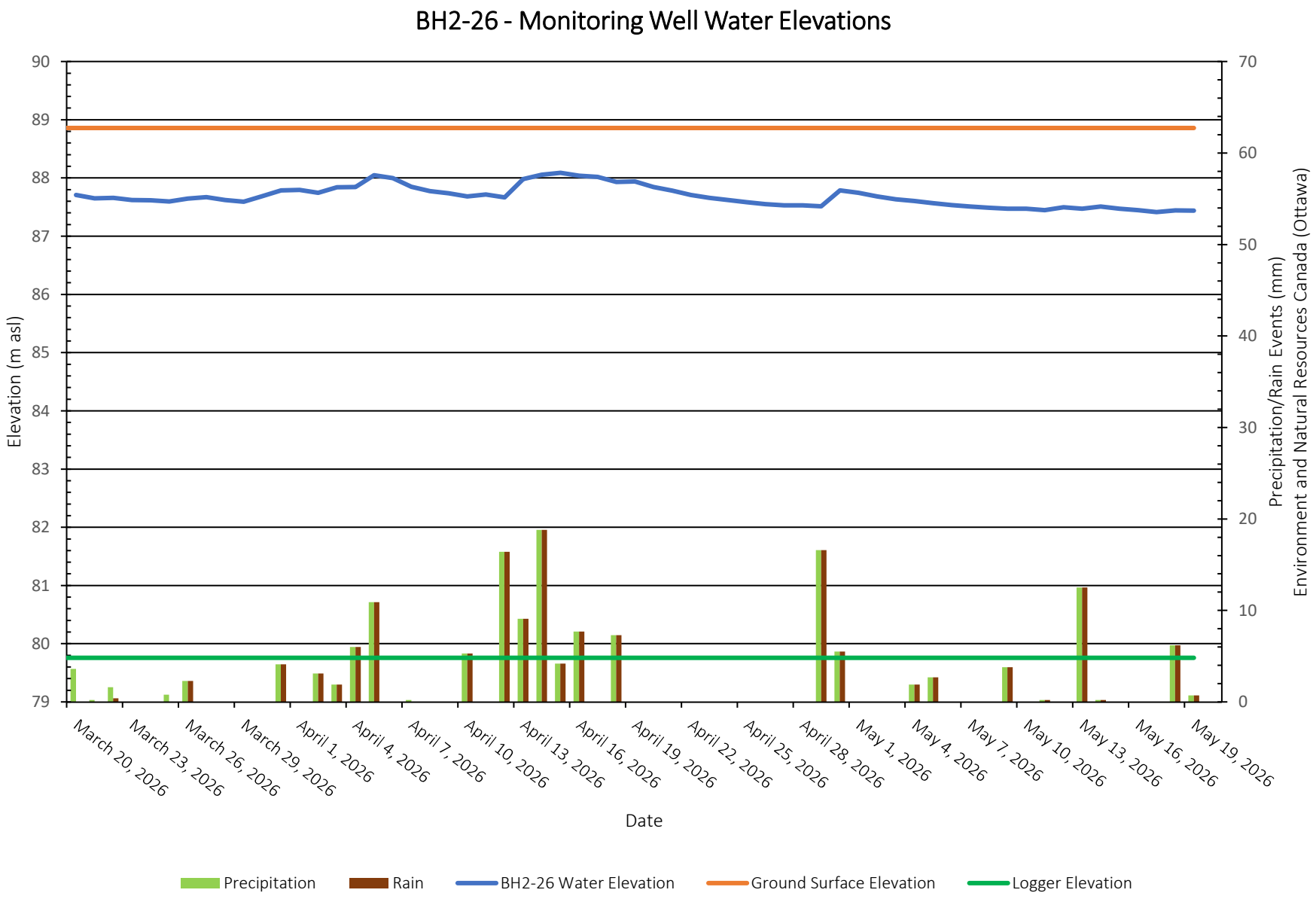

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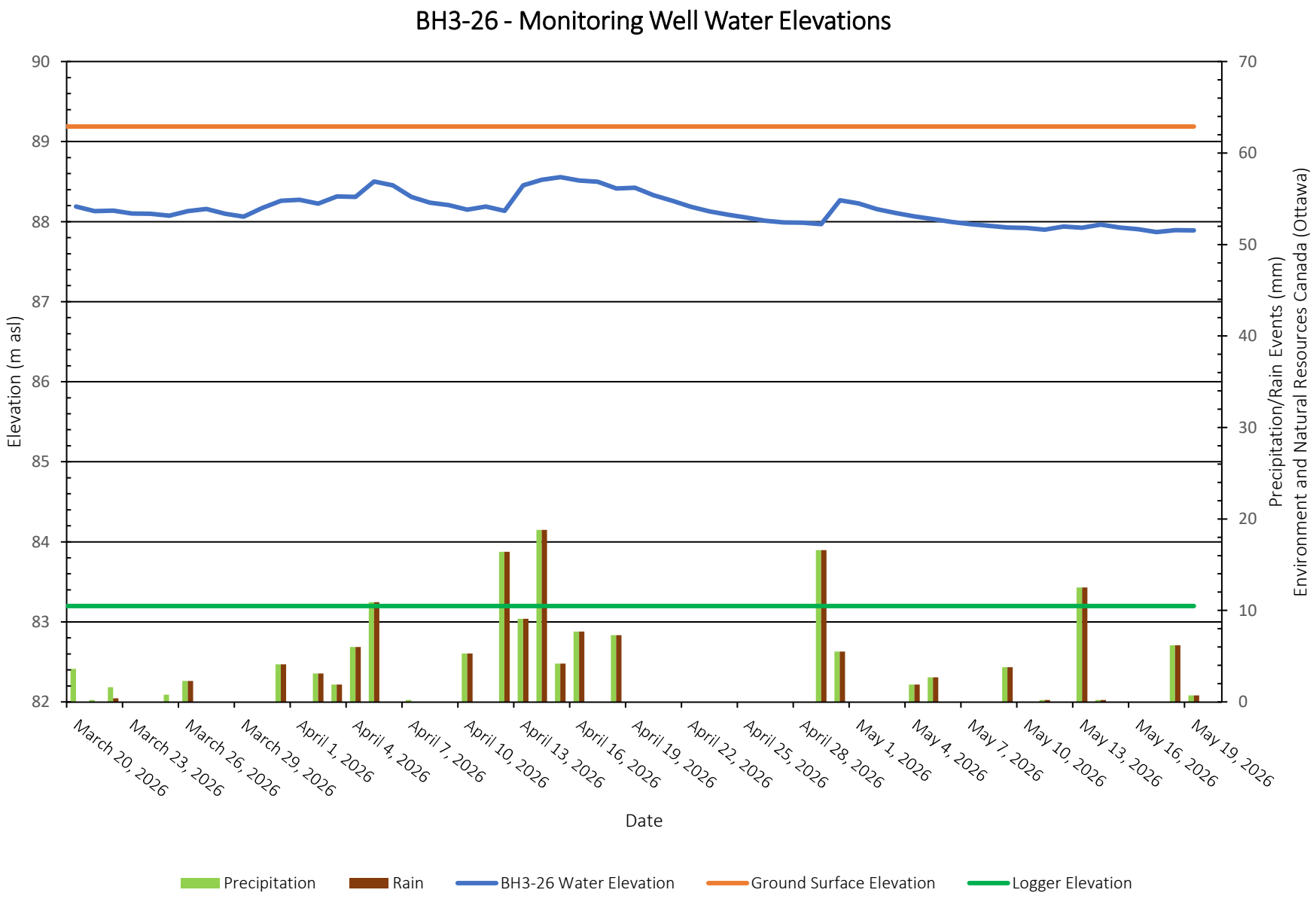
Monitoring Well Water Elevations



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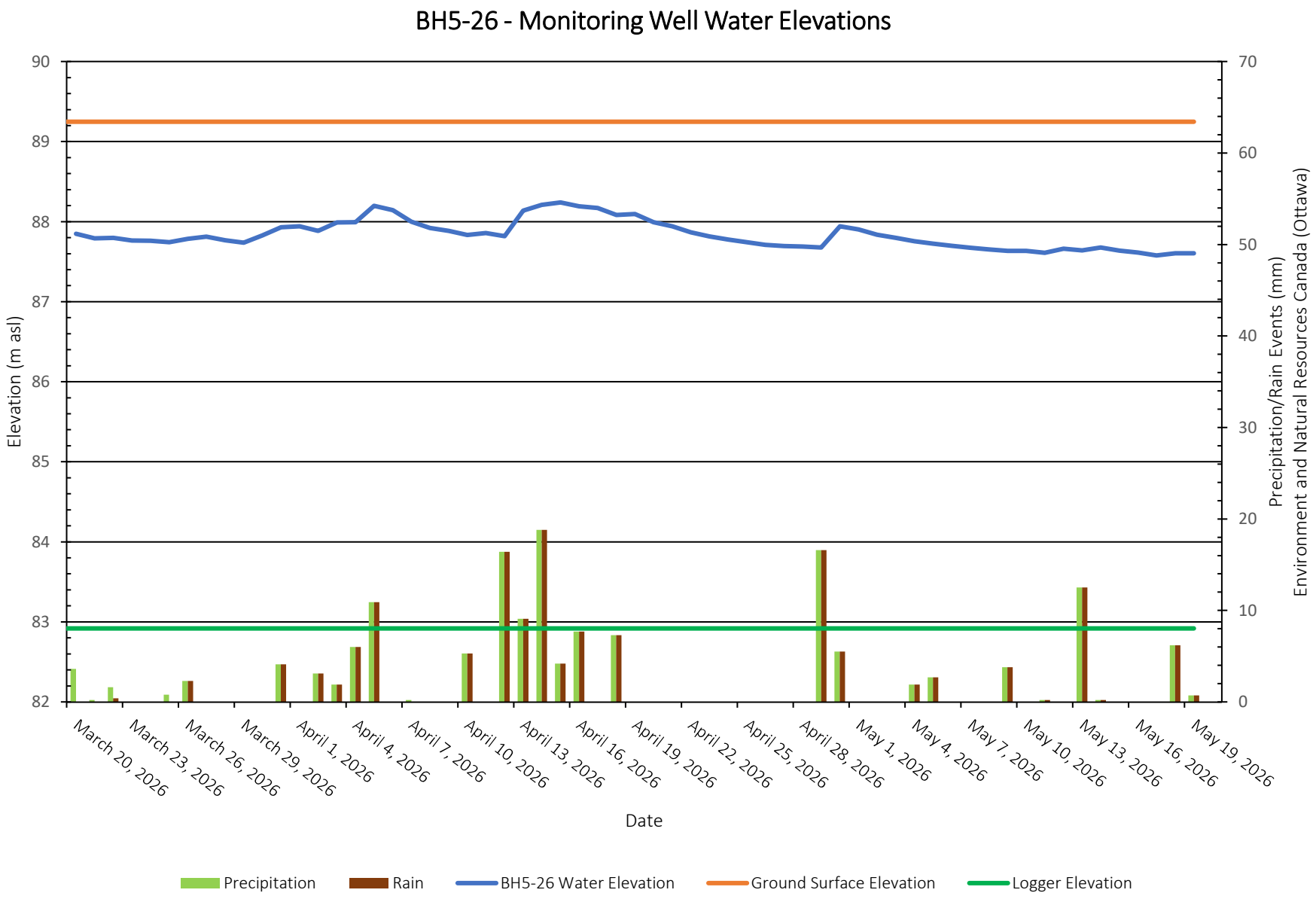

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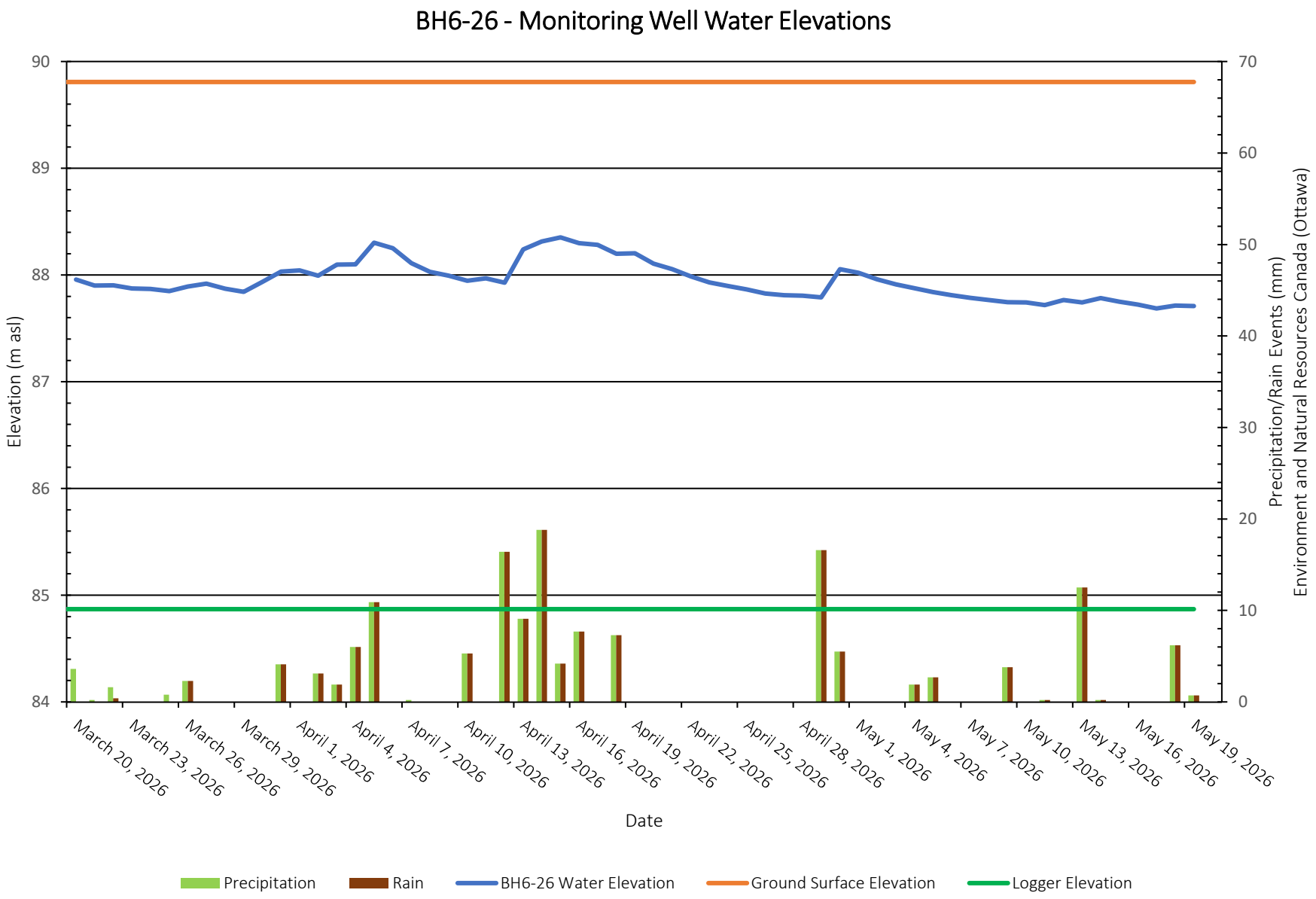

APPENDIX 1

SOIL PROFILE AND TEST DATA SHEETS

DRAWING PG7301-1 - TEST HOLE LOCATION PLAN

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376166.29 **NORTHING:** 5019808.33 **ELEVATION:** 93.47

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 25, 2024

FILE NO. : PG7301

HOLE NO. : BH 1-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics 0.15m [93.32m]		0	AU 1						93
GLACIAL TILL: Loose brown silty sand with gravel, cobbles and boulders - Very dense by 0.80 m depth 1.17m [92.30m]		1	SS 2	74	6-23-50-/ 73/0.25	9.5			92
End of Borehole Practical refusal to augering at 1.17 m depth (BH Dry - October 09, 2024)		2							91
		3							90
		4							89
		5							88
		6							87
		7							86
		8							85
		9							84
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376261.50 **NORTHING:** 5019824.46 **ELEVATION:** 93.13

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 25, 2024

FILE NO. : PG7301

HOLE NO. : BH 2-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N, Nc OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics 0.20m [92.93m]		0	AU 1						93
FILL: Very dense, brown silty clay, with sand, trace gravel, cobbles and asphalt 1.45m [91.68m]		1	SS 2	92	17-31-35-42 66	9.89			92
GLACIAL TILL: Very dense, brown silty sand, trace clay, occasional gravel, cobbles and boulders 3.89m [89.24m]		2	SS 3	92	28-28-35-27 63	7.06			91
		3	SS 4	79	10-12-14-17 26	16.49		2.9 m 2024-10-09	90
			SS 5	4	10-9-8-10 17	21.47			
GLACIAL TILL: Very stiff, grey silty clay, with gravel and cobbles 5.23m [87.90m]		4	SS 6	42	7-6-26-12 32	13.79 10.6			89
		5	SS 7	43	7-5-23-50 28	10.56			88
End of Borehole		6							87
Practical refusal to augering at 5.23 m depth		7							86
(GWL at 2.90 m depth - October 9, 2024)		8							85
		9							84
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376312.22 **NORTHING:** 5019885.37 **ELEVATION:** 91.48

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 25, 2024

FILE NO. : PG7301

HOLE NO. : BH 3-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics		0							91
0.15m [91.33m]									
GLACIAL TILL: Loose brown silty sand, trace clay, occasional gravel, cobbles and boulders			AU 1						
- Very dense by 0.8 m depth		1	SS 2	86	16-50-/-/ 50/0.3	10.19			90
1.02m [90.46m]									
End of Borehole									
Practical refusal to augering at 1.02 m depth		2							89
(BH Dry - October 09, 2024)									
		3							88
		4							87
		5							86
		6							85
		7							84
		8							83
		9							82
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376195.40 **NORTHING:** 5019922.75 **ELEVATION:** 91.80

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 25, 2024

FILE NO. : PG7301

HOLE NO. : BH 4-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH, Cur (kPa) ▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							91
FILL: Loose, brown silty sand, trace crushed stone			AU 1						
0.69m [91.11m]									
GLACIAL TILL: Dense, brown silty sand, with gravel, trace cobbles and boulders		1	SS 2	71	13-22-23-16 45	6.4	○		90
- Grey by 1.5 m depth		2	SS 3	50	6-15-27-50 42	7.04	○		89
2.62m [89.18m]			SS 4	70	5-50-/-/ 50/0.1	9.27	○		
End of Borehole		3							88
Practical refusal to augering at 2.62 m depth		4							87
(BH Dry - October 09, 2024)		5							86
		6							85
		7							84
		8							83
		9							82
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376185.77 **NORTHING:** 5020018.09 **ELEVATION:** 91.56

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 25, 2024

FILE NO. : PG7301

HOLE NO. : BH 5-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics		0	AU 1						91
0.18m [91.38m]									
GLACIAL TILL: Loose, brown silty sand, trace gravel, some cobbles, boulders		1	SS 2	75	7-12-18-21 30	8.59 5.51			90
- Compact by 1.10 m depth			SS 3	84	9-18-50-/ 68/0.18	4.64			
1.83m [89.73m]		2							89
End of Borehole									
Practical refusal to augering at 1.83 m depth		3							88
(BH Dry - October 09, 2024)		4							87
		5							86
		6							85
		7							84
		8							83
		9							82
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376093.56 **NORTHING:** 5020000.31 **ELEVATION:** 92.27

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 25, 2024

FILE NO. : PG7301

HOLE NO. : BH 6-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH, Cur (kPa) ▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							92
TOPSOIL and organics 0.28m [91.99m]			AU 1						
Loose, brown **SILTY SAND** 0.61m [91.66m]									
GLACIAL TILL: Very dense, brown silty sand, with gravel, cobbles and boulders		1	SS 2	92	15-29-37-30 66	8.91	○		91
1.88m [90.39m]			SS 3	78	15-46-50-/ 96/0.2	8.82	○		
End of Borehole		2							90
Practical refusal to augering at 1.88 m depth									
(BH Dry - October 09, 2024)		3							89
		4							88
		5							87
		6							86
		7							85
		8							84
		9							83
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376044.89 **NORTHING:** 5020116.72 **ELEVATION:** 91.61

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 25, 2024

FILE NO. : PG7301

HOLE NO. : BH 7-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics 0.30m [91.31m]		0	AU 1						91
Loose, brown **SILTY SAND** 0.76m [90.85m]									
GLACIAL TILL: Compact, brown silty sand, occasional gravel, cobbles and boulders		1	SS 2	54	3-5-11-7 16	12.03	○		90
- Grey by 1.5 m depth			SS 3	25	2-1-5-18 6	9.17	○		
2.13m [89.48m]		2							89
End of Borehole									
Practical refusal to augering at 2.13 m depth		3							88
(BH Dry - October 09, 2024)		4							87
		5							86
		6							85
		7							84
		8							83
		9							82
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376132.74 **NORTHING:** 5020181.66 **ELEVATION:** 93.69

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 26, 2024

FILE NO. : PG7301

HOLE NO. : BH 8-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH, Cur (kPa) ▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							93
TOPSOIL and organics 0.18m [93.51m]			AU 1						
Loose, brown **SILTY SAND**, trace gravel 0.69m [93.00m]		1	SS 2	96	17-25-48-37 73	9.38	○		92
GLACIAL TILL: Very dense, brown silty clay, with gravel, occasional cobbles and boulders - Grey by 1.5 m depth		2	SS 3	92	16-21-26-24 47	7.14	○		91
			SS 4	79	9-30-35-33 65	7.51	○		90
		3	SS 5	42	15-37-29-10 66	7.74	○		89
3.84m [89.85m]			SS 6	0	50-/-/-/ 50/0.03				
End of Borehole Practical refusal to augering at 3.84 m depth (BH Dry - October 09, 2024)		4							88
		5							87
		6							86
		7							85
		8							84
		9							
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376290.59 **NORTHING:** 5020275.07 **ELEVATION:** 92.90

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 26, 2024

FILE NO. : PG7301

HOLE NO. : BH 9-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics		0	AU 1						
0.28m [92.62m]									
Loose, brown **SILTY SAND**, trace gravel									
1.02m [91.88m]		1	SS 2	83	4-11-34-26 45	10.65 9.67			92
GLACIAL TILL: Very dense, brown silty sand, with gravel, cobbles and boulders									
1.52m [91.38m]									
GLACIAL TILL: Grey clayey silt, with gravel, cobbles and boulders		2	SS 3	92	16-27-30-29 57	6.84			91
			SS 4	75	8-17-27-15 44	8.66			
		3	SS 5	67	8-14-23-29 37	7.71			90
			SS 6	100	18-50-/-/ 50/0.05	9.71			89
4.57m [88.33m]									
GLACIAL TILL: Grey sandy silt, trace clay, with gravel, cobbles and boulders		5	SS 7	71	11-28-50-/ 78/0.28	11.21			88
			SS 8	100	35-50-/-/ 50/0.05	9.81			
6.10m [86.80m]		6							87
Dynamic Cone Penetration Test Comenced at 6.10 m depth									
6.40m [86.50m]									
End of Borehole		7							86
Practical refusal to DCPT at 6.40 m depth									
(GWL at 3.20 m depth - October 9, 2024)		8							85
								3.2 m 2024-10-09	
		9							84
		10							83

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376347.34 **NORTHING:** 5020162.69 **ELEVATION:** 91.91

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 26, 2024

FILE NO. : PG7301

HOLE NO. : BH10-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics		0	AU 1						91
0.23m [91.68m]									
Firm, brown **SILTY CLAY**, trace sand									
0.69m [91.22m]									
GLACIAL TILL: Very dense, brown silty clay, with gravel, cobbles and boulders		1	SS 2	79	10-17-28-44 45	9.09			90
- Grey by 1.8 m depth		2	SS 3	100	18-23-24-28 47	9.87 7.12			89
		3	SS 4	75	4-4-9-15 13	9.94			88
			SS 5	71	3-12-15-30 27	12.2			87
		4	SS 6	100	15-24-35-48 59	6.99			86
		5	SS 7	91	38-50-/-/ 50/0.13	6.8			85
		6	SS 8	100	25-50-/-/ 50/0.08	5.73		5.8 m 2024-10-09	84
6.10m [85.81m]									83
End of Borehole		7							82
(GWL at 5.76 m depth - October 9, 2024)		8							
		9							
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376217.33 **NORTHING:** 5020152.31 **ELEVATION:** 94.30

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 26, 2024

FILE NO. : PG7301

HOLE NO. : BH11-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics		0	AU 1						94
0.25m [94.05m]									
Loose, brown **SILTY SAND**									
0.69m [93.61m]									
Very stiff, brown **CLAYEY SILT**		1	SS 2	83	3-6-14-17 20	25.24	○		93
1.68m [92.62m]			SS 3	96	15-24-22-14 46	23.83	○		
GLACIAL TILL: Very dense, brown silty sand, trace clay, with gravel, occasional cobbles and boulders		2				8.46	○		
- Grey by 2.3 m depth			SS 4	71	3-50-/-/ 50/0.1	9.72	○		92
2.62m [91.68m]									
End of Borehole		3							91
Practical refusal to augering at 2.62 m depth									
(BH Dry - October 09, 2024)		4							90
		5							89
		6							88
		7							87
		8							86
		9							85
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376432.01 **NORTHING:** 5020344.88 **ELEVATION:** 89.53

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 26, 2024

FILE NO. : PG7301

HOLE NO. : BH12-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N, Nc OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							89
TOPSOIL and organics 0.36m [89.17m]									
Loose, brown **SILTY SAND**, trace clay 0.69m [88.84m]		1	AU 1						88
Stiff, Brown **CLAYEY SILT** with sand			SS 2	71	6-6-6-10 12	25.09 20.49			
		2	SS 3	75	7-6-8-9 14	27.1		2.0 m ▼ 2024-10-09	87
- Very stiff and grey by 2.4 m			SS 4	67	6-9-8-7 17	23.37			
- soft by 3.1 m depth		3	SS 5	100	1-1-2-1 3	25.52	2023 H		86
4.11m [85.42m]		4	SS 6	62	P	29.54 19.35	121 H		85
Compact, grey **SILTY SAND**, trace gravel			SS 7	100	4-5-9-5 14	15.75			
5.26m [84.27m]		5							84
GLACIAL TILL: Dense sandy silt, with gravel, cobbles			SS 8	100	10-14-15-16 29	14.59			
6.10m [83.43m]		6							83
End of Borehole									
(GWL at 2.05 m depth - October 9, 2024)		7							82
		8							81
		9							80
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376509.59 **NORTHING:** 5020188.33 **ELEVATION:** 89.31

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 27, 2024

FILE NO. : PG7301

HOLE NO. : BH13-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N, Nc OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							89
TOPSOIL and organics			AU 1						
0.23m [89.08m]									
Loose, brown **SILTY SAND**, trace clay									
0.61m [88.70m]		1	SS 2	79	7-6-5-7 11	11.11			88
GLACIAL TILL: Compact, brown silty sand, trace clay with gravel, occasional cobbles			SS 3	87	8-12-11-19 23	9.42 13.89		2.0 m ▼ 2024-10-09	
- Very dense by 2.30m depth		2	SS 4	75	10-19-25-38 44	10.54			87
		3	SS 5	88	6-28-50-/ 78/0.28	11.15			86
3.66m [85.65m]									
GLACIAL TILL: Very dense, brown silty clay, with gravel, occasional cobbles		4	SS 6	100	50-/-/-/ 50/0.13	10.84			85
5.28m [84.03m]		5	SS 7	78	27-50-/-/ 50/0.08	9.74			84
End of Borehole			SS 8	100	50-/-/-/ 50/0.13	9.22			
Practical refusal to augering at 5.28 m depth		6							83
(GWL at 1.93 m depth - October 9, 2024)		7							82
		8							81
		9							80
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376413.92 **NORTHING:** 5020249.09 **ELEVATION:** 90.17

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 27, 2024

FILE NO. : PG7301

HOLE NO. : BH14-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N, Nc OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH, Cur (kPa) ▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics		0							90
0.25m [89.92m]									
Loose, brown **SILTY SAND**, trace clay									
0.69m [89.48m]									
GLACIAL TILL: Dense to very dense, brown silty sand with gravel, cobbles and boulders		1	AU 1						89
			SS 2	67	5-24-24-18 48	8.75			
- Grey by 1.5 m depth		2	SS 3	79	18-30-36-50 66	6.93			88
			SS 4	100	34-50-/-/ 50/0.13	6.56			
		3	SS 5	100	39-50-/-/ 50/0.13	6.43			87
		4	SS 6	100	16-50-/-/ 50/0.1	6.13			86
		5	SS 7	100	23-50-/-/ 50/0.1	5.57			85
			SS 8	100	29-50-/-/ 50/0.03	5.37			
6.10m [84.07m]		6							84
End of Borehole									
(BH Dry - October 09, 2024)		7							83
		8							82
		9							81
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376738.02 **NORTHING:** 5020086.71 **ELEVATION:** 89.29

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 27, 2024

FILE NO. : PG7301

HOLE NO. : BH15-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N, Nc OR RQD	WATER CONTENT (%)	ELEVATION (m)
GROUND SURFACE		0					89
TOPSOIL and organics 0.28m [89.01m]			AU 1				
Loose to compact, brown **SANDY SILT**		1	SS 2	75	6-12-12-13 24	21.05	88
			SS 3	71	9-12-14-14 26	20.87	
2.21m [87.08m]		2					87
Firm to soft, grey **CLAYEY SILT**			SS 4	75	8-3-2-3 5	25.5	
		3	SS 5	83	1-1-0-0 1	28.75	86
		4	SS 6	83	0-2-1-0 3	33.96	85
5.03m [84.26m]			SS 7	100	P	30.81	
Stiff, grey **SILTY CLAY** 5.44m [83.85m]		5				37.87	84
Firm, grey **CLAYEY SILT** 5.84m [83.45m]			SS 8	100	0-0-3-9 3	29.94	
GLACIAL TILL: Very loose, grey silty sand with gravel 6.10m [83.19m]		6				12.47	83
End of Borehole		7					82
(GWL at 2.17 m depth - October 9, 2024)		8					81
		9					80
		10					

PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80

△ REMOULDED SHEAR STRENGTH, Cur (kPa)

▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80

PL (%) WATER CONTENT (%) LL (%) 20 40 60 80

1923

MONITORING WELL CONSTRUCTION: 2.2 m ▼ 2024-10-09

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376738.02 **NORTHING:** 5020086.71 **ELEVATION:** 89.29

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 30, 2024

FILE NO. : PG7301

HOLE NO. : BH15A-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH, Cur (kPa) ▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
OVERBURDEN		0							89
		1							88
		2							87
2.29m [87.00m]									
Firm, grey **CLAYEY SILT**		3							86
		4					189.0 △		85
4.57m [84.72m]									
Dynamic Cone Penetration Test Comenced at 4.57 m depth		5							84
		6							83
		7							82
7.62m [81.67m]									
End of Borehole Practical refusal to DCPT at 7.62 m depth		8							81
		9							80
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376652.26 **NORTHING:** 5020184.99 **ELEVATION:** 88.88

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 30, 2024

FILE NO. : PG7301

HOLE NO. : BH16-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH, Cur (kPa) / PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							88
TOPSOIL and organics 0.20m [88.68m]			AU 1						
Loose, brown **SILTY SAND**, with clay 0.69m [88.19m]		1	SS 2	75	13-20-18-22 38	16.81			87
Dense, brown **SANDY SILT**, trace clay - Grey by 1.52 m depth - Trace clay by 2.29 m depth		2	SS 3	67	12-22-20-22 42	17.85		2.0 m ▼ 2024-10-09	
		3	SS 4	79	13-15-12-10 27	22.95			86
			SS 5	83	5-9-7-7 16	23.47			
4.11m [84.77m]		4	SS 6	75	3-15-15-18 30	26.05 10.75			85
GLACIAL TILL: Compact, grey silty sand, with gravel, occasional cobbles, boulders		5	SS 7	46	5-9-7-18 16	11.48			84
6.10m [82.78m]		6	SS 8	83	11-14-17-23 31	10.13			83
Dynamic Cone Penetration Test Comenced at 6.10 m depth 6.76m [82.12m]									
End of Borehole Practical refusal to DCPT at 6.76 m depth (GWL at 2.05 m depth - October 9, 2024)		7							82
		8							81
		9							80
		10							79

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376837.58 **NORTHING:** 5020217.72 **ELEVATION:** 89.28

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 30, 2024

FILE NO. : PG7301

HOLE NO. : BH17-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH, Cur (kPa) ▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							89
TOPSOIL and organics 0.10m [89.18m]			AU 1						
Loose, brown **SANDY SILT**, trace clay 0.69m [88.59m]									
GLACIAL TILL: Dense brown silty sand with gravel, cobbles, boulders, trace clay		1	SS 2	87	10-19-20-29 39	9.28			88
- Grey by 1.5 m depth		2	SS 3	58	21-23-20-12 43	9.29		2.1 m 2024-10-09	87
			SS 4	67	9-21-12-14 33	7.67			
- Very dense below 3.1m depth		3	SS 5	100	23-50-/-/ 50/0.13	7.18			86
4.14m [85.14m]		4	SS 6	100	19-50-/-/ 50/0.08	7.89			85
End of Borehole									
Practical refusal to augering at 4.14m depth		5							84
(GWL at 2.07 m depth - October 9, 2024)		6							83
		7							82
		8							81
		9							80
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376938.22 **NORTHING:** 5020281.76 **ELEVATION:** 88.30

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 30, 2024

FILE NO. : PG7301

HOLE NO. : BH18-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N, Nc OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH, Cur (kPa) ▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL and organics 0.13m [88.17m]		0	AU 1						88
FILL: Firm, brown silty clay 0.69m [87.61m]									
TOPSOIL 0.86m [87.44m]		1	SS 2	75	4-4-4-3 8	18.61 29.23		1.3 m ▼ 2024-10-09	87
FILL: Firm clayey silt 1.45m [86.85m]									
TOPSOIL and organics 1.52m [86.78m]									
GLACIAL TILL: Compact, brown silty sand with gravel, occasional cobbles		2	SS 3	8	2-2-2-2 4	17.43			86
			SS 4	46	8-8-15-16 23	14.27			
- Grey by 3.1 m depth		3	SS 5	46	5-7-10-8 17	11.77			85
		4	SS 6	87	35-15-18-18 33	13.4			84
4.72m [83.58m]			SS 7	100	50-/-/-/ 50/0.15	10.33			
End of Borehole		5							83
Practical refusal to augering at 4.72 m depth									
(GWL at 1.31 m depth - October 9, 2024)		6							82
		7							81
		8							80
		9							79
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376684.09 **NORTHING:** 5020118.93 **ELEVATION:** 90.08

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 30, 2024

FILE NO. : PG7301

HOLE NO. : BH19-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH, Cur (kPa) ▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							90
OVERBURDEN		1							89
		2							88
		3							87
3.89m [86.19m]		4							86
End of Borehole Practical refusal to augering at 3.89 m depth		5							85
		6							84
		7							83
		8							82
		9							81
		10							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376740.96 **NORTHING:** 5020242.35 **ELEVATION:** 88.78

PROJECT: Geotechnical Investigation

BORINGS BY: CME-55 Low Clearance Drill

REMARKS:

DATE: September 30, 2024

FILE NO. : PG7301

HOLE NO. : BH20-24

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N, Nc OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / △ REMOULDED SHEAR STRENGTH, Cur (kPa) ▲ PEAK SHEAR STRENGTH, Cu (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
OVERBURDEN		0							88
		1							87
		2							86
		3							85
		4							84
5.44m [83.34m]		5							83
End of Borehole		6							82
Practical refusal to augering at 5.44m depth		7							81
		8							80
		9							79
		10							

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SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4795 Bank St. & 3301 Blais Rd., Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376563.628 **NORTHING:** 5020241.291 **ELEVATION:** 88.83 m

PROJECT: Proposed Development

BORINGS BY: Excavator

REMARKS:

DATE: November 10, 2023

FILE NO. PG6896

HOLE NO. TP 1-23

SAMPLE DESCRIPTION	STRATA PLOT	Sample No.	SAMPLE % RECOVERY	N VALUE or RQD	WATER CONTENT %	DEPTH (m)	Remoulded Shear Strength (kPa) 0 50 100	Peak Shear Strength (kPa) 0 50 100	Pen. Resist. Blows/0.3m (50 mm Dia. Cone) 0 50 100	Piezometer Construction
Ground Surface EL 88.83 m										
TOPSOIL		G1			31.2	0				
0.45 m EL 88.38 m		G2			17.5					
Compact, brown SANDY SILT						1				
1.2 m EL 87.63 m		G3 G4			21.2 20.3					
Compact to dense, grey SANDY SILT						2				
- trace gravel by 2.0m depth		G5			20					
- trace clay by 3.0m depth										
- occasional cobbles by 3.6m depth										
- some clay from 4.0 to 4.3m depth						3				
		G6			23.8					
		G7			22.5	4				
		G8			27.1					
5.1 m EL 83.73 m		G9			25.6	5				
End of Test Pit										
(Groundwater infiltration at 3.5m depth)						6				

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SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4795 Bank St. & 3301 Blais Rd., Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376495.134 **NORTHING:** 5020294.256 **ELEVATION:** 89.05 m

PROJECT: Proposed Development

BORINGS BY: Excavator

REMARKS:

DATE: November 10, 2023

FILE NO. PG6896

HOLE NO. TP 2-23

SAMPLE DESCRIPTION	STRATA PLOT	Sample No.	SAMPLE % RECOVERY	N VALUE or RQD	WATER CONTENT %	DEPTH (m)	Remoulded Shear Strength (kPa) 0 50 100	Peak Shear Strength (kPa) 0 50 100	Pen. Resist. Blows/0.3m (50 mm Dia. Cone) 0 50 100	Piezometer Construction
Ground Surface EL 89.05 m										
TOPSOIL 0.15 m EL 88.9 m		G1			30.4	0				
Loose, brown SILTY SAND, occasional cobbles 0.55 m EL 88.5 m		G2			16.5					
		G3			17.3					
Compact, brown SANDY SILT		G4			24.4	1				
- trace clay by 1.6m depth										
- thin interbedded layers of silty clay at 1.8m depth		G5			30					
2.1 m EL 86.95 m						2				
Loose, grey SANDY SILT with thin interbedded layers of silty clay 2.5 m EL 86.55 m		G6			27.7					
		G7			34					
Firm, grey SILTY CLAY to CLAYEY SILT with interbedded sandy silt layers		G8			33	3		35 / 22		
3.45 m EL 85.6 m										
GLACIAL TILL: Grey silty sand with gravel		G9			14.1					
4 m EL 85.05 m		G10			11.2	4				
End of Test Pit										
(Groundwater infiltration at 1.7m depth)						5				
						6				

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SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4795 Bank St. & 3301 Blais Rd., Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376509.066 **NORTHING:** 5020384.595 **ELEVATION:** 89.07 m

PROJECT: Proposed Development

BORINGS BY: Excavator

REMARKS:

DATE: November 10, 2023

FILE NO. PG6896

HOLE NO. TP3-23

SAMPLE DESCRIPTION	STRATA PLOT	Sample No.	SAMPLE % RECOVERY	N VALUE or RQD	WATER CONTENT %	DEPTH (m)	Remoulded Shear Strength (kPa) 0 50 100	Peak Shear Strength (kPa) 0 50 100	Pen. Resist. Blows/0.3m (50 mm Dia. Cone) 0 50 100	Piezometer Construction
Ground Surface EL 89.07 m										
TOPSOIL 0.3 m EL 88.77 m		G1			30.7	0				
Compact, brown SANDY SILT with thin interbedded layers of silty sand		G2			13.9					
- trace clay by 0.7m depth		G3			24.1	1				
		G4			22.9					
1.6 m EL 87.47 m		G5			30.6	2				▼
Stiff, grey CLAYEY SILT with thin interbedded layers of silty clay		G6			28.9					
3.2 m EL 85.87 m		G7			12.6	3				
GLACIAL TILL: Dense, grey clayey silt to sandy silt with gravel, occasional boulders 3.3 m EL 85.77 m										
End of Test Pit						4				
Practical refusal to excavation on large boulders at 3.30m depth.										
(Groundwater infiltration at 1.6m depth)						5				
						6				

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376522.67 **NORTHING:** 5020400.87 **ELEVATION:** 89.47

PROJECT: Geotechnical Investigation

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada) Geoid: HT2-2010 **DATE:** March 2, 2026

FILE NO. : PG7301

HOLE NO. : BH 1-26

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL: with organics									
0.25m [89.22m]									
Compact, brown **SILTY SAND** to **SANDY SILT**, trace clay		1	AU 1			22			89
			SS 2	42	4-2-3-4 5	27			
- Silt content increasing by 1.52m depth		2	SS 3	75	5-6-5-5 11	23			88
- Grey by 2.21m depth			SS 4	50	2-3-4-4 7	29			87
		3	SS 5	50	1-1-2-2 3	31			86
						28			
4.11m [85.36m]		4	SS 6	50	1-2-10-12 12	16			85
GLACIAL TILL: Very dense, grey sandy silt with gravel, occasional cobbles and boulders			SS 7	77	16-15-50-/ 65/0.03	15			
4.90m [84.57m]		5							84
BEDROCK: Poor to fair quality limestone bedrock			RC 1	100	RQD 37				
		6							83
			RC 2	100	RQD 34				
- Excellent quality bedrock by 7.26m depth		7							82
		8	RC 3	100	RQD 93				81
8.76m [80.71m]									
End of Borehole		9							80
		10							79
		11						7.19m / 8.71m	

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376514.79 **NORTHING:** 5020324.14 **ELEVATION:** 88.86

PROJECT: Geotechnical Investigation

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada) Geoid: HT2-2010 **DATE:** March 2, 2026

FILE NO. : PG7301

HOLE NO. : BH 2-26

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	RECOVERY (%)	N OR RQD	WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL: with organics			AU 1			24			
0.25m [88.61m]									
Stiff, brown **SILTY CLAY**, trace sand									
0.69m [88.17m]									
Loose to compact, brown **SILTY CLAY** to **CLAYEY SILT**, trace sand		1	SS 2	50	3-3-5-4 8	26			88
		2	SS 3	50	2-2-2-2 4	36			87
- Grey by 2.21m depth			SS 4	50	1-1-1-1 2	35			
- Silt content increasing by 2.90m depth		3	SS 5	67	P	44			86
		4	SS 6	50	1-2-6-6 8	30			85
4.50m [84.36m]									
GLACIAL TILL: Dense to very dense, grey silty fine sand with gravel, cobbles and boulders		5	SS 7	82	27-7-9-7 16	11			84
			RC 1	78					
		6	SS 8	58	24-17-18-14 35	11			83
			SS 9	34	9-50-/-/ 50/0.03	16			
6.71m [82.15m]									
BEDROCK: Good to excellent quality limestone bedrock		7	RC 2	100	RQD 45				82
		8	RC 3	100	RQD 78				81
		9							80
			RC 4	100	RQD 87				79
10.26m [78.59m]		10						8.59m / 10.11m	
End of Borehole		11							78

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376510.67 **NORTHING:** 5020331.96 **ELEVATION:** 89.19

PROJECT: Geotechnical Investigation

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada) Geoid: HT2-2010 **DATE:** March 3, 2026

FILE NO. : PG7301

HOLE NO. : BH 3-26

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE: TYPE AND NO.	SAMPLE: RECOVERY (%)	SAMPLE: N OR RQD	SAMPLE: WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80	REMOULDED SHEAR STRENGTH (kPa) / UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80	PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0									89
For soil profile refer to BH 2-26		1									88
		2									87
		3									86
		4									85
		5								4.58m	84
6.10m [83.09m]		6								6.10m	83
End of Borehole		7									82
		8									81
		9									80
		10									79
		11									

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376547.38 **NORTHING:** 5020340.33 **ELEVATION:** 89.18

PROJECT: Geotechnical Investigation

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada) Geoid: HT2-2010 **DATE:** March 3, 2026

FILE NO. : PG7301

HOLE NO. : BH 4-26

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL: with organics 0.23m [88.95m]			AU 1			20			89
Stiff, brown **SILTY CLAY**, trace sand 0.69m [88.49m]									
Brown **SILTY SAND** to **SANDY SILT**, trace gravel and clay 1.37m [87.81m]		1	SS 2	50	6-6-5-8 11	29			88
Brown **SILTY CLAY** to **CLAYEY SILT**, trace sand			SS 3	100	2-2-4-3 6	31			87
- No gravel below 1.52m depth		2	SS 4	58	2-2-2-3 4	29			
- Grey by 2.29m depth			SS 5	50	1-2-2-2 4	36			86
- Silt content increasing by 2.90m depth		3	SS 6	50	2-3-3-4 6	25		3.43m	85
5.26m [83.92m]		4	SS 7	42	2-2-15-10 17	25		4.95m	84
GLACIAL TILL: Loose to compact, grey silty fine sand with gravel, occasional cobbles		5	SS 8	25	2-5-5-9 10	14			83
- Running sand by 6.10m depth 6.35m [82.83m]		6	SS 9		10-50-/-/ 50/0.1	16			82
End of Borehole		7							81
		8							80
		9							79
		10							
		11							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376492.29 **NORTHING:** 5020369.66 **ELEVATION:** 89.25

PROJECT: Geotechnical Investigation

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada) Geoid: HT2-2010 **DATE:** March 3, 2026

FILE NO. : PG7301

HOLE NO. : BH 5-26

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80 / REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80 / PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL: with organics 0.25m [89.00m]									
Brown **SILTY CLAY** to **CLAYEY SILT**, trace sand			AU 1			24			
- Silt content increasing by 1.37m depth		1	SS 2	58	4-2-2-2 4	31			
						33			
- Grey by 1.98m depth		2	SS 3	67	2-3-3-2 6	30			
2.82m [86.43m]			SS 4	33	1-1-1-6 2	28			
GLACIAL TILL: Compact, grey silty fine sand to medium sand with gravel, trace clay		3	SS 5	42	3-10-9-8 19	11			
4.09m [85.16m]		4	SS 6	102	50-/-/-/ 50/0.1	14			
BEDROCK: Good to excellent quality limestone bedrock - Vertical shear form 4.09m to 4.39m depth - 80mm mud seams at 4.62m depth			RC 1	100	RQD 100			4.98m	
		5	RC 2	100	RQD 92				
		6	RC 3	100	RQD 75			6.50m	
6.50m [82.75m]									
End of Borehole		7							
		8							
		9							
		10							
		11							

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SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4795 Bank Street & 3301 Blais Road, Ottawa, Ontario.

COORD. SYS.: MTM ZONE 9 **EASTING:** 376511.84 **NORTHING:** 5020397.47 **ELEVATION:** 89.81

PROJECT: Geotechnical Investigation

ADVANCED BY: Track Mounted Drill Rig

REMARKS: Datum: NAD1983 (Canada) Geoid: HT2-2010 **DATE:** March 3, 2026

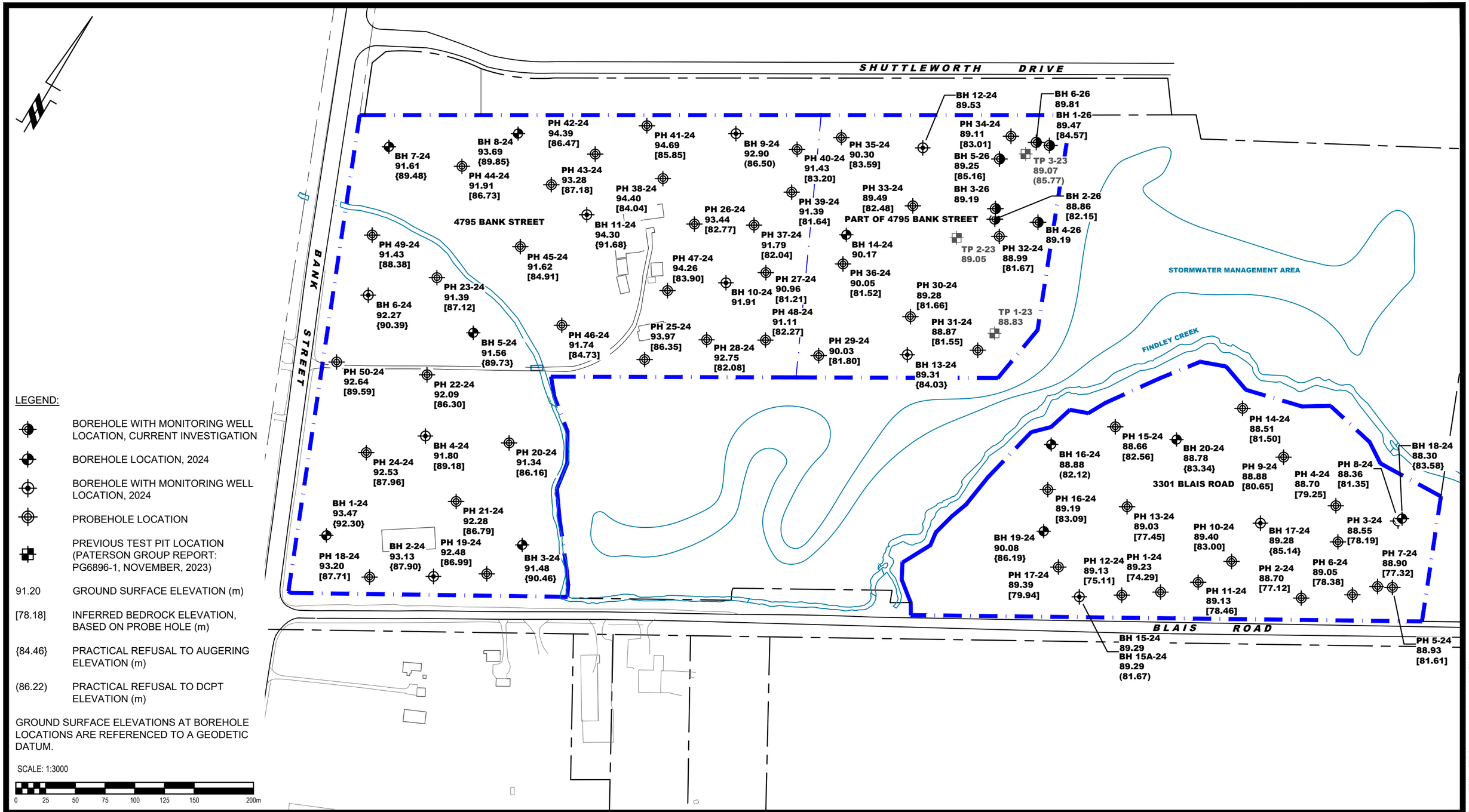
FILE NO. : PG7301

HOLE NO. : BH 6-26

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE WATER CONTENT (%)	PEN. RESIST. (BLOWS/0.3m) DCPT (50mm DIA. CONE) 20 40 60 80	REMOULDED SHEAR STRENGTH (kPa) ▲ UNDRAINED SHEAR STRENGTH (kPa) 20 40 60 80	PL (%) WATER CONTENT (%) LL (%) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											
OVERBURDEN		1									89
		2									88
		3									87
		4								3.69m	86
		5									85
5.59m [84.22m]										5.21m	
End of Borehole		6									84
		7									83
		8									82
		9									81
		10									80
		11									79

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.

P:/AutoCAD Drawings/Test Hole Data Files/PG73xx/PG7301/PG7301 (2026)/data.sqlite 2026-04-06, 17:06 Paterson_Template MR



LEGEND:

- BOREHOLE WITH MONITORING WELL LOCATION, CURRENT INVESTIGATION
- BOREHOLE LOCATION, 2024
- BOREHOLE WITH MONITORING WELL LOCATION, 2024
- PROBEHOLE LOCATION
- PREVIOUS TEST PIT LOCATION (PATERSON GROUP REPORT: PG6896-1, NOVEMBER, 2023)

91.20 GROUND SURFACE ELEVATION (m)

[78.18] INFERRED BEDROCK ELEVATION, BASED ON PROBE HOLE (m)

{84.46} PRACTICAL REFUSAL TO AUGERING ELEVATION (m)

(86.22) PRACTICAL REFUSAL TO DCPT ELEVATION (m)

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

SCALE: 1:3000

0 25 50 75 100 125 150 200m

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

NO.	REVISIONS	DD/MM/YYYY	INITIAL
1	ADDED 2026 BOREHOLE LOCATION BH 1-26 TO BH 6-26	27/05/2026	KP

CAIVAN COMMUNITIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
4795 BANK STREET & 3301 BLAIS ROAD
OTTAWA, ONTARIO

Title:

TEST HOLE LOCATION PLAN

Scale: 1:3000	Date: 10/2024
Drawn by: ZS	Report No.: PG7301-1
Checked by: MA	Dwg. No.: PG7301-1
Approved by: KP	Revision No.: 1

11x17

p:\autocad drawings\geotechnical\pg73xx\pg7301\pg7301-1 test hole location plan (rev.01).dwg

APPENDIX 2

TABLE 5 - MONTHLY WATER BALANCE FOR SOIL WITH 75 mm WATER HOLDING CAPACITY AT THE OTTAWA INTERNATIONAL AIRPORT

TABLE 6 - MONTHLY WATER BALANCE FOR SOIL WITH 150 mm WATER HOLDING CAPACITY AT THE OTTAWA INTERNATIONAL AIRPORT

TABLE 7 - MONTHLY WATER BALANCE FOR SOIL WITH 250 mm WATER HOLDING CAPACITY AT THE OTTAWA INTERNATIONAL AIRPORT

TABLE 8 - MONTHLY WATER BALANCE FOR SOIL WITH 300 mm WATER HOLDING CAPACITY AT THE OTTAWA INTERNATIONAL AIRPORT

TABLE 9 - PRE-DEVELOPMENT ANNUAL WATER BUDGET CALCULATIONS

TABLE 10 - POST-DEVELOPMENT ANNUAL WATER BUDGET CALCULATIONS

Table 5 - Monthly Water Balance for Soil With 75 mm Water Holding Capacity at the Ottawa International Airport				
Month	**Temperature (°C)**	**Total Precipitation (mm)**	**Actual Evapotranspiration (mm)**	**Water Surplus (mm)**
January	-10.6	62	0	25
February	-9.0	56	1	26
March	-2.8	65	6	103
April	5.7	73	31	110
May	13.1	76	80	14
June	18.3	85	107	4
July	20.9	88	104	3
August	19.7	85	84	1
September	14.8	82	65	3
October	8.3	76	36	14
November	1.3	77	10	38
December	-6.8	79	1	37
Annual	**6**	**904**	**525**	**378**

Table 6 - Monthly Water Balance for Soil With 150 mm Water Holding Capacity at the Ottawa International Airport				
Month	**Temperature (°C)**	**Total Precipitation (mm)**	**Actual Evapotranspiration (mm)**	**Water Surplus (mm)**
January	-10.6	62	0	21
February	-9.0	56	1	24
March	-2.8	65	6	99
April	5.7	73	31	109
May	13.1	76	80	14
June	18.3	85	116	4
July	20.9	89	127	3
August	19.7	84	98	1
September	14.8	82	68	2
October	8.3	76	36	7
November	1.3	77	10	20
December	-6.8	80	0.1	25
Annual	**6**	**904**	**574**	**329**

Table 7 - Monthly Water Balance for Soil With 250 mm Water Holding Capacity at the Ottawa International Airport				
Month	**Temperature (°C)**	**Total Precipitation (mm)**	**Actual Evapotranspiration (mm)**	**Water Surplus (mm)**
January	-10.6	62	0	18
February	-9.0	56	1	22
March	-2.8	65	6	92
April	5.7	73	31	107
May	13.1	76	80	14
June	18.3	85	116	4
July	20.9	89	135	3
August	19.7	84	111	1
September	14.8	82	72	2
October	8.3	76	37	6
November	1.3	77	10	16
December	-6.8	80	1	19
Annual	**6**	**904**	**600**	**304**

Table 8 - Monthly Water Balance for Soil With 300 mm Water Holding Capacity at the Ottawa International Airport				
Month	**Temperature (°C)**	**Total Precipitation (mm)**	**Actual Evapotranspiration (mm)**	**Water Surplus (mm)**
January	-10.6	62	0	17
February	-9.0	56	1	21
March	-2.8	65	6	91
April	5.7	73	31	105
May	13.1	76	80	14
June	18.3	85	116	4
July	20.9	89	135	3
August	19.7	84	114	1
September	14.8	82	73	2
October	8.3	76	37	6
November	1.3	77	10	16
December	-6.8	80	1	18
Annual	**6**	**904**	**605**	**298**

Table 9 - Pre-Development Annual Water Budget Calculations

Land Use Unit	Area (m^2)	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	15,310	759	0	0	0	0	1	0	0.00	759	11,620,290
Urban Lawn/ Shallow Rooted Crops (Fine Sandy Loam)	70,075	378	0.1	0.3	0.1	0.5	0.5	189	13,244,175	189	13,244,175
Pasture and Shrubs (Fine Sandy Loam)	29,799	329	0.1	0.3	0.1	0.5	0.5	164.5	4,901,936	164.5	4,901,936
Pasture and Shrubs (Clay Loam)	40,128	304	0.1	0.2	0.1	0.4	0.6	121.6	4,879,565	182.4	7,319,347
Mature Forest (Fine Sandy Loam)	16,447	298	0.1	0.3	0.2	0.6	0.4	178.8	2,940,724	119.2	1,960,482
Total	**171,759**								**25,966,399**		**39,046,230**

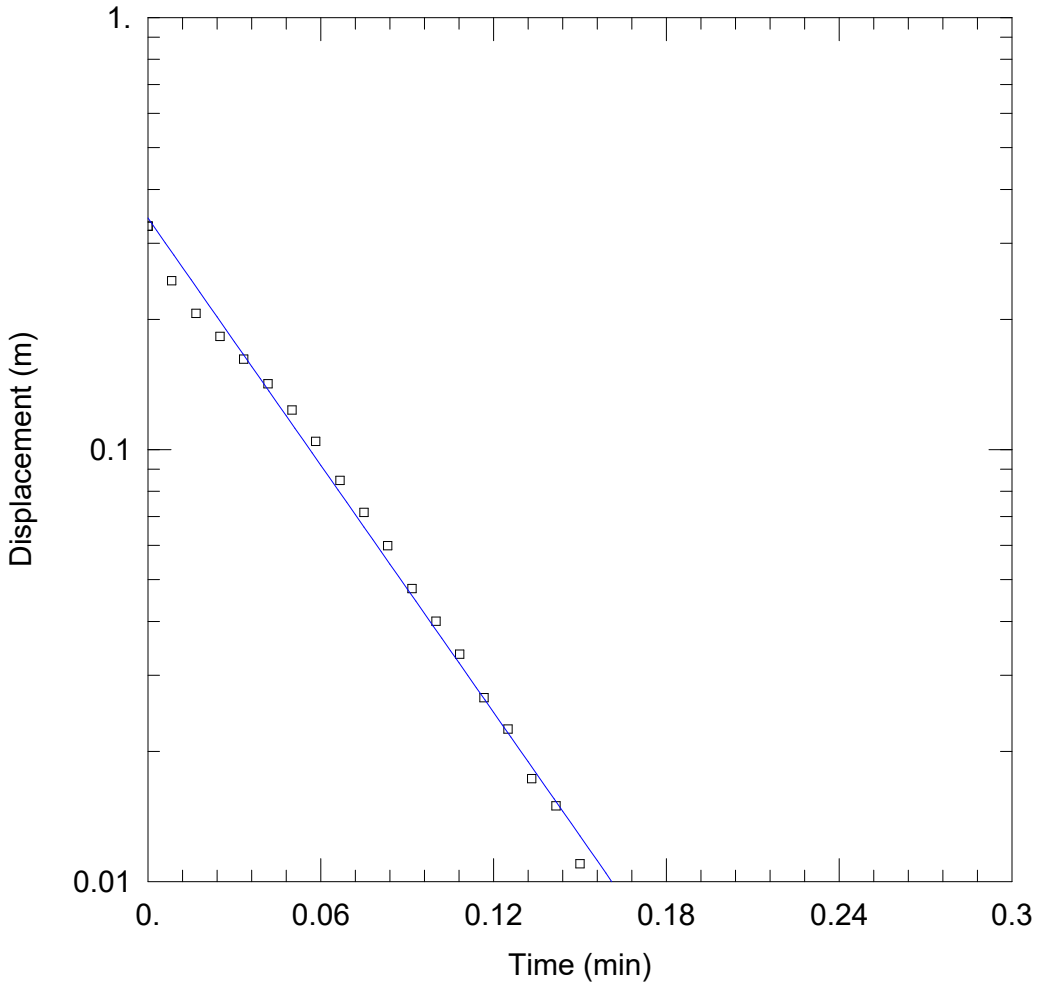
Table 10 - Post-Development Annual Water Budget Calculations

Land Use Unit	Area (m^2)	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	111,377	759	0	0	0	0	1	0	0	759.0	84,535,143
Urban Lawn/Shallow Rooted Crops (Fine Sandy Loam)	53,342	378	0.15	0.3	0.1	0.55	0.45	207.9	11,089,802	170.1	9,073,474
Stormwater Management Pond	7,040	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Totals	**171,759**								**11,089,802**		**93,608,617**
Difference (L/year)									**-14,876,597**		**54,562,387**
Percentage Variation									**-57%**		**140%**

APPENDIX 3

HYDRAULIC CONDUCTIVITY RESULTS - FALLING AND RISING HEAD TESTS

SAMPLE CALCULATIONS - DUPUIT FORCHHEIMER



WELL TEST ANALYSIS

PROJECT INFORMATION

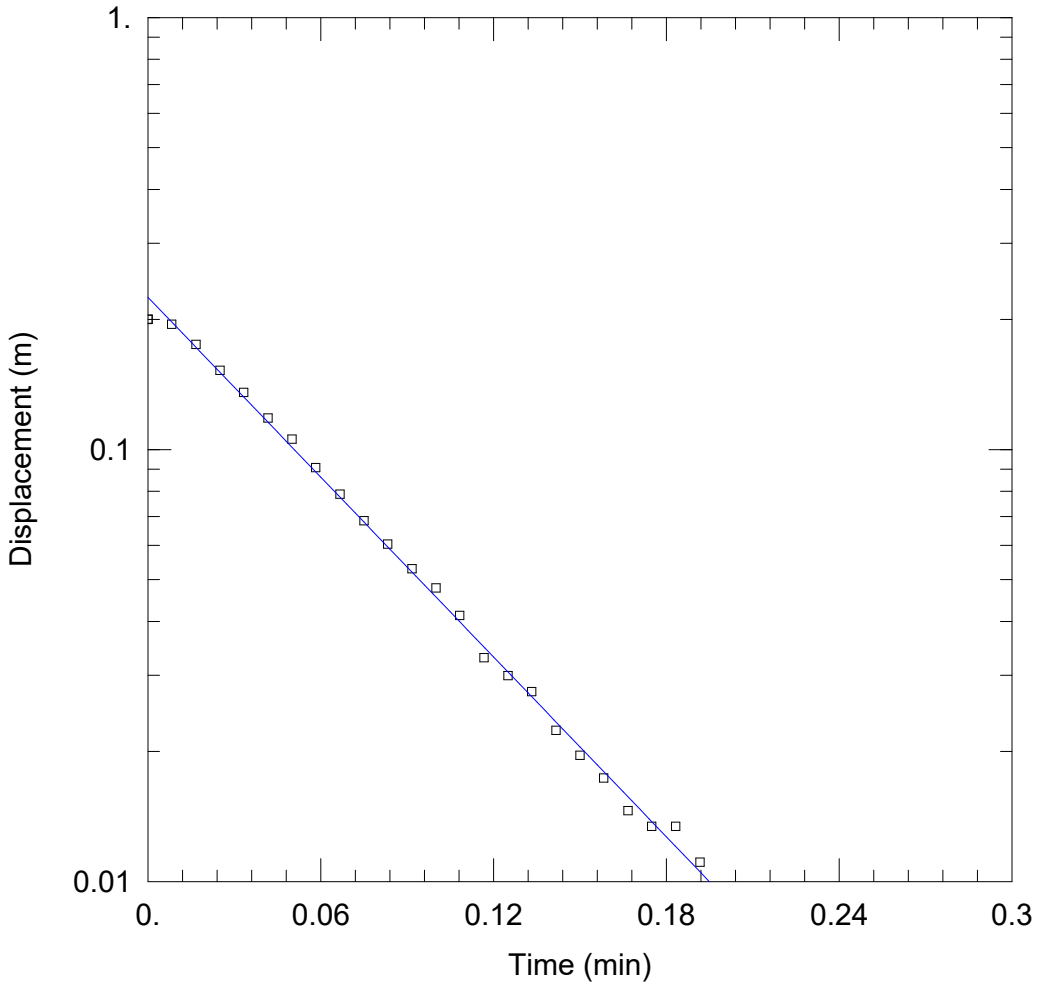
Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH1-26
Test Date: May 26, 2026

WELL DATA (BH1-26)

Initial Displacement: 0.329 m
Total Well Penetration Depth: 6.98 m
Casing Radius: 0.01588 m
Static Water Column Height: 6.98 m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined
K = 0.0001674 m/sec
Solution Method: Hvorslev
y0 = 0.3433 m



WELL TEST ANALYSIS

PROJECT INFORMATION

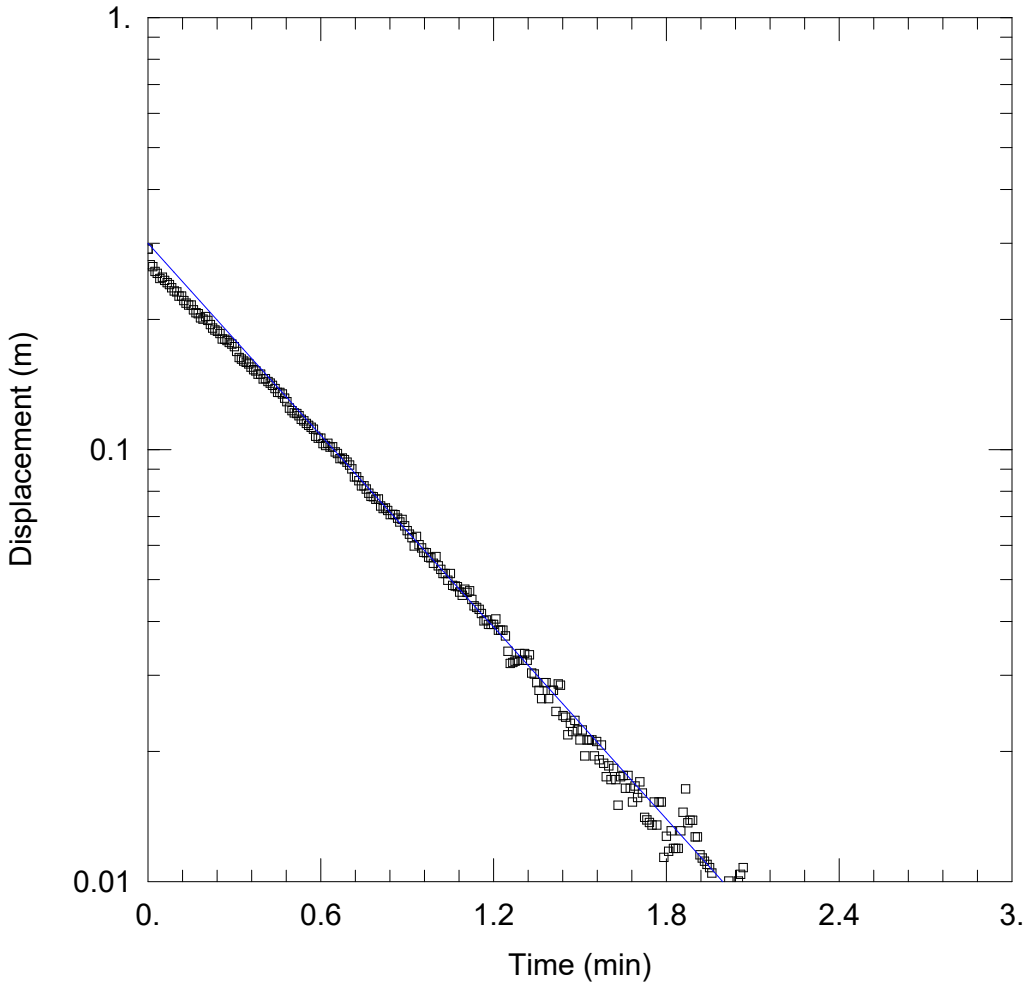
Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH1-26
Test Date: May 26, 2026

WELL DATA (BH1-26)

Initial Displacement: 0.2 m
Total Well Penetration Depth: 6.98 m
Casing Radius: 0.01588 m
Static Water Column Height: 6.98 m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined
K = 0.0001218 m/sec
Solution Method: Hvorslev
y0 = 0.225 m



WELL TEST ANALYSIS

PROJECT INFORMATION

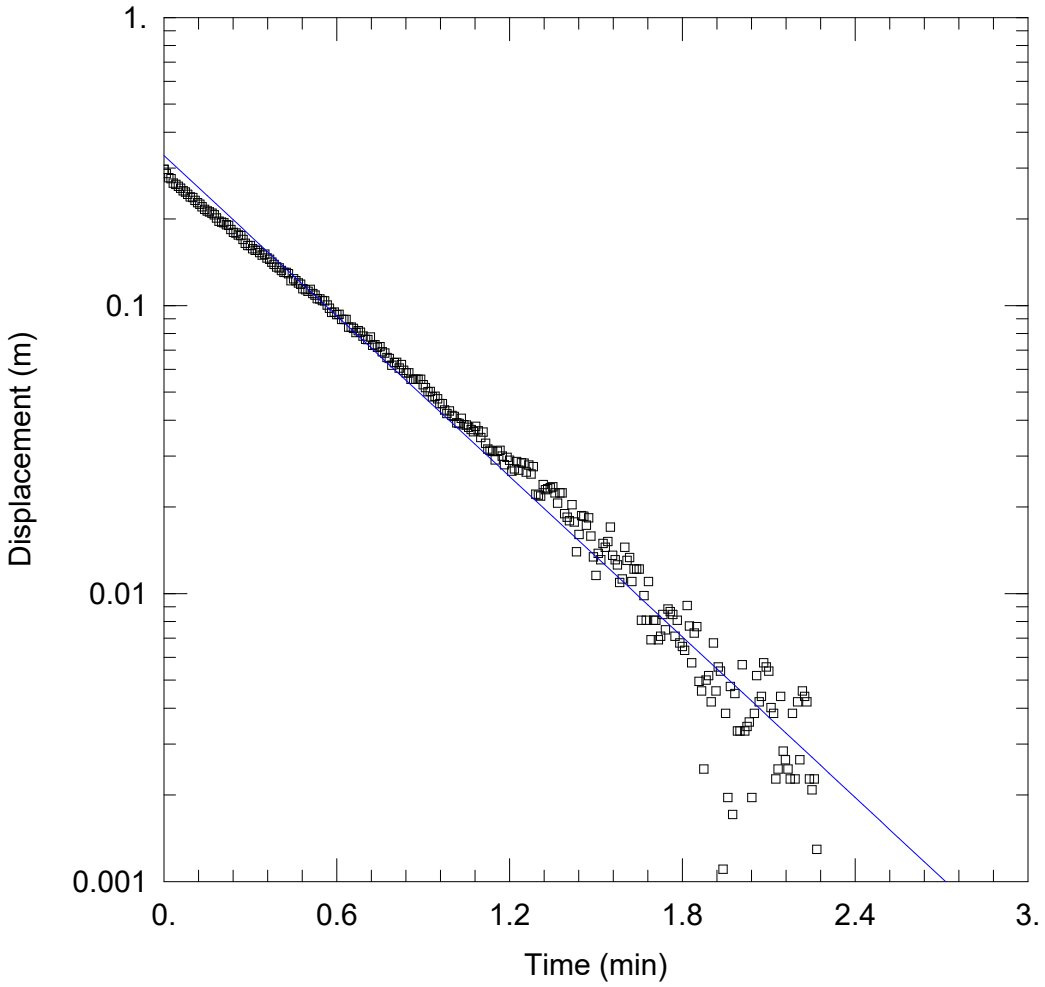
Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH2-26
Test Date: May 26, 2026

WELL DATA (BH2-26)

Initial Displacement: 0.291 m
Total Well Penetration Depth: 8.73 m
Casing Radius: 0.01588 m
Static Water Column Height: 8.73 m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined
K = 1.299E-5 m/sec
Solution Method: Hvorslev
y0 = 0.2999 m



WELL TEST ANALYSIS

Data Set: P:\...\PG7301- BH2-26 Rising Head 2 of 2.aqt
Date: 05/27/26 Time: 15:23:39

PROJECT INFORMATION

Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH2-26
Test Date: May 26, 2026

AQUIFER DATA

Saturated Thickness: 8.74 m Anisotropy Ratio (Kz/Kr): 0.1

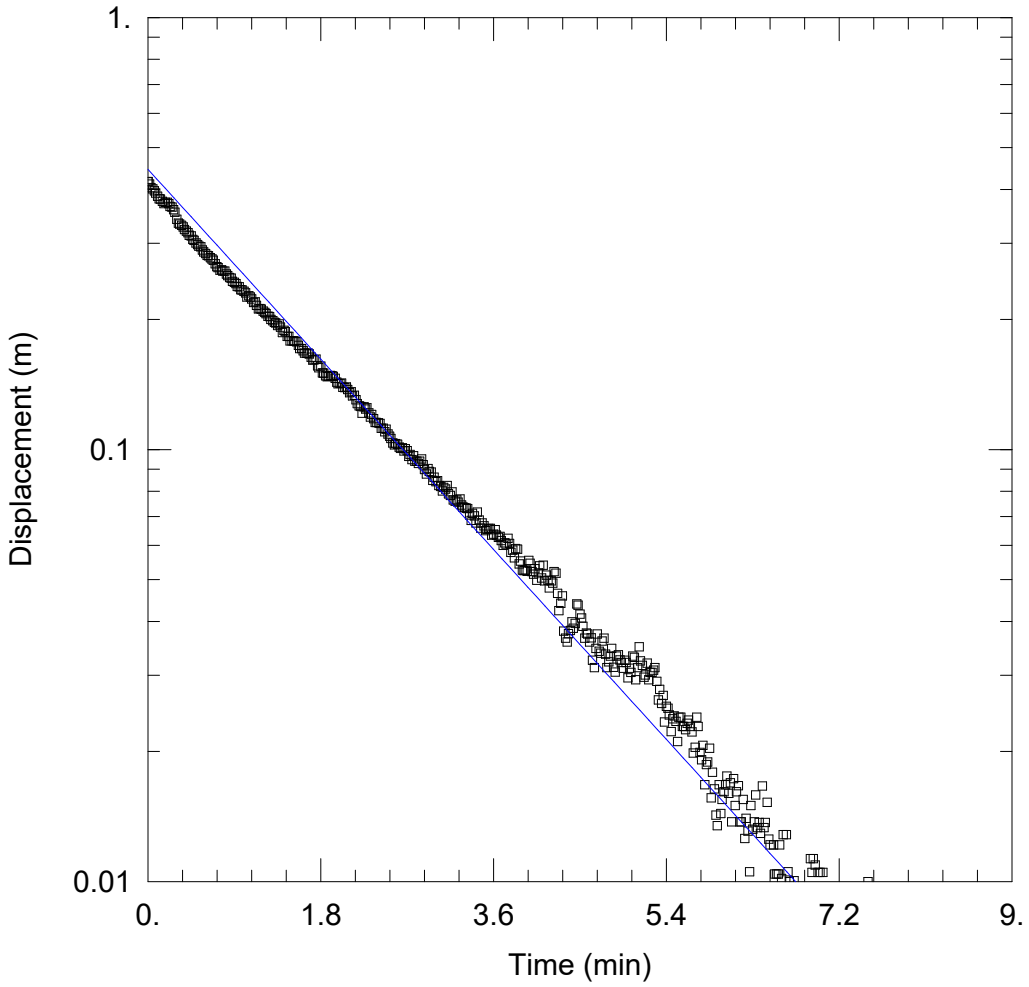
WELL DATA (BH2-26)

Initial Displacement: 0.2973 m
Total Well Penetration Depth: 8.74 m
Casing Radius: 0.01588 m
Static Water Column Height: 8.74 m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined Solution Method: Hvorslev

K = 1.63E-5 m/sec y0 = 0.3317 m



WELL TEST ANALYSIS

PROJECT INFORMATION

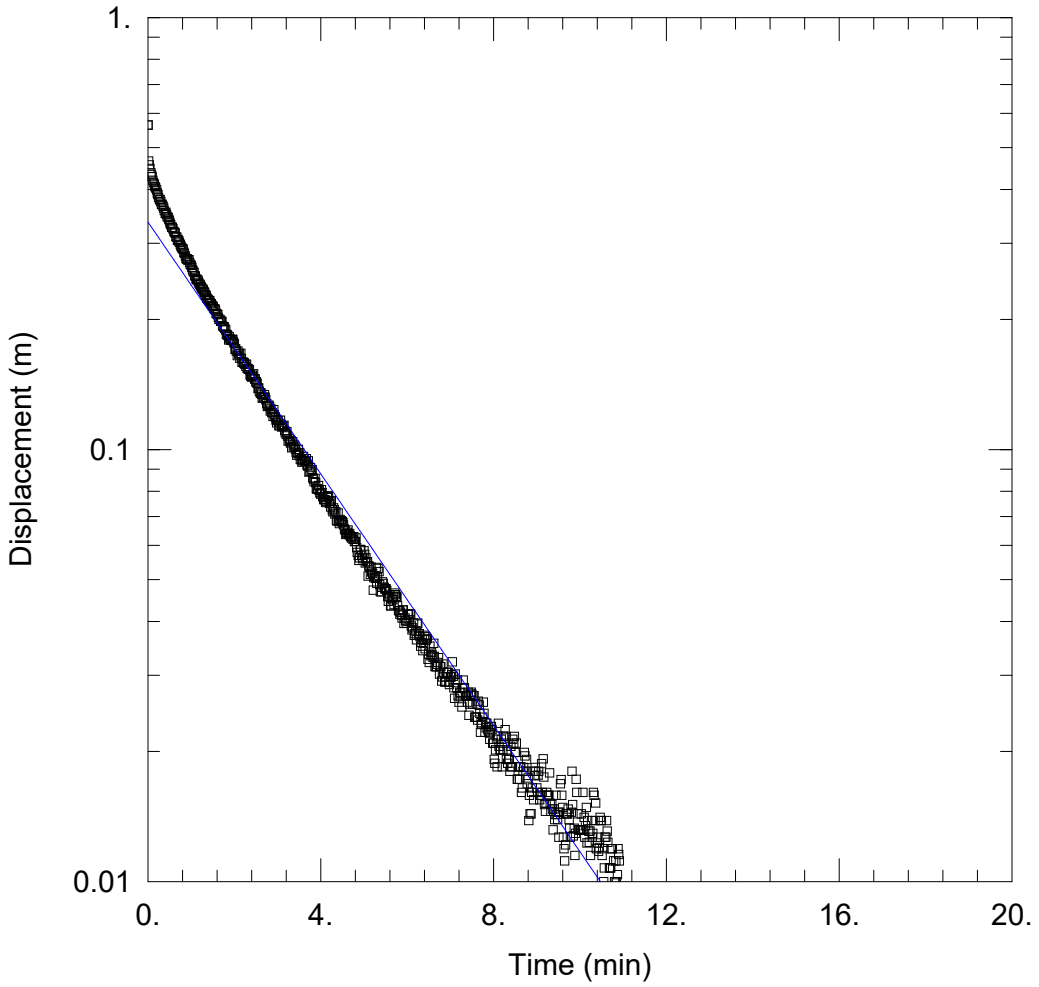
Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH3-26
Test Date: May 26, 2026

WELL DATA (BH3-26)

Initial Displacement: 0.417 m
Total Well Penetration Depth: 4.9 m
Casing Radius: 0.0254 m
Static Water Column Height: 4.9 m
Screen Length: 1.524 m
Well Radius: 0.1048 m

SOLUTION

Aquifer Model: Unconfined
K = 8.971E-6 m/sec
Solution Method: Hvorslev
y0 = 0.4452 m



WELL TEST ANALYSIS

PROJECT INFORMATION

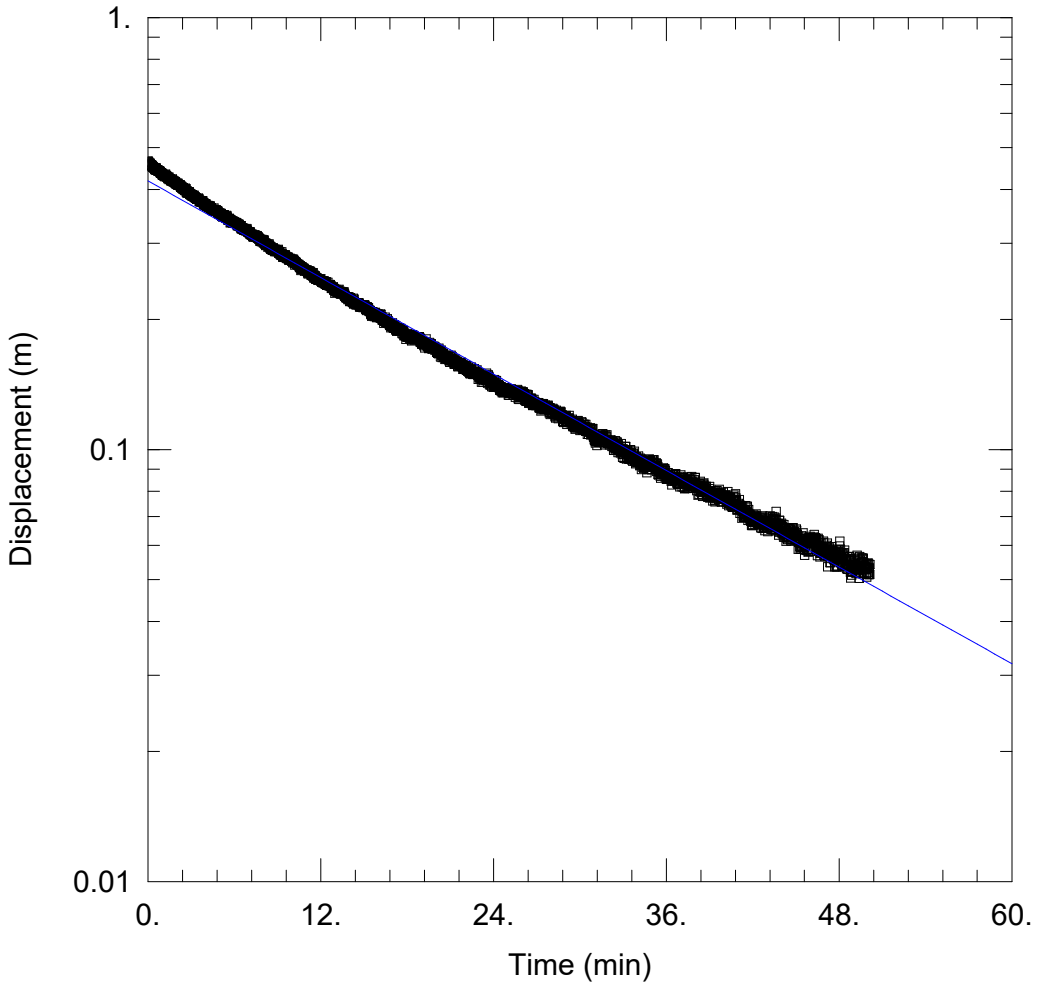
Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH3-26
Test Date: May 26, 2026

WELL DATA (BH3-26)

Initial Displacement: 0.564 m
Total Well Penetration Depth: 4.92 m
Casing Radius: 0.0254 m
Static Water Column Height: 4.92 m
Screen Length: 1.524 m
Well Radius: 0.1048 m

SOLUTION

Aquifer Model: Unconfined
K = 5.35E-6 m/sec
Solution Method: Hvorslev
y0 = 0.3359 m



WELL TEST ANALYSIS

PROJECT INFORMATION

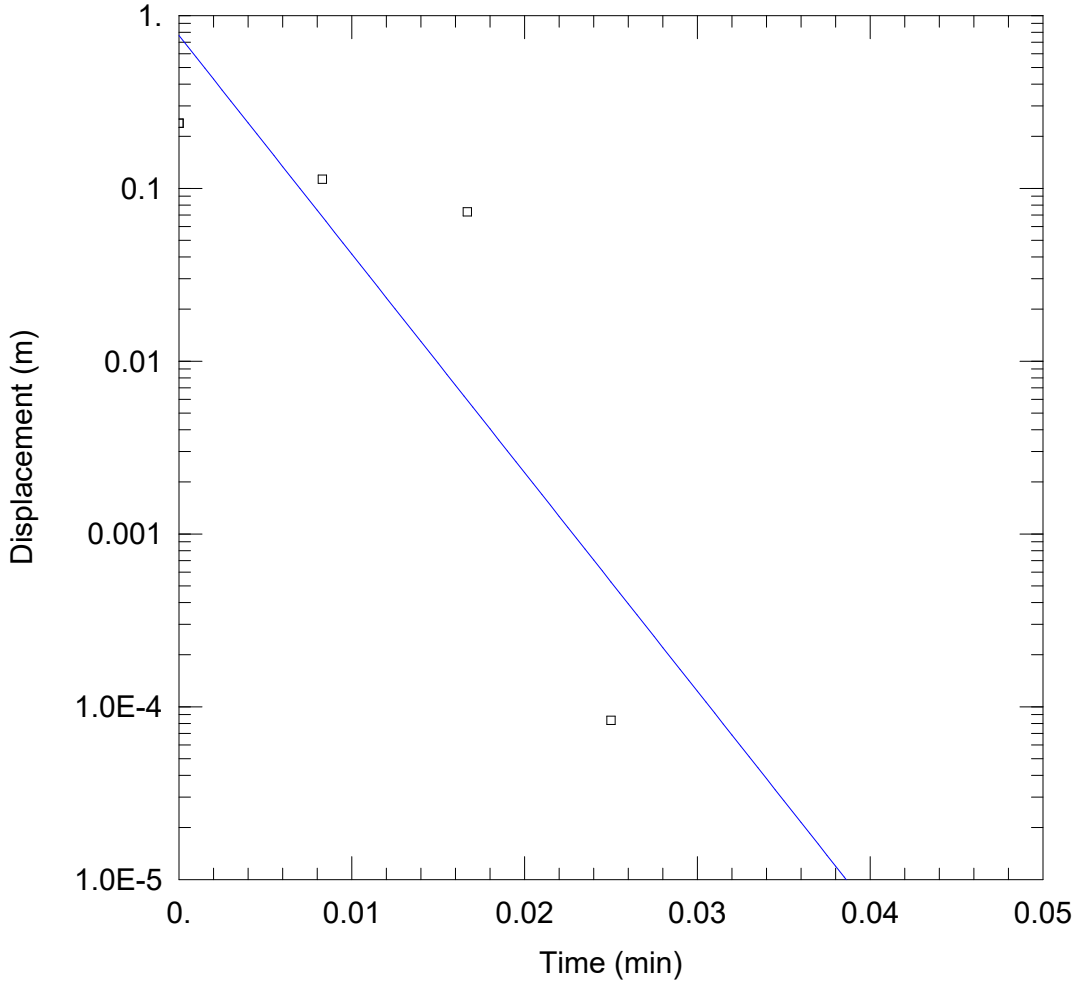
Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH4-26
Test Date: May 26, 2026

WELL DATA (BH4-26)

Initial Displacement: 0.465 m
Total Well Penetration Depth: 3.49 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.49 m
Screen Length: 1.524 m
Well Radius: 0.1048 m

SOLUTION

Aquifer Model: Unconfined
K = 6.84E-7 m/sec
Solution Method: Hvorslev
y0 = 0.4184 m



WELL TEST ANALYSIS

PROJECT INFORMATION

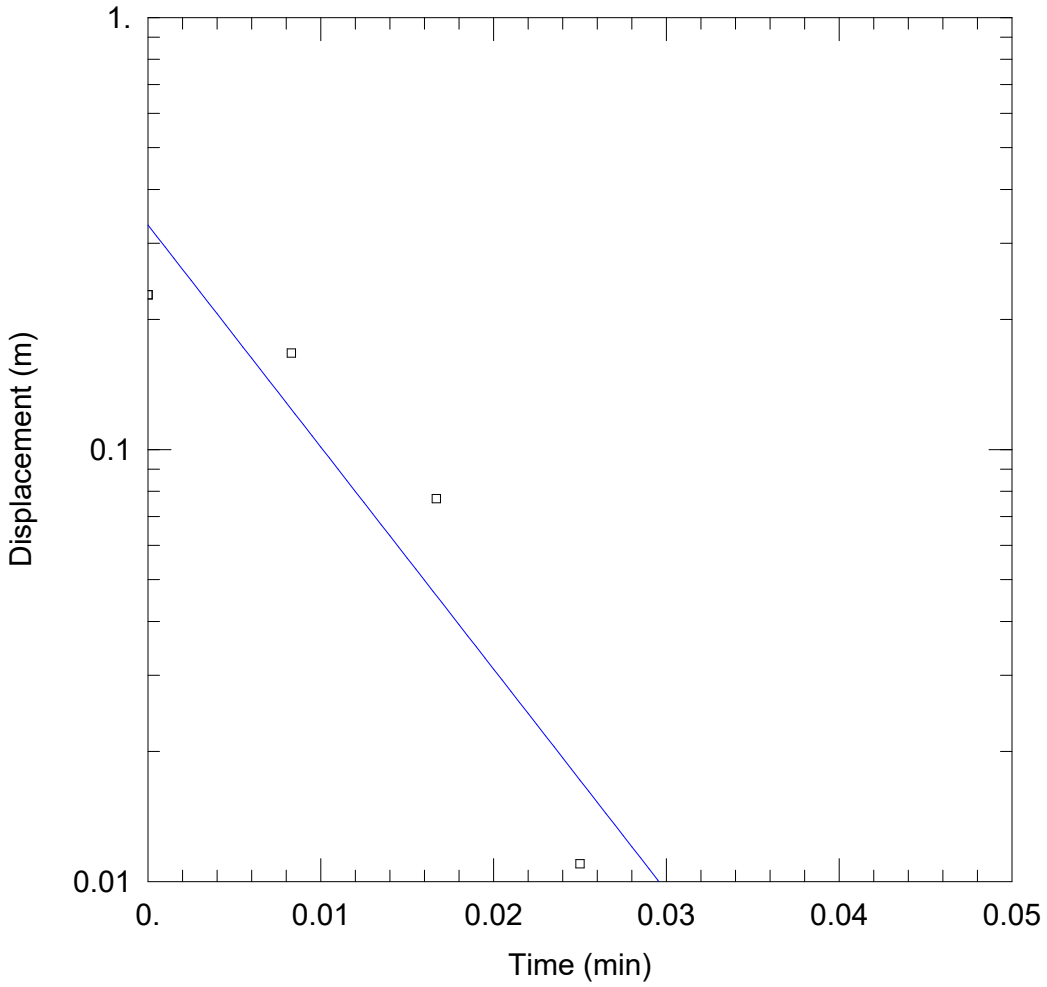
Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH5-26
Test Date: May 26, 2026

WELL DATA (BH5-26)

Initial Displacement: 0.2381 m
Total Well Penetration Depth: 5. m
Casing Radius: 0.0254 m
Static Water Column Height: 5. m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined
K = 0.005686 m/sec
Solution Method: Hvorslev
y0 = 0.7668 m



WELL TEST ANALYSIS

Data Set: P:\...\PG7301- BH5-26 Rising Head 2 of 2.aqt
Date: 05/27/26 Time: 16:18:16

PROJECT INFORMATION

Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH5-26
Test Date: May 26, 2026

AQUIFER DATA

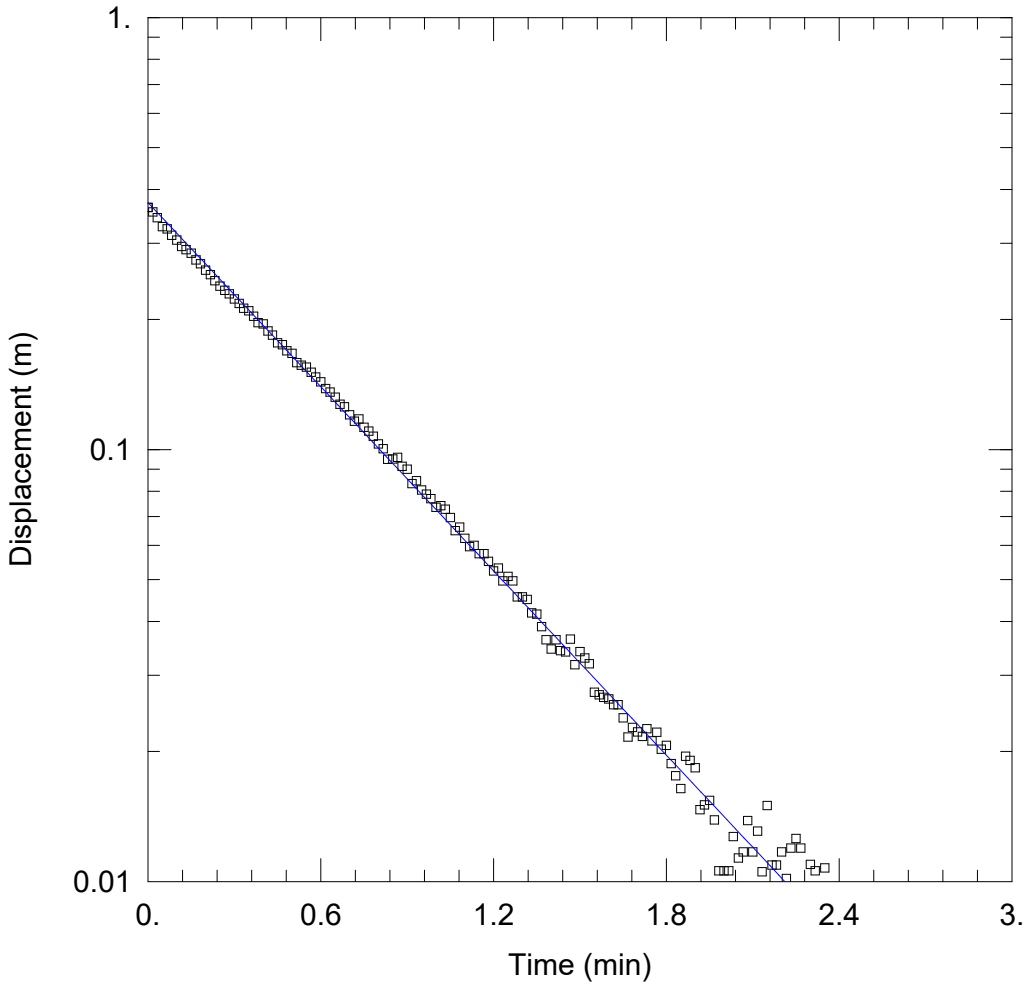
Saturated Thickness: 5. m Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (BH5-26)

Initial Displacement: 0.228 m
Total Well Penetration Depth: 5. m
Casing Radius: 0.0254 m
Static Water Column Height: 5. m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.00231 m/sec
y0 = 0.3309 m



WELL TEST ANALYSIS

PROJECT INFORMATION

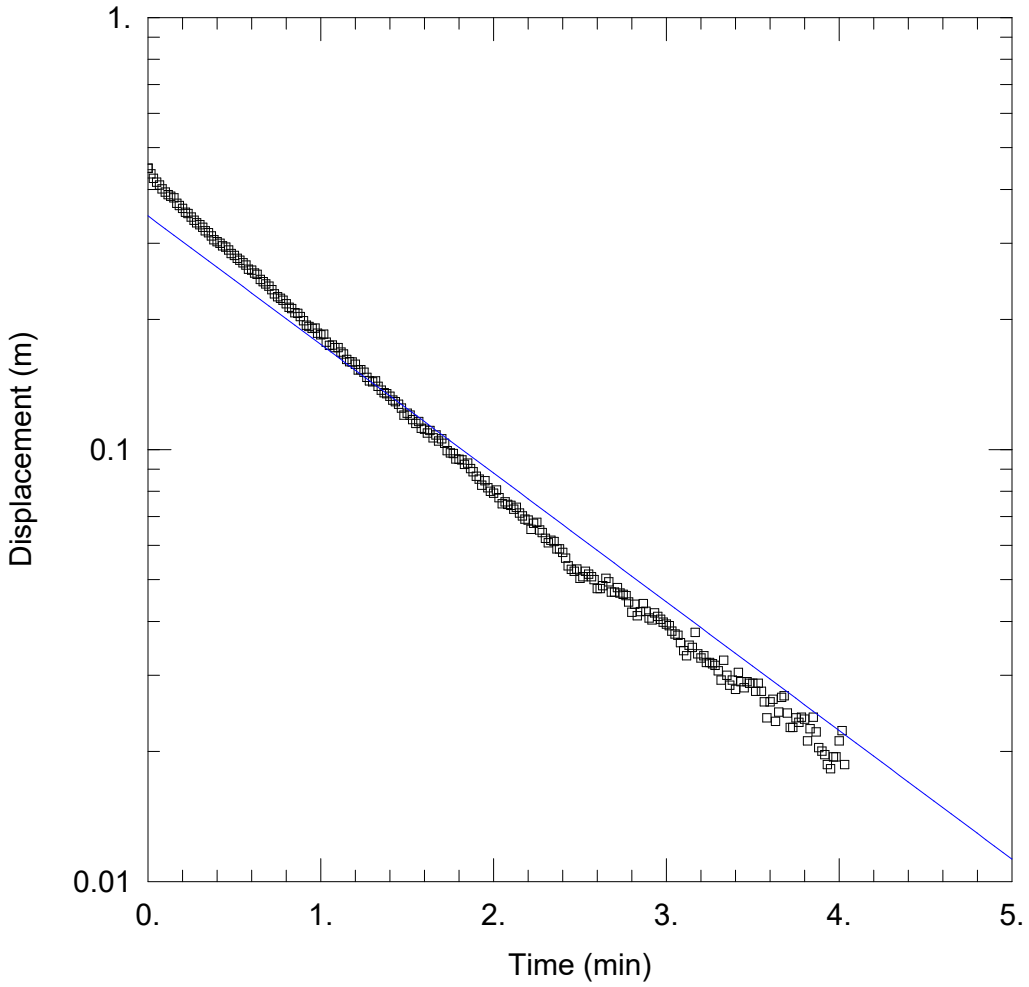
Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH6-26
Test Date: May 26, 2026

WELL DATA (BH6-26)

Initial Displacement: 0.3633 m
Total Well Penetration Depth: 3.23 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.23 m
Screen Length: 1.524 m
Well Radius: 0.1048 m

SOLUTION

Aquifer Model: Unconfined
K = 2.61E-5 m/sec
Solution Method: Hvorslev
y0 = 0.3729 m



WELL TEST ANALYSIS

PROJECT INFORMATION

Company: Paterson Group
Client: Caivan Communities
Project: PG7301
Location: 4795 Bank Street
Test Well: BH6-26
Test Date: May 26, 2026

WELL DATA (BH6-26)

Initial Displacement: 0.448 m
Total Well Penetration Depth: 3.22 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.22 m
Screen Length: 1.524 m
Well Radius: 0.1048 m

SOLUTION

Aquifer Model: Unconfined
K = 9.259E-6 m/sec
Solution Method: Hvorslev
y0 = 0.3474 m

File: PH5254

Estimated Groundwater Inflow

Caivan Communities - 4795 Bank Street - Building Excavation

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

Equivalent Radius of Excavation = A+B=Pi*r

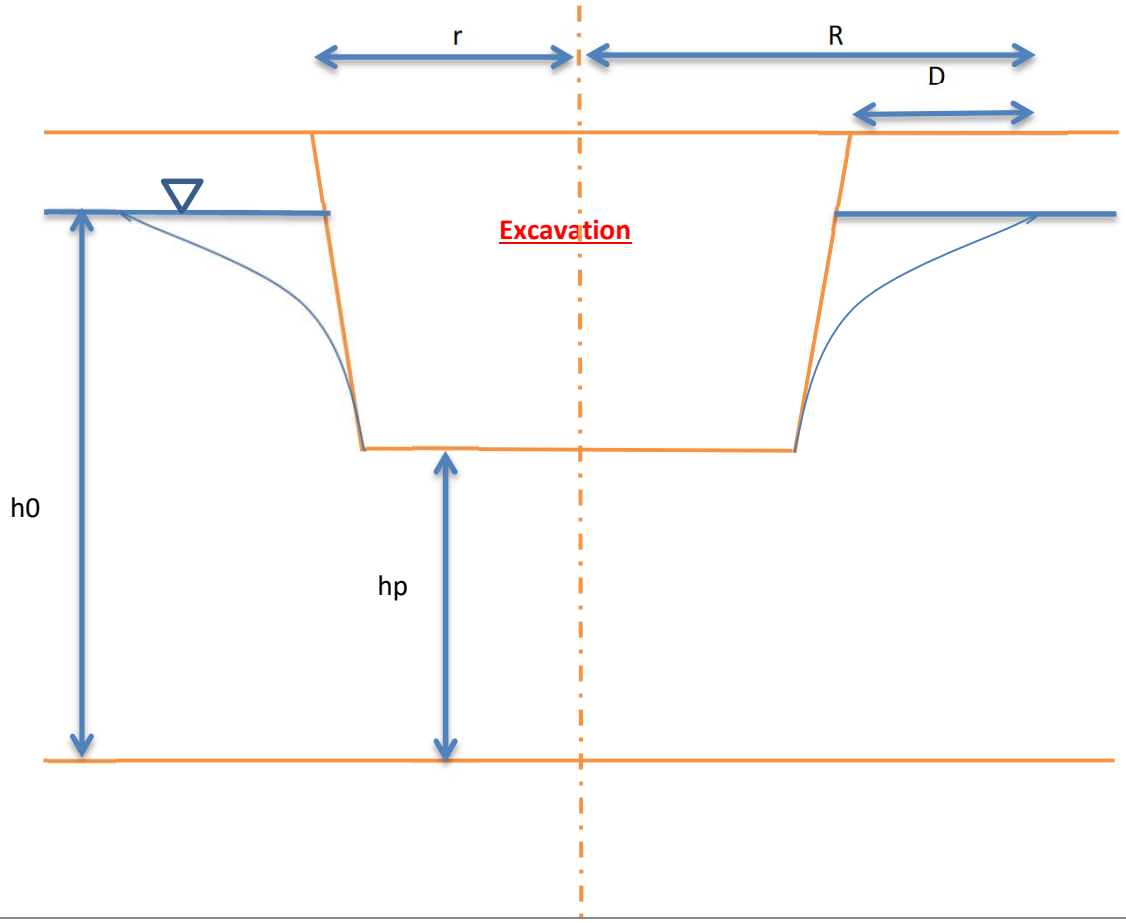
K (m/sec) =	6.02E-06
h0 (m) =	10
hp (m) =	8
r (m) =	17.35

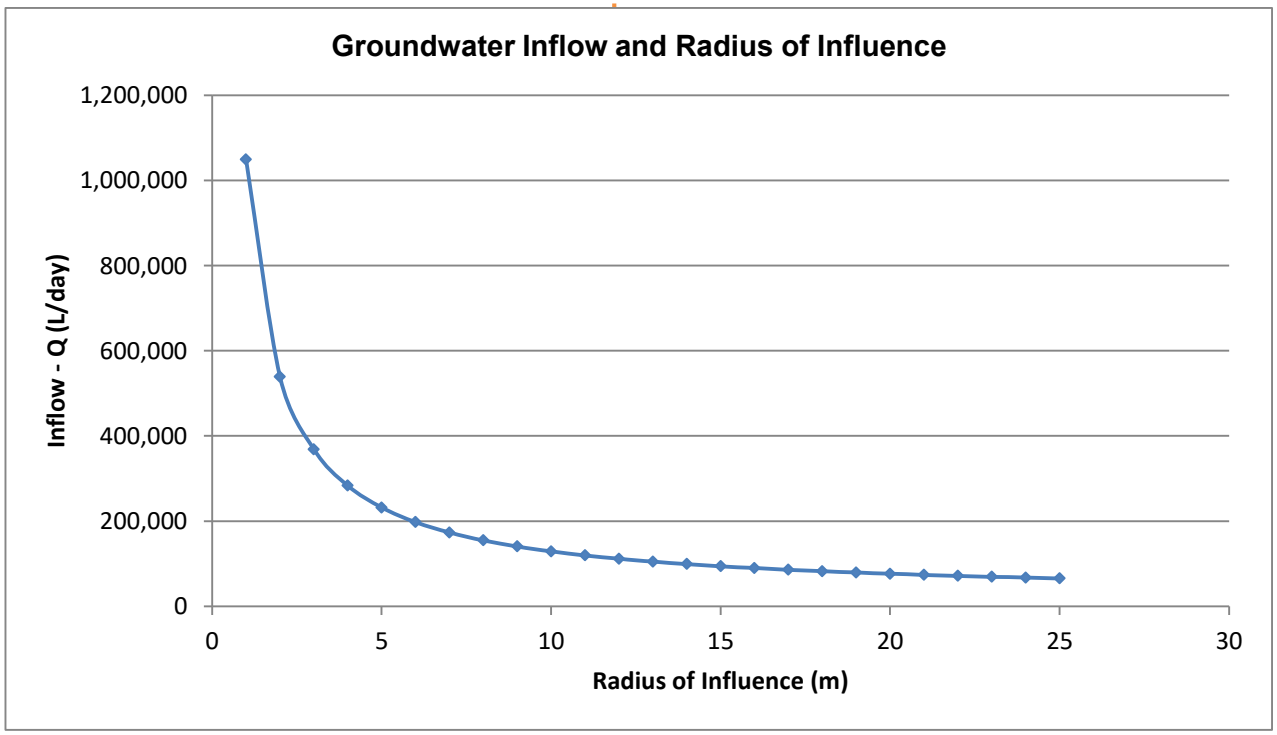
Excavation Width (A) =	26.5 m
Excavation Length (B) =	28 m
Perimeter Length =	109 m
Equivalent Radius (r) =	17.35 m

R	Distance to edge of excavation (D)	Q (m^3/s)	Q (m^3/day)	Q (L/day)
18.35	1.00	0.0121	1049.6	1,049,629
19.35	2.00	0.0062	539.1	539,123
20.35	3.00	0.0043	368.8	368,795
21.35	4.00	0.0033	283.5	283,519
22.35	5.00	0.0027	232.3	232,271
23.35	6.00	0.0023	198.0	198,040
24.35	7.00	0.0020	173.5	173,538
25.35	8.00	0.0018	155.1	155,119
26.35	9.00	0.0016	140.8	140,758
27.35	10.00	0.0015	129.2	129,238
28.35	11.00	0.0014	119.8	119,787
29.35	12.00	0.0013	111.9	111,888
30.35	13.00	0.0012	105.2	105,185
31.35	**14.00**	**0.0012**	**99.4**	**99,421**
32.35	**15.00**	**0.0011**	**94.4**	**94,410**
33.35	16.00	0.0010	90.0	90,012
34.35	17.00	0.0010	86.1	86,119
35.35	18.00	0.0010	82.6	82,646
36.35	19.00	0.0009	79.5	79,529
37.35	20.00	0.0009	76.7	76,714
38.35	21.00	0.0009	74.2	74,159
39.35	22.00	0.0008	71.8	71,828
40.35	23.00	0.0008	69.7	69,692
41.35	24.00	0.0008	67.7	67,728
42.35	25.00	0.0008	65.9	65,914
43.35	26.00	0.0007	64.2	64,234
44.35	27.00	0.0007	62.7	62,674
45.35	28.00	0.0007	61.2	61,219
46.35	29.00	0.0007	59.9	59,860
47.35	30.00	0.0007	58.6	58,588

PATERSON GROUP

File: PH5254


r
R
D
Excavation
h0
hp


Groundwater Inflow and Radius of Influence
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
Inflow - Q (L/day)
0
5
10
15
20
25
30
Radius of Influence (m)

File: PH5254

Estimated Groundwater Inflow

Caivan Communities - 4795 Bank Street - Condominum Excavation

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

K (m/sec) = 6.02E-06
h0 (m) = 6
hp (m) = 4
r (m) = 91.04

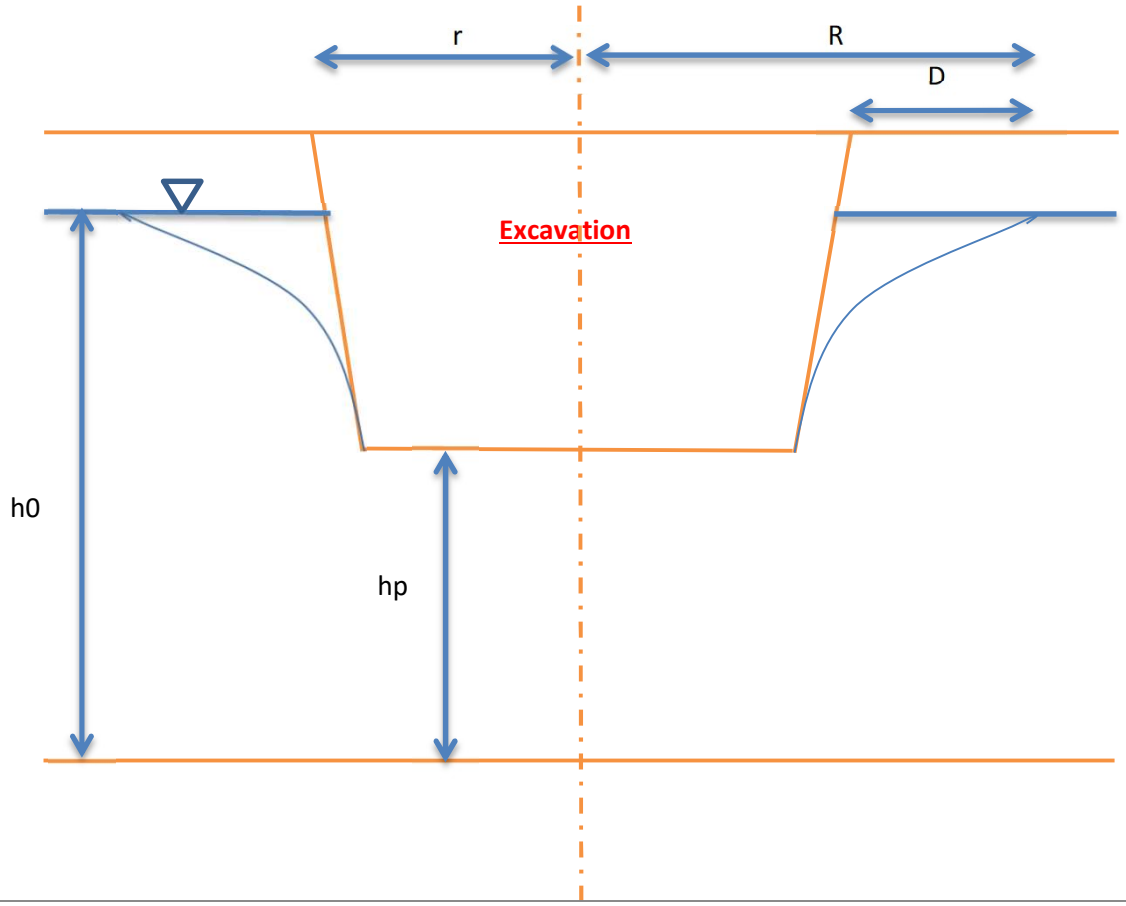
Equivalent Radius of Excavation = A+B=Pi*r

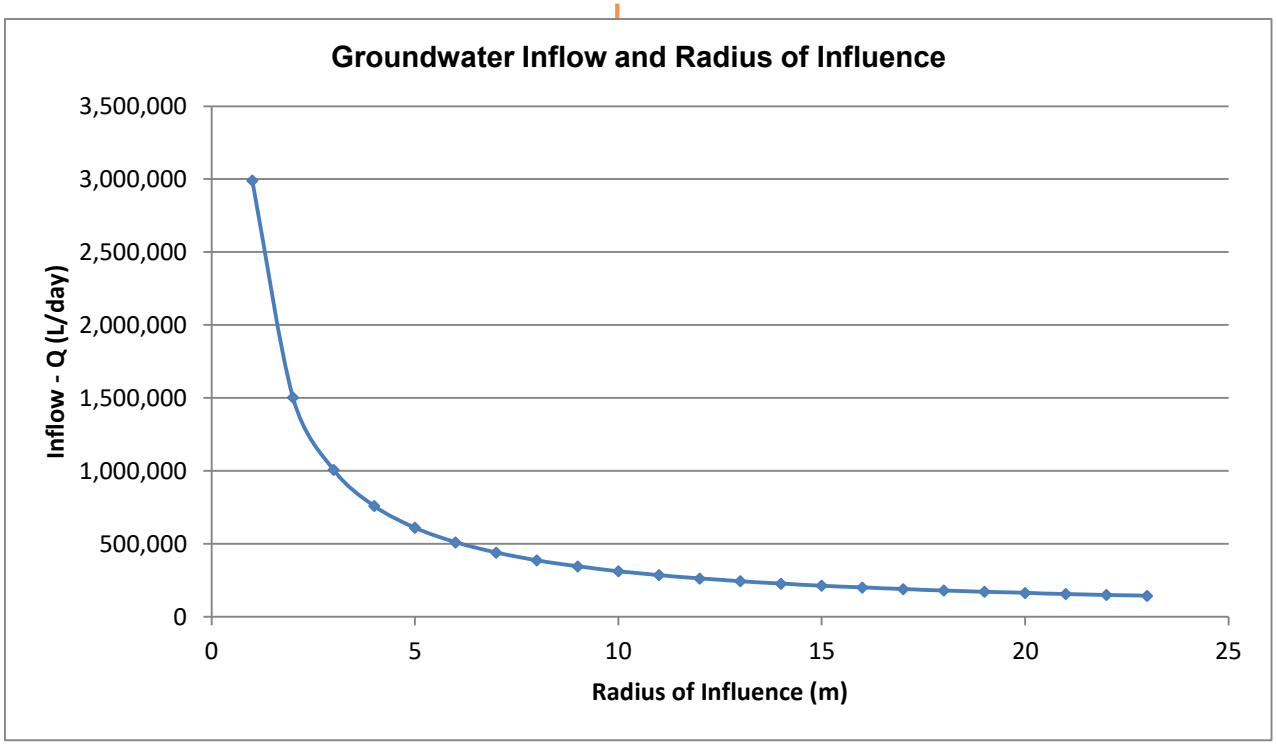
Excavation Width (X) = 141 m
Excavation Length (Y) = 145 m
Perimeter Length = 572 m
Equivalent Radius (r) = 91.04 m

R	Distance to edge of excavation (D)	Q (m^3/s)	Q (m^3/day)	Q (L/day)
92.04	1.00	0.0346	2991.4	2,991,443
93.04	2.00	0.0174	1503.8	1,503,847
94.04	3.00	0.0117	1008.0	1,007,963
95.04	4.00	0.0088	760.0	760,006
96.04	5.00	0.0071	611.2	611,221
97.04	6.00	0.0059	512.0	512,022
98.04	7.00	0.0051	441.2	441,157
99.04	8.00	0.0045	388.0	388,002
100.04	9.00	0.0040	346.7	346,654
101.04	10.00	0.0036	313.6	313,570
102.04	11.00	0.0033	286.5	286,496
103.04	12.00	0.0031	263.9	263,931
104.04	13.00	0.0028	244.8	244,833
105.04	**14.00**	**0.0026**	**228.5**	**228,460**
106.04	**15.00**	**0.0025**	**214.3**	**214,267**
107.04	16.00	0.0023	201.8	201,845
108.04	17.00	0.0022	190.9	190,882
109.04	18.00	0.0021	181.1	181,134
110.04	19.00	0.0020	172.4	172,410
111.04	20.00	0.0019	164.6	164,556
112.04	21.00	0.0018	157.4	157,448
113.04	22.00	0.0017	151.0	150,985
114.04	23.00	0.0017	145.1	145,081
115.04	24.00	0.0016	139.7	139,667
116.04	25.00	0.0016	134.7	134,685
117.04	26.00	0.0015	130.1	130,085
118.04	27.00	0.0015	125.8	125,824
119.04	28.00	0.0014	121.9	121,866
120.04	29.00	0.0014	118.2	118,179
121.04	30.00	0.0013	114.7	114,737

PATERSON GROUP

File: PH5254





PATERSON GROUP

File: PH5254

Estimated Groundwater Inflow

Caivan Communities - 4795 Bank Street - Servicing Excavation

Dupuit-Forchheimer Equation **$Q = \pi K((h0^2-hp^2)/\ln(R/r))$**

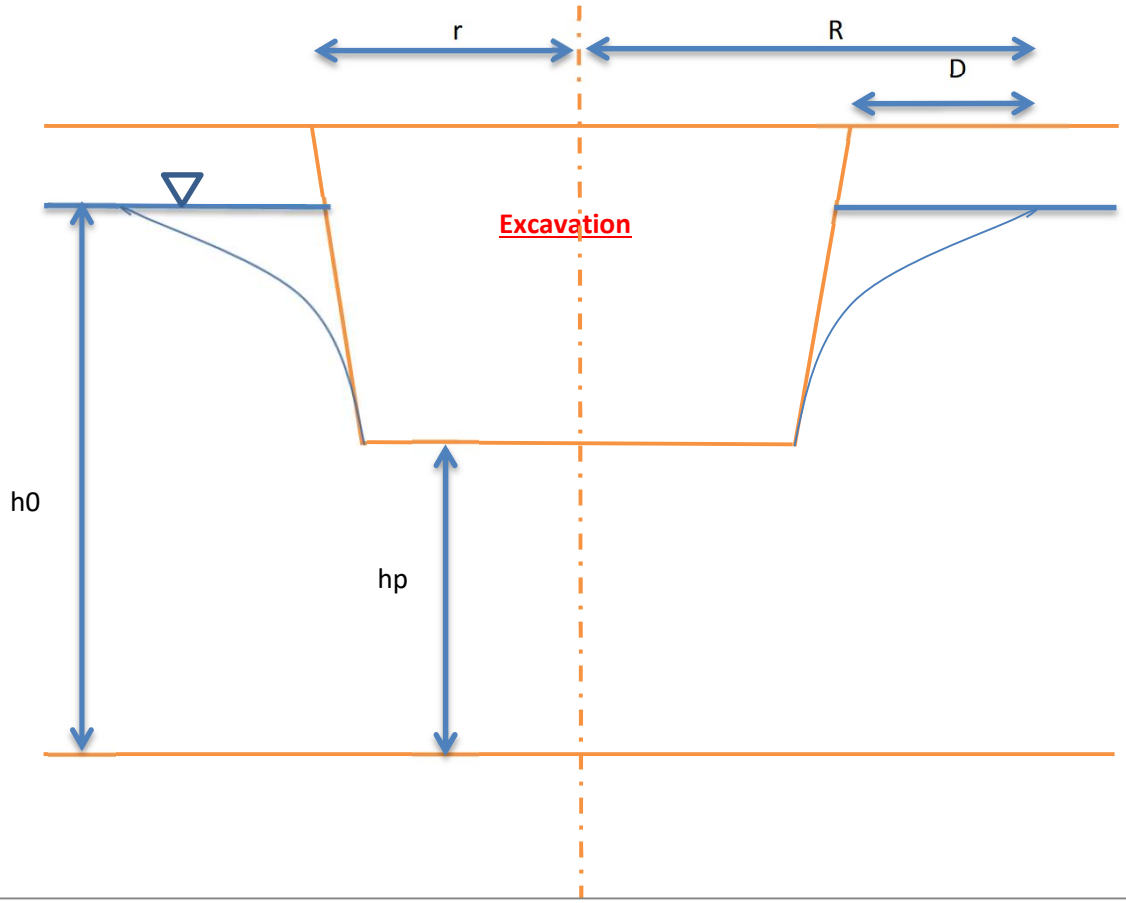
K (m/sec) = 6.02E-06
h0 (m) = 10
hp (m) = 6
r (m) = 9.55

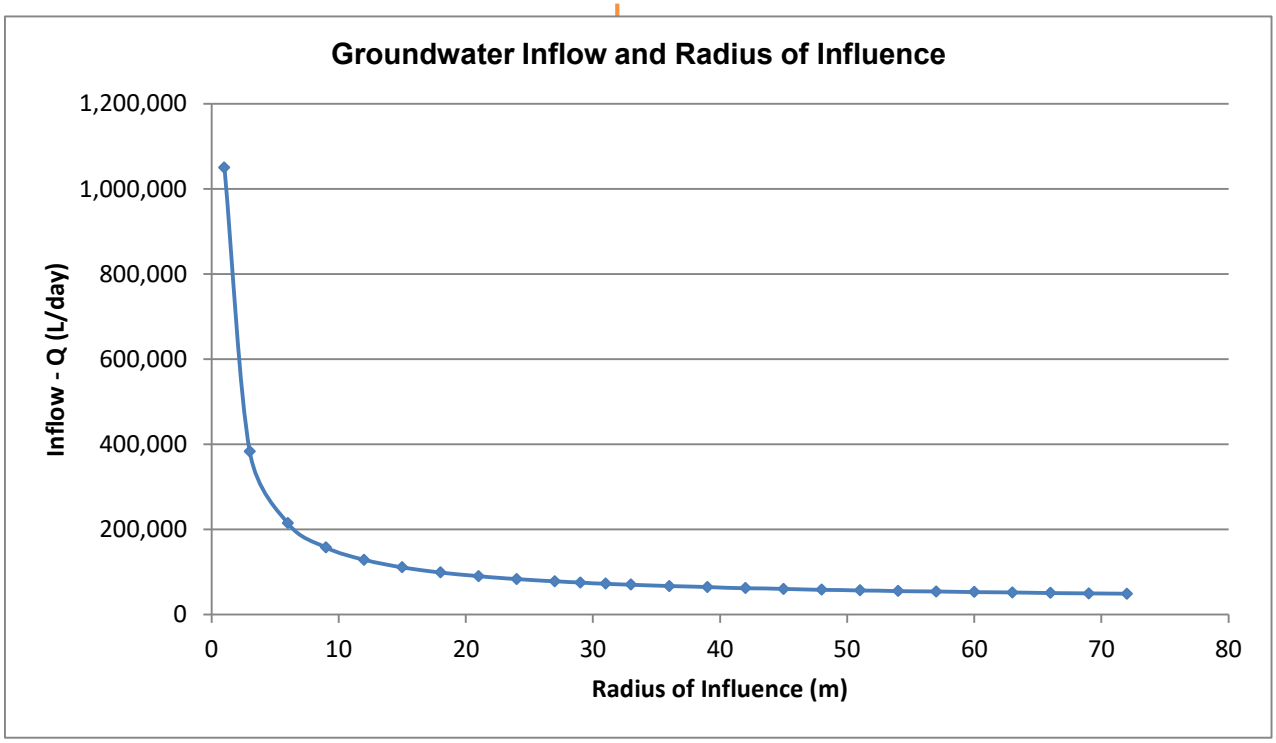
Equivalent Radius of Excavation = A+B=Pi + r

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)	Q (m^3/s)	Q (m^3/day)	Q (L/day)
10.55	1.00	0.0122	1050.1	1,050,067
12.55	3.00	0.0044	382.8	382,793
15.55	6.00	0.0025	214.5	214,498
18.55	9.00	0.0018	157.5	157,505
21.55	12.00	0.0015	128.5	128,494
24.55	15.00	0.0013	110.8	110,756
27.55	18.00	0.0011	98.7	98,704
30.55	21.00	0.0010	89.9	89,931
33.55	24.00	0.0010	83.2	83,226
36.55	27.00	0.0009	77.9	77,916
38.55	**29.00**	**0.0009**	**74.9**	**74,941**
40.55	**31.00**	**0.0008**	**72.3**	**72,320**
42.55	33.00	0.0008	70.0	69,989
45.55	36.00	0.0008	66.9	66,937
48.55	39.00	0.0007	64.3	64,312
51.55	42.00	0.0007	62.0	62,025
54.55	45.00	0.0007	60.0	60,011
57.55	48.00	0.0007	58.2	58,223
60.55	51.00	0.0007	56.6	56,621
63.55	54.00	0.0006	55.2	55,176
66.55	57.00	0.0006	53.9	53,865
69.55	60.00	0.0006	52.7	52,669
72.55	63.00	0.0006	51.6	51,572
75.55	66.00	0.0006	50.6	50,562
78.55	69.00	0.0006	49.6	49,627
81.55	72.00	0.0006	48.8	48,760
84.55	75.00	0.0006	48.0	47,952
87.55	78.00	0.0005	47.2	47,198
90.55	81.00	0.0005	46.5	46,491
93.55	84.00	0.0005	45.8	45,827

PATERSON GROUP





PATERSON GROUP

File: PH5254

Estimated Groundwater Inflow

Caivan Communities - 4795 Bank Street - SWMP Excavation

Dupuit-Forchheimer Equation **$Q = \pi K((h0^2-hp^2)/\ln(R/r))$**

Equivalent Radius of Excavation = A+B=Pi + r

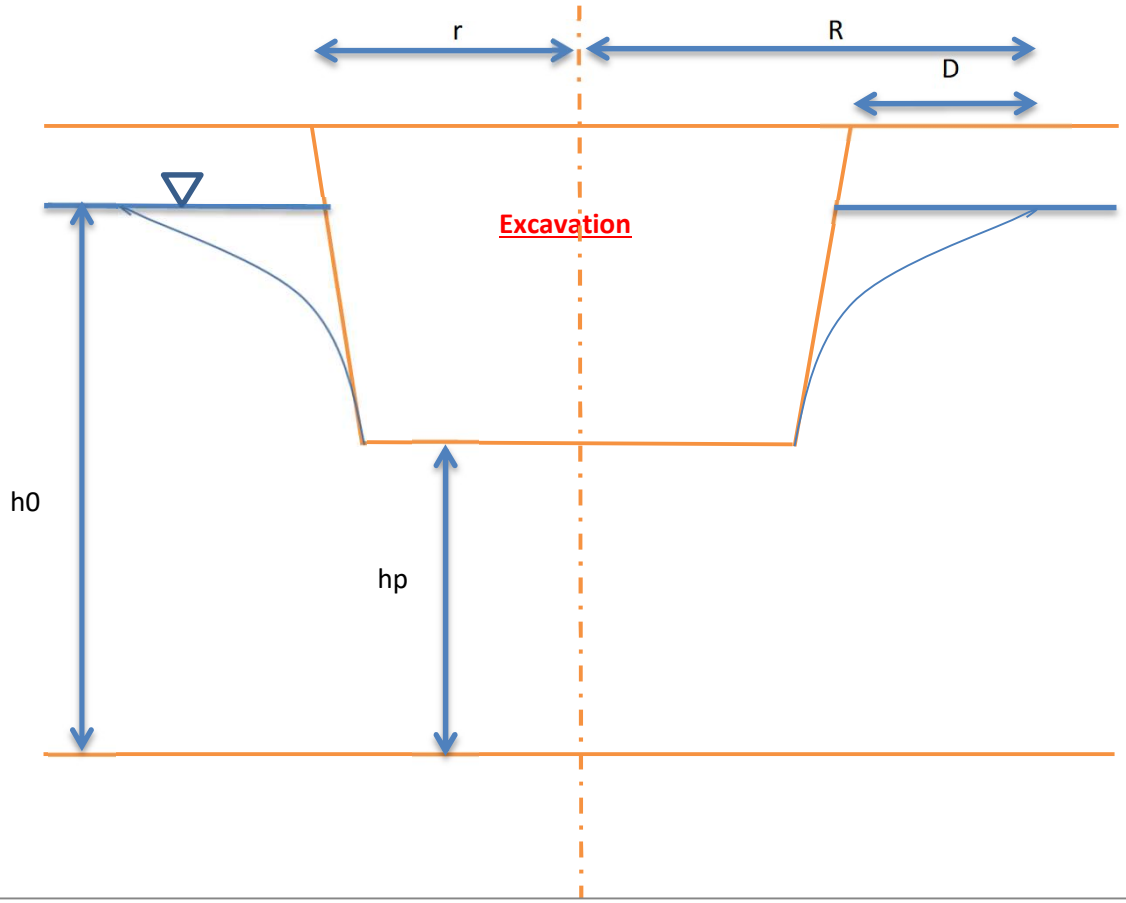
K (m/sec) =	6.02E-06
h0 (m) =	10
hp (m) =	8
r (m) =	53.79

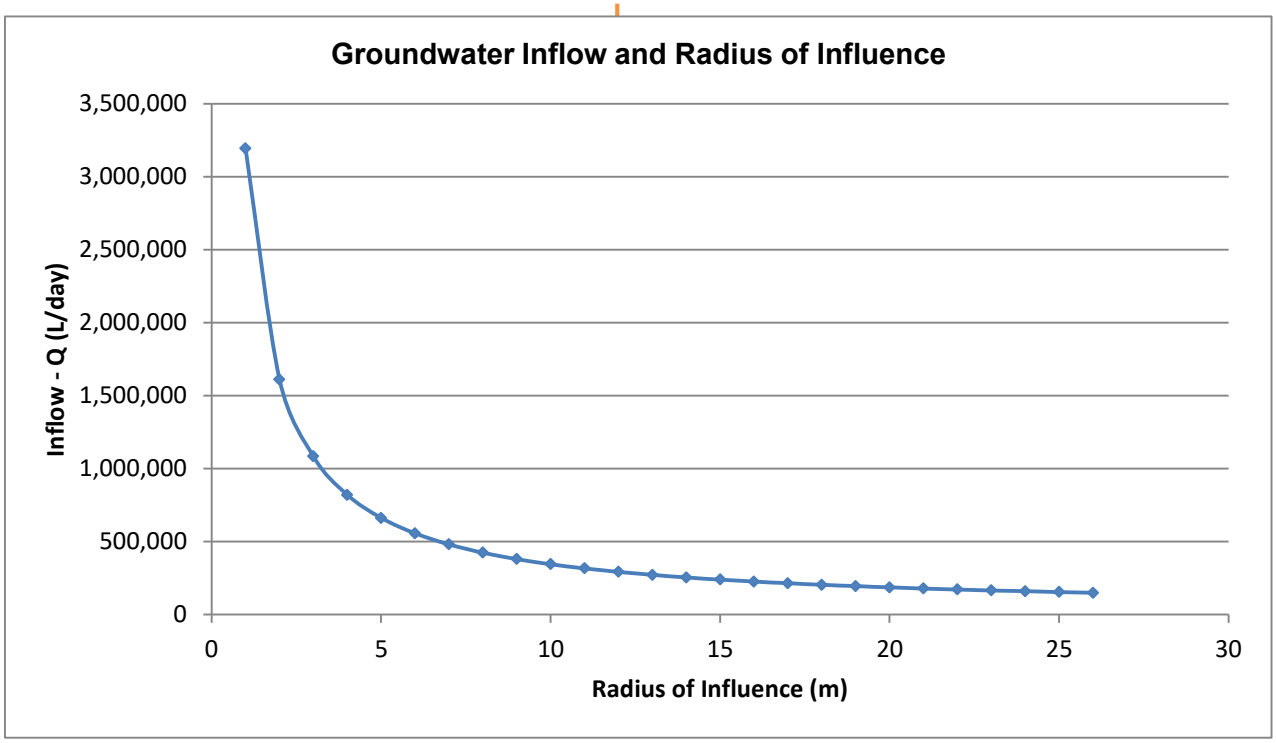
Excavation Width (X) =	74 m
Excavation Length (Y) =	95 m
Perimeter Length =	338 m
Equivalent Radius (r) =	53.79 m

R	Distance to edge of excavation (D)	Q (m^3/s)	Q (m^3/day)	Q (L/day)
54.79	1.00	0.0370	3193.8	3,193,781
55.79	2.00	0.0187	1611.5	1,611,463
56.79	3.00	0.0125	1084.0	1,083,966
57.79	4.00	0.0095	820.2	820,176
58.79	5.00	0.0077	661.9	661,869
59.79	6.00	0.0064	556.3	556,304
60.79	7.00	0.0056	480.9	480,879
61.79	8.00	0.0049	424.3	424,290
62.79	9.00	0.0044	380.3	380,261
63.79	10.00	0.0040	345.0	345,023
64.79	11.00	0.0037	316.2	316,179
65.79	12.00	0.0034	292.1	292,131
66.79	13.00	0.0031	271.8	271,772
67.79	**14.00**	**0.0029**	**254.3**	**254,312**
68.79	**15.00**	**0.0028**	**239.2**	**239,172**
69.79	16.00	0.0026	225.9	225,916
70.79	17.00	0.0025	214.2	214,213
71.79	18.00	0.0024	203.8	203,803
72.79	19.00	0.0023	194.5	194,483
73.79	20.00	0.0022	186.1	186,088
74.79	21.00	0.0021	178.5	178,488
75.79	22.00	0.0020	171.6	171,574
76.79	23.00	0.0019	165.3	165,256
77.79	24.00	0.0018	159.5	159,461
78.79	25.00	0.0018	154.1	154,124
79.79	26.00	0.0017	149.2	149,195
80.79	27.00	0.0017	144.6	144,626
81.79	28.00	0.0016	140.4	140,381
82.79	29.00	0.0016	136.4	136,425
83.79	30.00	0.0015	132.7	132,729

PATERSON GROUP

File: PH5254





PATERSON GROUP

File: PH5254

Estimated Groundwater Inflow

Caivan Communities - 4795 Bank Street - Servicing Excavation-Bedrock

Dupuit-Forchheimer Equation **Q= πK((h0^2-hp^2)/ln(R/r))**

K (m/sec) =	1.94E-04
h0 (m) =	20
hp (m) =	18
r (m) =	9.55

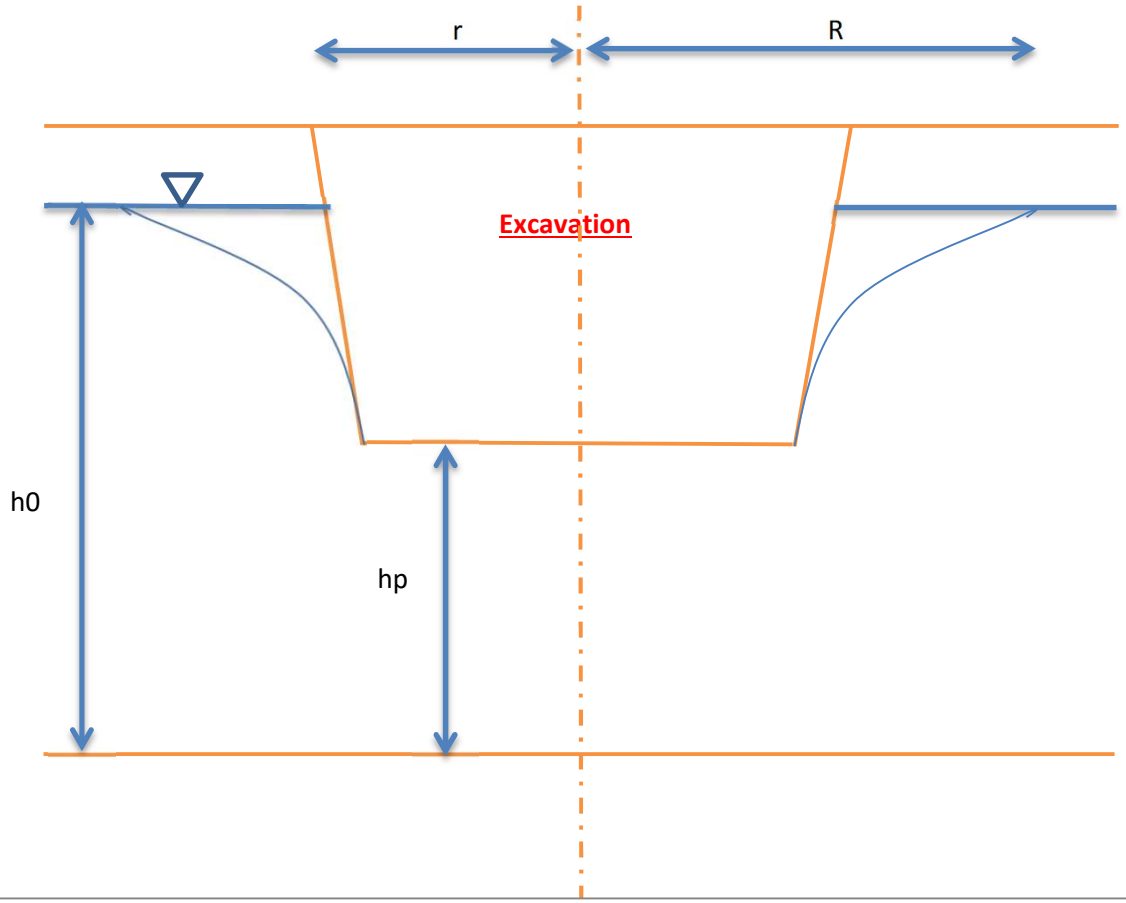
Equivalent Radius of Excavation = A+B=Pi + r

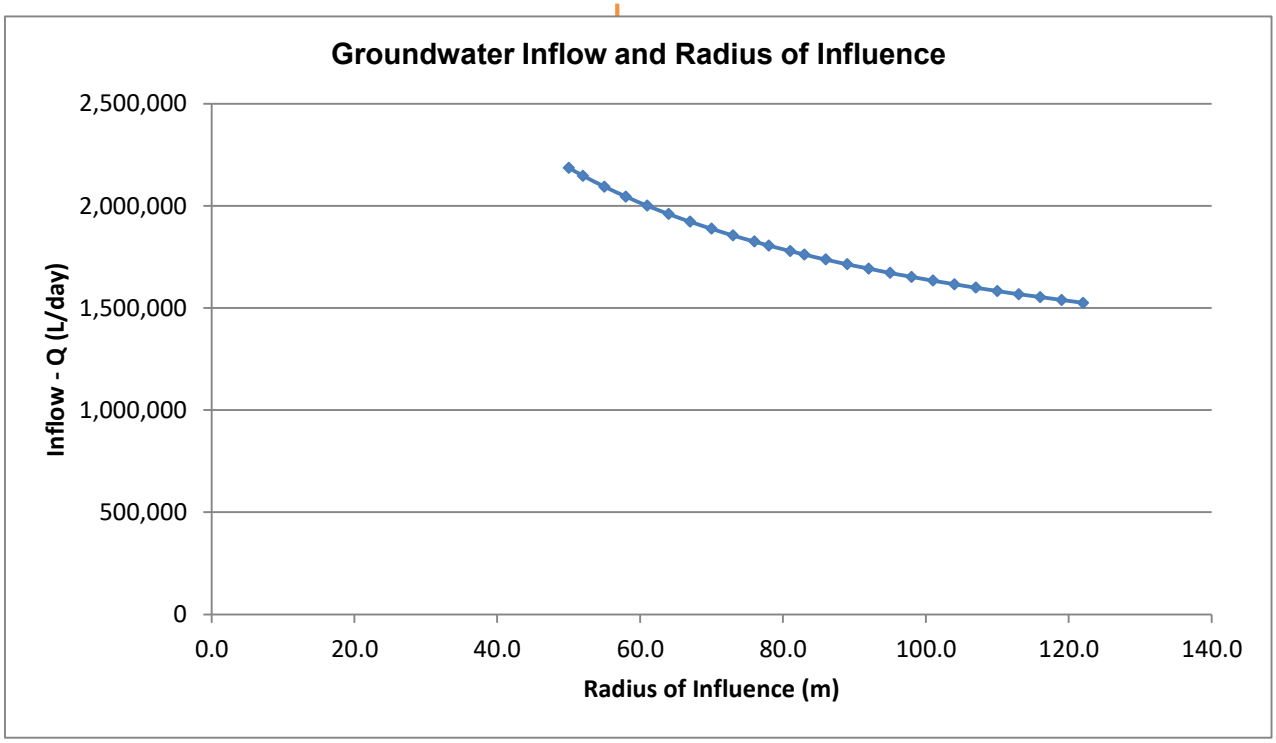
Excavation Width (X) =	5 m
Excavation Length (Y) =	25 m
Perimeter Length =	60 m
Equivalent Radius (r) =	9.55 m

R	Distance to edge of excavation (D)	Q (m^3/s)	Q (m^3/day)	Q (L/day)
59.55	50.00	0.0253	2186.5	2,186,492
61.55	52.00	0.0249	2147.7	2,147,730
64.55	55.00	0.0242	2094.2	2,094,242
67.55	58.00	0.0237	2045.6	2,045,613
70.55	61.00	0.0232	2001.2	2,001,164
73.55	64.00	0.0227	1960.3	1,960,343
76.55	67.00	0.0223	1922.7	1,922,690
79.55	70.00	0.0218	1887.8	1,887,825
82.55	73.00	0.0215	1855.4	1,855,424
85.55	76.00	0.0211	1825.2	1,825,217
87.55	78.00	0.0209	1806.2	1,806,181
90.55	81.00	0.0206	1779.1	1,779,127
92.55	**83.00**	**0.0204**	**1762.0**	**1,762,014**
95.55	**86.00**	**0.0201**	**1737.6**	**1,737,609**
98.55	89.00	0.0198	1714.6	1,714,595
101.55	92.00	0.0196	1692.8	1,692,846
104.55	95.00	0.0194	1672.3	1,672,251
107.55	98.00	0.0191	1652.7	1,652,714
110.55	101.00	0.0189	1634.1	1,634,147
113.55	104.00	0.0187	1616.5	1,616,474
116.55	107.00	0.0185	1599.6	1,599,625
119.55	110.00	0.0183	1583.5	1,583,539
122.55	113.00	0.0182	1568.2	1,568,160
125.55	116.00	0.0180	1553.4	1,553,439
128.55	119.00	0.0178	1539.3	1,539,329
131.55	122.00	0.0177	1525.8	1,525,790
134.55	125.00	0.0175	1512.8	1,512,785
137.55	128.00	0.0174	1500.3	1,500,279
140.55	131.00	0.0172	1488.2	1,488,242
143.55	134.00	0.0171	1476.6	1,476,644

PATERSON GROUP

File: PH5254





PATERSON GROUP

APPENDIX 4

SURROUNDING WATER WELL RECORDS

31 9/50.

UTM | 18 | Z | 4513171210 | E
| 5 | R | 5011717110 | N

Elev. | 4 | R | 013016 |

Basis Plotted from +
Con IV
lot 21

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

GROUND WATER BRANCH
SEP 9 1957
ONTARIO WATER RESOURCES COMMISSION
15 N. 217

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City Gloucester
[redacted] in Village, Town or City)
Address Building Bridge

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 2
Length(s) 20
Type of screen
Length of screen

Pumping Test

Static level 10 ft
Pumping rate 200 G.P.H.
Pumping level 30 ft
Duration of test 3 hrs

Well Log

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
Boulders and sand	0	20	60	50	Fresh
Sandstone	20	60			

For what purpose(s) is the water to be used? Home
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? upland
Drilling firm F R Corvette
Address 1635-2 Baseline R.D. City Rideau
Name of Driller F R Corvette
Address

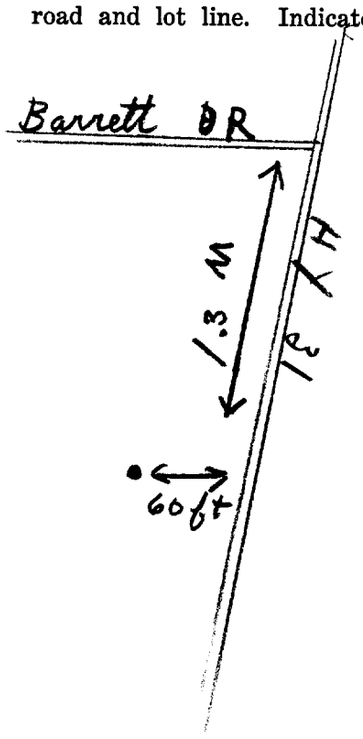
Licence Number 395

I certify that the foregoing statements of fact are true.

Date 29 Aug 57 F R Corvette
Signature of Licensee

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



Form 5

316/52

UTM 18 Z 415317 6010 E
15 R 5061715 6010 N
Elev. 4 R 0131 15
Basin 25

GROUND WATER BRANCH
SEP 15 1962
No 2176
ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District CARLETON Township, Village, Town or City GLOUCESTER

Con. 4 RF Lot 21 Date completed 20 (day) JULY (month) 62 (year)

[redacted] dress BILLINGS BRIDGE

Casing and Screen Record

Inside diameter of casing 4
Total length of casing 18
Type of screen —
Length of screen —
Depth to top of screen —
Diameter of finished hole 4

Pumping Test

Static level 6
Test-pumping rate 6 G.P.M.
Pumping level 8
Duration of test pumping 1 HR
Water clear or cloudy at end of test CL
Recommended pumping rate 6 G.P.M.
with pump setting of 30 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
CLAY	0	18		
LIMESTONE	18	45	45	F

For what purpose(s) is the water to be used? Home

Is well on upland, in valley, or on hillside? U

Drilling or Boring Firm M MEDSTER & SONS

Address [illegible]

Licence Number [illegible]

Name of Driller or Borer SIMS

Address [illegible]

Date AUG 28

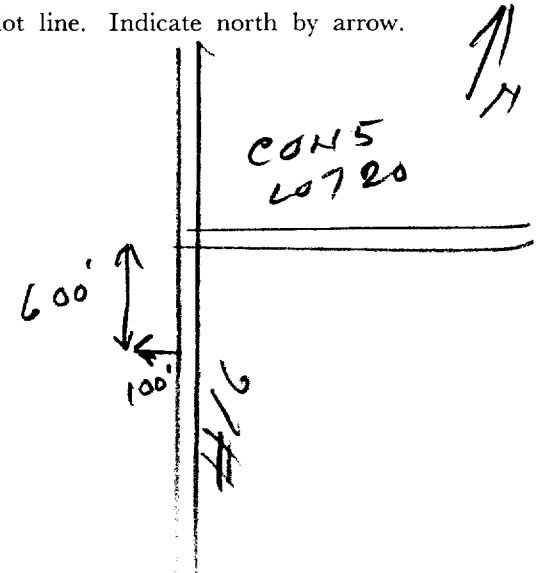
M Meagher
(Signature of Licensed Drilling or Boring Contractor)

Form 7 10M-62-1152

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.58

46

316/50

UTM 18 Z 415316610 E

R 5101810710 N

Plan 4 R 012915

Basin F 15

ONTARIO

The Well Drillers Act

Department of Mines, Province of Ontario

15 No. 2245

RECEIVED
MAR 31 1952
GEOLOGICAL BRANCH
DEPARTMENT of MINES

Water Well Record

Carleton Co. Gloucester Township, ~~Village, Town or City~~ Gloucester

[redacted] Town or City)

[redacted] ss R.R.#1 Billings Bridge

Date Completed 25 Sept 51 (day) (month) (year) Cost of Well (excluding pump)

Pipe and Casing Record

Casing diameter(s) 5"

Length(s) of casing(s) 10'

Type of screen

Length of screen

Distance from top of screen to ground level

Is well a gravel-wall type? No

Pumping Test

Date Sept 25 1951

Static level 10'

Pumping level 15'

Pumping rate 300 G.P.H.

Duration of test 30 MIN

Distance from cylinder or bowls to ground level

Water Record

Kind (fresh or mineral) Fresh

Quality (hard, soft, contains iron, sulphur, etc.) Hard

Appearance (clear, cloudy, coloured) Clear

For what purpose(s) is the water to be used? Household

How far is well from possible source of contamination? 50 Feet

What is the source of contamination? Privy

Enclose a copy of any mineral analysis that has been made of water

Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
37'	Good	27'

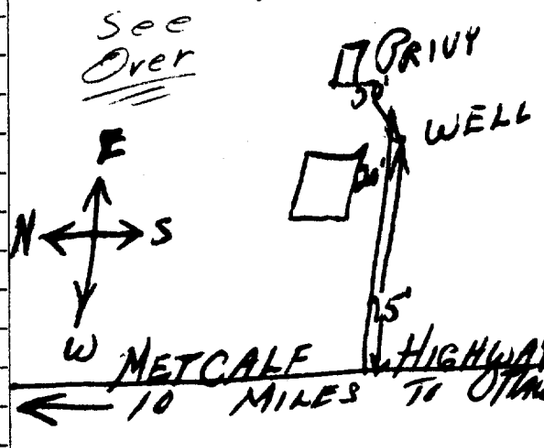
Well Log

Overburden and Bedrock Record	From	To
Clay & Limestone	0 ft.	4 ft.
	4'	37'

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.

See Over



Situation: Is well on upland, in valley, or on hillside? Upland

Drilling Firm G. A. Wellman

Address 578 Westminster

Name of Driller G. A. Wellman Address 578 Westminster

Date Sept 25 1951 Licence Number 243

G. A. Wellman
Signature of Licensee

FORM 5

316/52 162

UTM | 18 Z | 4513840 E
| 5 R | 5017170 N
Elev. | 4 R | 0310 6
Basin | 25 | | |

ONTARIO

The Well Drillers Act
Department of Mines, Province of Ontario

15 No. 2246

RECEIVED
DEC 6 1951
GEOLOGICAL BRANCH
DEPARTMENT OF MINES

Water Well Record

[redacted] Township, ~~Village, Town or City~~ Gloucester
Town or City)
ss. Leitrim
Date Completed 1.0 (day) 2 (month) 1.2.0 (year) Cost of Well (excluding pump) $3.27.00

Pipe and Casing Record

Casing diameter(s) 5
Length(s) of casing(s) 0
Type of screen —
Length of screen —
Distance from top of screen to ground level —
Is well a gravel-wall type? No

Pumping Test

Date Nov 24
Static level 5'
Pumping level 20'
Pumping rate 8 GPM
Duration of test 30 Min
Distance from cylinder or bowls to ground level —

Water Record

Kind (fresh or mineral) Fresh
Quality (hard, soft, contains iron, sulphur, etc.) Hard
Appearance (clear, cloudy, coloured) clear
For what purpose(s) is the water to be used? Farm
How far is well from possible source of contamination? 100' Barn
What is the source of contamination? BARN
Enclose a copy of any mineral analysis that has been made of water

Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
30'	good	~~5~~ 30'
60'	"	55"
99'	"	74'

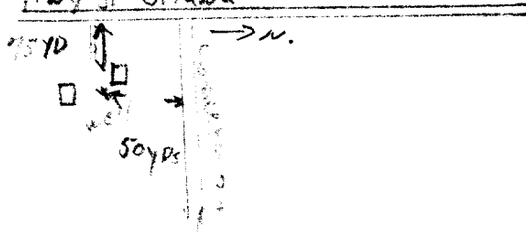
Well Log

Overburden and Bedrock Record	From	To
BOULDER TILL	0 ft.	5 ft.
SANDSTONE	5'	80'

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.

Hwy 31 Ottawa →



See OVER

Situation: Is well on upland, in valley, or on hillside? up land
Drilling Firm F.A. McGINN & SON
Address 185 JAMES ST.
Name of Driller M. Renaud Address
Date Nov Dec 1, 60 Licence Number

Signature of Licensee

FORM 5

R.F

31G/52

UTM Zone 18 Z | 4 5 4 1 0 6 1 0 | E

L.S.R. 24 | 5 0 1 1 7 1 8 7 1 9 | N

15 No 2248

The Ontario Water Resources Commission Act

Elev. | 4 | R | 0 3 1 1 0 |

WATER WELL RECORD

Basin | 2 5 |

County or District CARLETON

Township, Village, Town or City GLOUCESTER

Con. 5 RF Lot 21

Date completed 25 (day) 4 month 1966 year)

[redacted] dress P.O. Box 212 R.R #6 OTTAWA, ONT.

Casing and Screen Record

Inside diameter of casing 6 1/4"

Total length of casing 21' 3"

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 6"

Pumping Test

Static level 14'

Test-pumping rate 3 G.P.M.

Pumping level 90

Duration of test pumping 1 1/2 HRS

Water clear or cloudy at end of test CLEAR

Recommended pumping rate 3 G.P.M.

with pump setting of 90 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
TOP SOIL	0	1		
CLAY	1	6		Fresh
SAND STONE	6	98	80 - 97	

For what purpose(s) is the water to be used? INDUSTRY

Is well on upland, in valley, or on hillside? Upland

Drilling or Boring Firm McLEAN WATER SUPPLY LTD.

Address 1532 RAVEN AVE OTTAWA, ONT.

Licence Number 2154

Name of Driller or Borer LOUIS BURROWS

Address

Date APR. 26 - 1966

A. J. Schaf

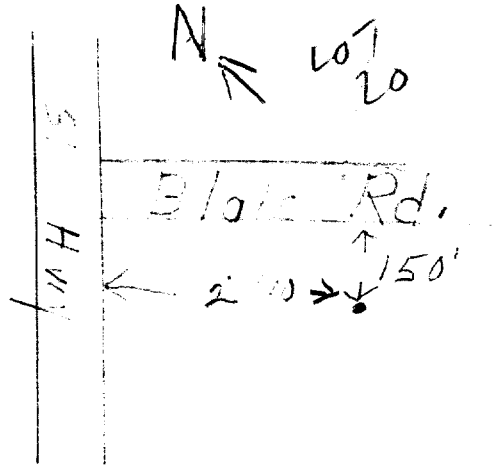
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.58

9 ##

UTM | 1 | 8 | Z | 4 | 5 | 3 | 9 | 6 | 10 | E
| 5 | R | 5 | 0 | 1 | 7 | 8 | 6 | 0 | N

Elev. | 4 | R | 0 | 3 | 0 | 0 | 1

Basin | 2 | 5 |

WATER RESOURCES DIVISION
DEC 14 1966
ONTARIO WATER RESOURCES COMMISSION

15 No 2249

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carl — Township, Village, Town or City Gloucester

Con. 5 1/2 — Lot 21 — Date completed 19 (day) Nov. (month) 1966 (year)

[redacted] dress RR #3 Metcalfe Ont

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 20'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 5"

Pumping Test

Static level 15

Test-pumping rate 5 G.P.M.

Pumping level 45

Duration of test pumping 1 hr

Water clear or cloudy at end of test cloudy

Recommended pumping rate 5 G.P.M.

with pump setting of 75' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
sand fill	0	4	83	fresh
sandstone	4	85		

For what purpose(s) is the water to be used?
old house

Is well on upland, in valley, or on hillside? upland

Drilling or Boring Firm Capital Water Supply

Address 14 Ashford Dr Ottawa 6

Licence Number 2158

Name of Driller or Borer H Scott

Address

Date Nov 19, 1966

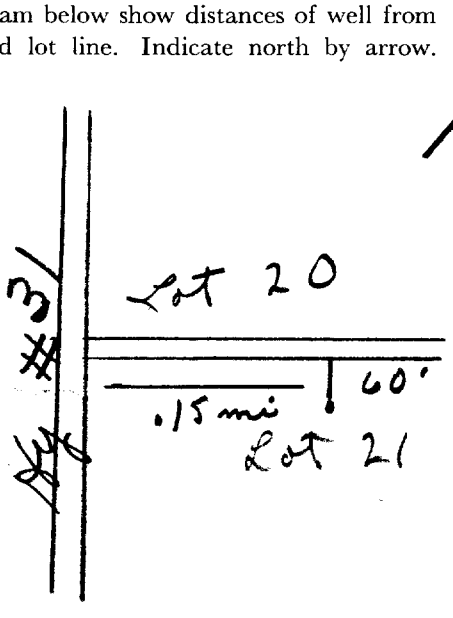
Walter Lavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



UTM 18 453890 RF Con V Lot 21
5042 5017640
Elev. 4 0308
Zone 25

CODED

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carleton Township, Village, Town or City Gloucester

Con. RF 5 Lot 2021 Date completed 6 December 1968 (day month year)

[redacted] Address Long Sault, Ontario

Casing and Screen Record

Inside diameter of casing 6"

Total length of casing 15'

Type of screen nil

Length of screen n/a

Depth to top of screen n/a

Diameter of finished hole 6"

Pumping Test

Static level 2'

Test-pumping rate 10 G.P.M.

Pumping level 5'

Duration of test pumping 1 Hour

Water clear or cloudy at end of test cloudy

Recommended pumping rate 10 G.P.M.

with pump setting of 25' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Closely packed Boulders	0'	13'		
Very Abrassive Sandstone	13'	63'	60'	fresh

For what purpose(s) is the water to be used?

Trailer Sales Depot

Is well on upland, in valley, or on hillside? Valley

Drilling or Boring Firm

Blair Phillips Drilling Co. Ltd.,

Address 1119 Belaise Road, Ottawa 5, Ontario.

Licence Number 2779

Name of Driller or Borer J. Moore

Address Kars, Ontario

Date 6 December 1968

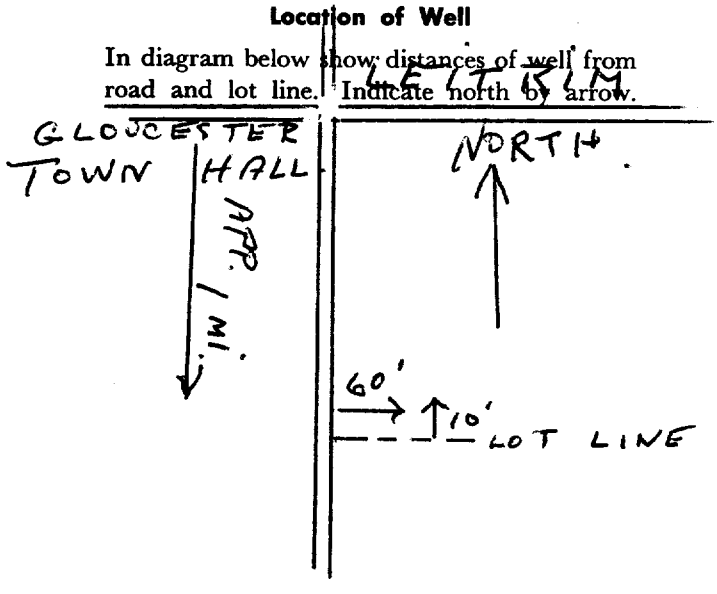
(Signature of Licensed Drilling or Boring Contractor)

Form 7

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

31G 5a

1517349

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

(11) MUNICIP 15002 CON 05

COUNTY OR DISTRICT: Ottawa Co. [redacted]
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Gloucester
CON., BLOCK, TRACT, SURVEY, ETC.: 5 R.F.
LOT: 021
DATE COMPLETED: DD 09 MO June YR 80
#6 Ottawa Ont.
UTM: 17699 RC 4 ELEVATION 0305 RC 4 BASIN CODE 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	sandy soil	stone		0	8
Brown	hard	granite rock.		8	27

(31) 0008602128 1 0027621 1273
(32)

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0027	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

(51) CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06 6 4	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0	0027
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET	

(61) PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)
10-13	14-17	
18-21	22-25	
26-29	30-33	

(71) PUMPING TEST

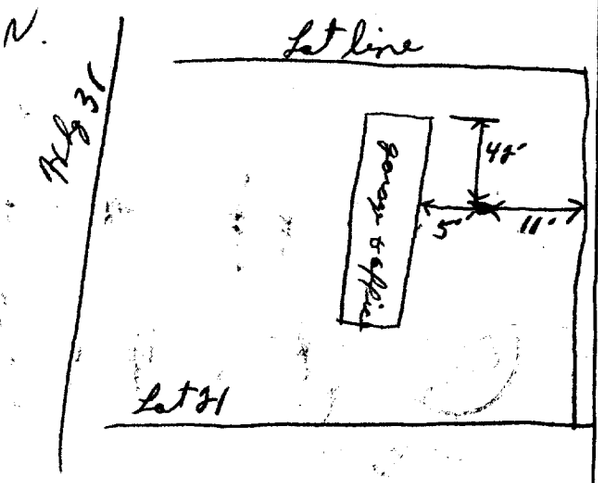
PUMPING TEST METHOD: 1 ☐ PUMP 2 ☒ BAILER
PUMPING RATE: 0015 GPM
DURATION OF PUMPING: HOURS 01 MINS 00
STATIC LEVEL: 005 FEET
WATER LEVEL END OF PUMPING: 014 FEET
WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY

15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
013 FEET	012 FEET	014 FEET	014 FEET

IF FLOWING, GIVE RATE: GPM
PUMP INTAKE SET AT: 27 FEET
WATER AT END OF TEST: 1 ☐ CLEAR 2 ☒ CLOUDY
RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP
RECOMMENDED PUMP SETTING: 023 FEET
RECOMMENDED PUMPING RATE: 0007 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL (84): 1 ☒ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED

WATER USE (55-56) 05: 1 ☐ DOMESTIC; 2 ☐ STOCK; 3 ☐ IRRIGATION; 4 ☐ INDUSTRIAL; ☐ OTHER; 5 ☒ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED

METHOD OF DRILLING (57) 1: 1 ☒ CABLE TOOL; 2 ☐ ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 4 ☐ ROTARY (AIR); 5 ☐ AIR PERCUSSION; 6 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Maurice Cyr Ltd. — LICENCE NUMBER: 1517
ADDRESS: Casselman Ont.
NAME OF DRILLER OR BORER — LICENCE NUMBER
SIGNATURE OF CONTRACTOR: Maurice Cyr — SUBMISSION DATE: DAY ____ MO ____ YR ____

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 1517 — DATE RECEIVED 63-68: 020980 — 80
DATE OF INSPECTION — INSPECTOR: Km
REMARKS

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506-8-77

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1517349

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11

MUNICIP | CON

COUNTY OR DISTRICT: Ottawa Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Gloucester
CON. BLOCK, TRACT, SURVEY, ETC: 5
LOT: 21
ADDRESS: RR #6 Ottawa Ont.
DATE COMPLETED: DAY 9 MO June YR 80

21 | UTM | ZONE | EASTING | NORTHING | RC | ELEVATION | RC | BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	sandy soil	stone		0	8
Brown	hard	granite rock		8	22

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
17	1 ☐ FRESH 2 ☒ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 1/4	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE	.188	0	20
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☐ PUMP 2 ☒ BAILER
PUMPING RATE: 15 GPM
DURATION OF PUMPING: 1 HOURS ___ MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING
5 FEET	14 FEET

WATER LEVELS DURING: 1 ☐ PUMPING 2 ☐ RECOVERY

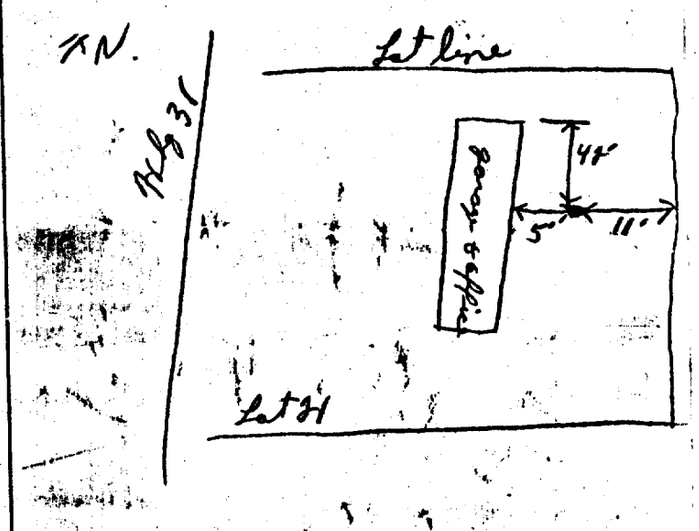
15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
12 FEET	12 FEET	14 FEET	14 FEET

IF FLOWING GIVE RATE ___ GPM
PUMP INTAKE SET AT: 27 FEET
WATER AT END OF TEST: 1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP
RECOMMENDED PUMP SETTING: 23 FEET
RECOMMENDED PUMPING RATE: 7 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS

FINAL STATUS OF WELL

1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE

1 ☐ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☒ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF DRILLING

1 ☒ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Maurice Cayer Ltd. | LICENCE NUMBER: 1517
ADDRESS: Carp Ont.
NAME OF DRILLER OR BORER | LICENCE NUMBER
SIGNATURE OF CONTRACTOR: Maurice Cayer | SUBMISSION DATE: DAY ___ MO ___ YR ___

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR | 020980
DATE OF INSPECTION | INSPECTOR
REMARKS

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 1528323 MUNICIP. 15002 CON. R.F. LOT 05

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON. BLOCK, TRACT, SURVEY, ETC.	LOT
[redacted]	Gloucester	5	20

[redacted] Pineglen Cres. Nepean, Ontario K2G 0G9

DATE COMPLETED: DAY 14 MO 10 YR 94

BEARING | RC. | ELEVATION | RC. | BASIN CODE | II | III | IV

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	Clay			0	4
Gray	Sand	Gravel, Boulders		4	12
Gray	Shale			12	123

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
30	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
115	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
NOT TESTED	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 1/4	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC	.188	0	22
6	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE 5 ☐ PLASTIC		22	123
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
20	0	Grouted Cement (3)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	4 GPM	1 HOURS ___ MINS

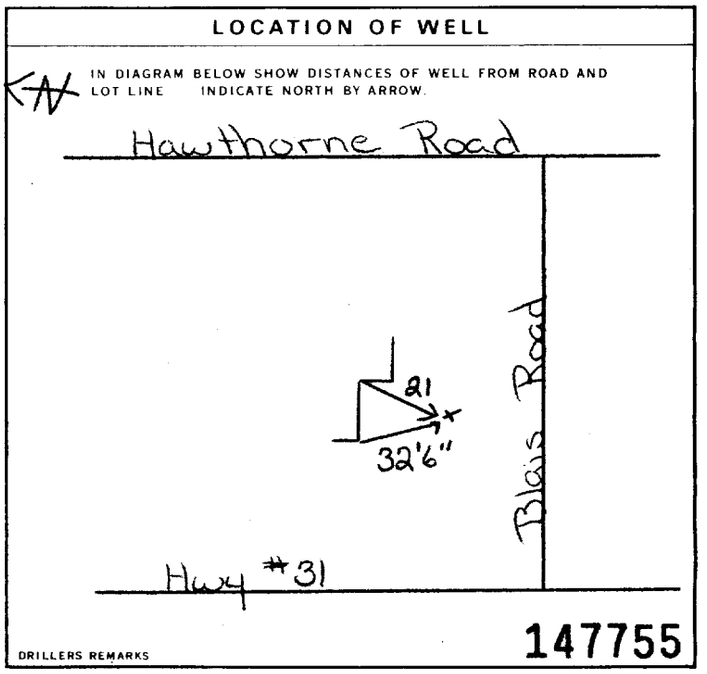
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
18 FEET	120 FEET	1 ☒ PUMPING 2 ☐ RECOVERY	50 FEET	75 FEET	100 FEET	120 FEET

IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	115 FEET	4 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS: 147755

FINAL STATUS OF WELL	1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED ☐ DEWATERING
WATER USE	1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED
METHOD OF CONSTRUCTION	1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☒ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING ☐ DIGGING ☐ OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR: Capital Water Supply Ltd.
WELL CONTRACTOR'S LICENCE NUMBER: 1558
ADDRESS: P.O. Box 490 Stittsville, Ontario K2S 1A6
NAME OF WELL TECHNICIAN: S. Miller
WELL TECHNICIAN'S LICENCE NUMBER: T0097
SIGNATURE OF TECHNICIAN/CONTRACTOR
SUBMISSION DATE: DAY 17 MO 10 YR 94

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR 1558 | DATE RECEIVED DEC 07 1994
DATE OF INSPECTION | INSPECTOR
REMARKS

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506 (11/86) FORM 9

Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 — 1531693 — Municipality 15002 — Con. CON — 05

[redacted]

County or District: Ottawa Carleton
Township/Borough/City/Town/Village: Gloucester
Address: Greely Dr
Con block tract survey, etc.: 5
Lot: 6
Date completed: 25 day 10 month 00 year

21 — UTM — Northing — RC — Elevation — RC — Basin Code — ii — iii — iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
	gravel			0	3
grey	sandstone			3	220

31

32

41 WATER RECORD

Water found at - feet	Kind of water
206	1 ☑ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
214	1 ☑ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☑ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6 1/4	1 ☑ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	188	0	22
8 3/4	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		0	20
6	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		20	220

SCREEN

Sizes of opening (Slot No.)	Diameter inches	Length feet

Material and type:
Depth at top of screen feet:

61 PLUGGING & SEALING RECORD

☑ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
2	22	cement grout

71 PUMPING TEST

Pumping test method: 1 ☑ Pump 2 ☐ Bailer
Pumping rate: 10 GPM
Duration of pumping: 1 Hours Mins

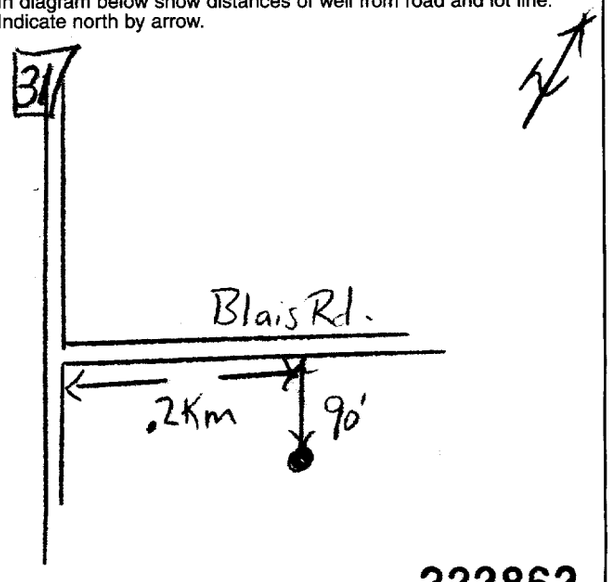
Static level	Water level end of pumping	Water levels during: 1 ☐ Pumping 2 ☑ Recovery			
		15 minutes	30 minutes	45 minutes	60 minutes
30 feet	120 feet	30 feet	30 feet	30 feet	30 feet

If flowing give rate: GPM
Pump intake set at: feet
Water at end of test: ☐ Clear ☑ Cloudy

Recommended pump type: ☐ Shallow ☑ Deep
Recommended pump setting: 120 feet
Recommended pump rate: 10 GPM

LOCATION OF WELL

In diagram below show distances of well from road and lot line. Indicate north by arrow.



222862

FINAL STATUS OF WELL

1 ☑ Water supply
2 ☐ Observation well
3 ☐ Test hole
4 ☐ Recharge well
5 ☐ Abandoned, insufficient supply
6 ☐ Abandoned, poor quality
7 ☐ Abandoned (Other)
8 ☐ Dewatering
9 ☐ Unfinished
10 ☐ Replacement well

WATER USE

1 ☑ Domestic
2 ☐ Stock
3 ☐ Irrigation
4 ☐ Industrial
5 ☐ Commercial
6 ☐ Municipal
7 ☐ Public supply
8 ☐ Cooling & air conditioning
9 ☐ Not use
10 ☐ Other

METHOD OF CONSTRUCTION

1 ☐ Cable tool
2 ☐ Rotary (conventional)
3 ☐ Rotary (reverse)
4 ☐ Rotary (air)
5 ☑ Air percussion
6 ☐ Boring
7 ☐ Diamond
8 ☐ Jetting
9 ☐ Driving
10 ☐ Digging
11 ☐ Other

Name of Well Contractor: Air-Rock Drilling Co Ltd
Well Contractor's Licence No.: 1119
Address: RR # 2 Jasper Ont
Name of Well Technician: Shannon Purcell
Well Technician's Licence No.: T2122
Signature of Technician/Contractor:
Submission date: 02 day 11 mo 00

MINISTRY USE ONLY

Data source:
Contractor: 1119
Date received: JAN 03 2001
Date of inspection:
Inspector:
Remarks:

CSS.ES1

2 - MINISTRY OF THE ENVIRONMENT COPY

0506 (11/98) Front Form 9

Ontario **Ministry of the Environment**

The Ontario Water Resources Act

WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 **1533566** Municipality 15002 Con. RF 05

County or District: Ottawa Carleton
Township/Borough/City/Town/Village: Gloucester
Con block tract survey, etc.: 5
Lot: 21
Address: Gloucester, Ont
Date completed: 07 day 02 month 03 year

21 UTM Northing RC Elevation RC Basin Code ii iii iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
	Sand			0	7
grey	Sandstone			7	98
"	Limestone			98	127
"	Sandstone			127	220

31
32

41 WATER RECORD

Water found at - feet	Kind of water
216	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☑ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6	1 ☑ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	188	0	22
8 3/4	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		0	20
6	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		20	220

SCREEN

Sizes of opening (Slot No.)	Diameter inches	Length feet
Material and type	**Depth at top of screen feet**	

61 PLUGGING & SEALING RECORD

☑ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
2	22	Cement grout

71 PUMPING TEST

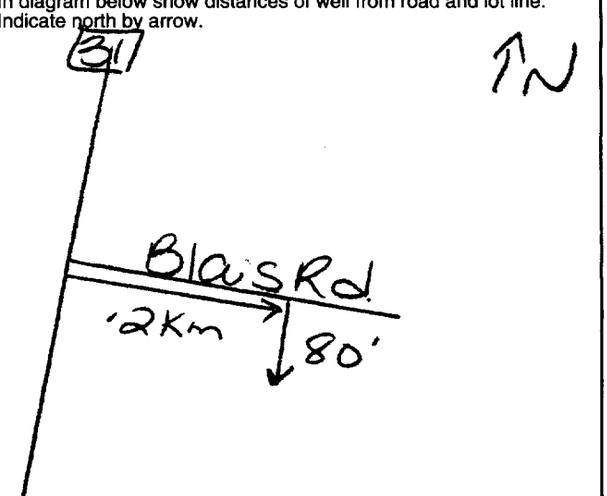
Pumping test method: 1 ☑ Pump 2 ☐ Bailer
Pumping rate: 9 GPM
Duration of pumping: 1 Hours Mins

Static level	Water level end of pumping	Water levels during: 1 ☐ Pumping 2 ☐ Recovery			
		15 minutes	30 minutes	45 minutes	60 minutes
16 feet	120 feet	16 feet	16 feet	16 feet	16 feet

If flowing give rate: GPM
Pump intake set at: feet
Water at end of test: ☐ Clear ☑ Cloudy
Recommended pump type: ☐ Shallow ☑ Deep
Recommended pump setting: 120 feet
Recommended pump rate: 9 GPM

LOCATION OF WELL

In diagram below show distances of well from road and lot line.
Indicate north by arrow.



248869

FINAL STATUS OF WELL 54

☑ 1 Water supply ☐ 2 Observation well ☐ 3 Test hole ☐ 4 Recharge well ☐ 5 Abandoned, insufficient supply ☐ 6 Abandoned, poor quality ☐ 7 Abandoned (Other) ☐ 8 Dewatering ☐ 9 Unfinished ☐ 10 Replacement well

WATER USE 55-56

☑ 1 Domestic ☐ 2 Stock ☐ 3 Irrigation ☐ 4 Industrial ☐ 5 Commercial ☐ 6 Municipal ☐ 7 Public supply ☐ 8 Cooling & air conditioning ☐ 9 Not use ☐ 10 Other

METHOD OF CONSTRUCTION 57

☐ 1 Cable tool ☐ 2 Rotary (conventional) ☐ 3 Rotary (reverse) ☐ 4 Rotary (air) ☑ 5 Air percussion ☐ 6 Boring ☐ 7 Diamond ☐ 8 Jetting ☐ 9 Driving ☐ 10 Digging ☐ 11 Other

Name of Well Contractor: A1 Rock Dr. Ug Ltd
Well Contractor's Licence No.: 1119
Address: RR#1 Richmond, Ont
Name of Well Technician: Shannon Purcell
Well Technician's Licence No.: T2122
Signature of Technician/Contractor:
Submission date: 28 day 02 mo 03 yr

MINISTRY USE ONLY

Data source 58
Contractor: 1119 59-62
Date received: MAR 31 2003 63-68 80
Date of inspection
Inspector
Remarks: CSS.ES3

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Ontario **Ministry of the Environment**

The Ontario Water Resources Act
WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 **1533567** Municipality 15002 Con. RF 05

County or District	Township/Borough/City/Town/Village	Con	block	tract	survey, etc.	Lot
Ottawa Carleton	Gloucester	5				21

[redacted]

Address: Gloucester, Ont

Date completed: 07 day 02 month 03 year

21 UTM Northing RC Elevation RC Basin Code ii iii iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
	WELL	ABANDONMENT			

31

32

41 WATER RECORD

Water found at - feet	Kind of water
10-13	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas (14)
15-18	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (19)
20-23	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (24)
25-28	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (29)
30-33	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (34) (60)

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
10-11	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic (12)			13-16
17-18	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic (19)			20-23
24-25	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic (26)			27-30

SCREEN

Sizes of opening (Slot No.) (31-33)	Diameter inches (34-38)	Length feet (39-40)
Material and type	Depth at top of screen feet (41-44)	(30)

61 PLUGGING & SEALING RECORD

☐ Annular space ☑ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
0 (10-13)	75 (14-17)	hole plug
18-21	22-25	
26-29	30-33 (80)	

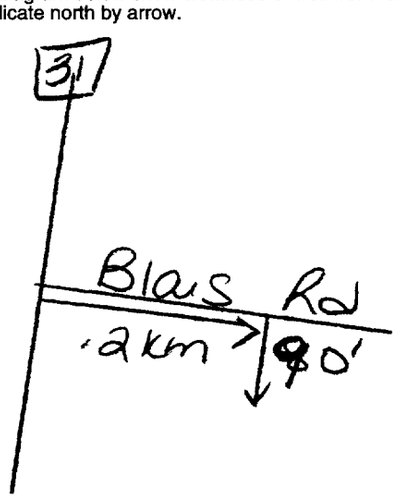
71 PUMPING TEST

Pumping test method (10) 1 ☐ Pump 2 ☐ Bailer	Pumping rate (11-14) GPM	Duration of pumping (15-16) Hours (17-18) Mins
Static level (19-21) feet / Water level end of pumping (22-24) feet	(25) Water levels during 1 ☐ Pumping 2 ☐ Recovery	
15 minutes (26-28) feet / 30 minutes (29-31) feet	45 minutes (32-34) feet / 60 minutes (35-37) feet	
If flowing give rate (38-41) GPM	Pump intake set at feet	Water at end of test (42) ☐ Clear ☐ Cloudy
Recommended pump type ☐ Shallow ☐ Deep	Recommended pump setting (43-45) feet	Recommended pump rate (46-49) GPM

(50-53)

LOCATION OF WELL

In diagram below show distances of well from road and lot line.
Indicate north by arrow.



248870

FINAL STATUS OF WELL (54)

1 ☐ Water supply
2 ☐ Observation well
3 ☐ Test hole
4 ☐ Recharge well
☑ Abandoned, insufficient supply
6 ☐ Abandoned, poor quality
7 ☐ Abandoned (Other)
8 ☐ Dewatering
9 ☐ Unfinished
10 ☐ Replacement well

WATER USE (55-56)

1 ☐ Domestic
2 ☐ Stock
3 ☐ Irrigation
4 ☐ Industrial
5 ☐ Commercial
6 ☐ Municipal
7 ☐ Public supply
8 ☐ Cooling & air conditioning
☑ Not use
10 ☐ Other

METHOD OF CONSTRUCTION (57)

1 ☐ Cable tool
2 ☐ Rotary (conventional)
3 ☐ Rotary (reverse)
☑ Rotary (air)
5 ☐ Air percussion
6 ☐ Boring
7 ☐ Diamond
8 ☐ Jetting
9 ☐ Driving
10 ☐ Digging
11 ☐ Other

Name of Well Contractor	Well Contractor's Licence No.
Air Rock Drilling Ltd	1119
Address: RR#1 Richmond, Ont	
Name of Well Technician: Ken DeSaulniers	Well Technician's Licence No.: T4
Signature of Technician/Contractor	Submission date: 28 day 02 mo 03 yr

MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68) (80)
	1119	MAR 31 2003
Date of inspection	Inspector	
Remarks		CSS.ES3

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Ontario Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A051569 A 051569

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

Well Owner's Information

First Name	Last Name	E-mail Address	Well Constructed by Well Owner
Airport Golfland			☐

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
6357 Emerald Links	Greely	Ontario	K4P 1M4	613 850 5468

Part A Construction and/or Major Alteration of a Well

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
Hwy 31	Gloucester	20	5

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa Carleton	Gloucester	Ontario	

UTM Coordinates	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation
NAD 83	18	453794	5018088		Garmin	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
Brown	Clay	Stones	Packed	0	3.35
Grey	Limestone		Broken	3.35	4.57
Grey	Limestone		Medium Hard	4.57	42.66
Grey	Limestone	Sandstone Layers	Hard	42.66	52.72

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	To	Type of Sealant Used (Material and Type)	Volume Placed (Cubic Metres)
6.40	0	Grouted Bentonite Slurry	.132m³

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☒ Rotary (Air) ☐ Digging
☐ Air percussion ☐ Boring
☐ Other, *specify* _____

Water Use

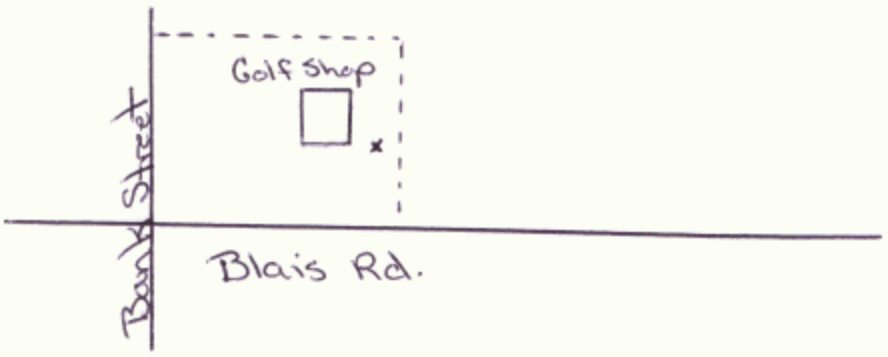
☐ Public ☐ Commercial ☐ Not used
☒ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, *specify* _____

Status of Well

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

Location of Well

Please provide a map below showing:
- all property boundaries, and measurements sufficient to locate the well in relation to fixed points,
- an arrow indicating the North direction
- detailed drawings can be provided as attachments no larger than legal size (8.5" by 14")
- vidigital pictures of inside of well can also be provided



Date Well Completed (yyyy/mm/dd)	Was the well owner's information package delivered?	Date the Well Record and Package Delivered to Well Owner (yyyy/mm/dd)
2008/07/14	☒ Yes ☐ No	2008/07/15

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558

Business Address (Street No./Name, number, RR)	Municipality
Box 490	Stittsville

Province	Postal Code	Business E-mail Address
Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
613 836 1766	Miller, Stephen

Well Technician's Licence No.	Signature of Technician	Date Submitted (yyyy/mm/dd)
0097		2008/07/16

Results of Well Yield Testing

Check box if after test of well yield, water was:
☒ Clear and sand free
☐ Cannot develop to sand-free state

If pumping discontinued, give reason:

Pumping test method: Submersible

Pump intake set at (Metres): 45.71

Pumping rate (Litres/min): 54.6

Duration of pumping: 3 hrs + _____ min

Final water level end of pumping (Metres): 21.37

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 30.47 Metres

Recommended pump rate (Litres/min): 45.5

If flowing give rate (Litres/min):

	Draw Down Time (Min)	Draw Down Water Level (Metres)	Recovery Time (Min)	Recovery Water Level (Metres)
Static Level		4.75	Static Level	
1		6.42	1	18.19
2		8.55	2	17.26
3		9.96	3	15.67
4		11.18	4	14.50
5		12.29	5	13.32
10		16.10	10	9.44
15		18.20	15	7.38
20		19.51	20	6.24
25		20.36	25	5.61
30		20.94	30	5.18
40		21.64	40	4.75
50		22.01	50	
60		22.14	60	

Water Details

Water found at Depth	Kind of Water
51.50 Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals — Not Tested
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Casing Used

☐ Galvanized
☒ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

Screen Used

☐ Galvanized
☐ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

No Casing and Screen Used

☐ Open Hole

Disinfected? ☒ Yes ☐ No

Casing and Well Details

Diameter of the Hole (Centimetres): 15.39

Depth of the Hole (Metres): 52.72

Wall Thickness (Metres): .48

Inside Diameter of the Casing (Metres): 15.86

Depth of the Casing (Metres): +.45 to 6.40

Ministry Use Only

Audit No.	Well Contractor No.
z 77392	
Date Received (yyyy/mm/dd) OCT 14 2008	Date of Inspection (yyyy/mm/dd)
Remarks	

0506E (11/2006)

Ministry's Copy

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7205441

Ontario Ministry of the Environment

Measurements recorded in: ☐ Metric ☑ Imperial

Well Tag No. (Place Sticker and/or Print Below) **A111266**

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
4792 Bank	OTTAWA		
County/District/Municipality	**City/Town/Village**	**Province**	**Postal Code**
OTTAWA	Ottawa	Ontario	
UTM Coordinates Zone / Easting / Northing	**Municipal Plan and Sublot Number**	**Other**	
NAD 83 18 453525 5018442			

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
0	14	Holeplug	

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, *specify* _____

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, *specify* _____

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
2"	Plastic		0	14'

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To

Status of Well

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

Water Details

Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☐ Untested ☐ Gas ☐ Other, *specify*

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, *specify* _____

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping _____ hrs + _____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

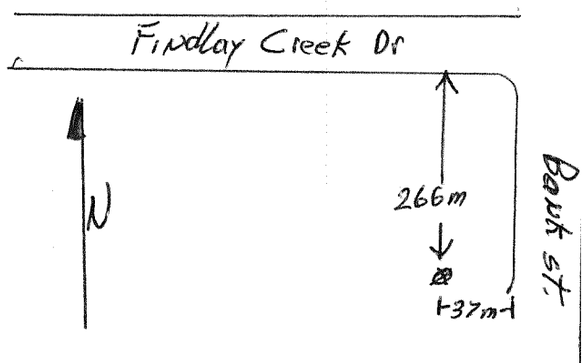
Well production (l/min / GPM)

Disinfected? ☐ Yes ☐ No

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

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Marathon Drilling Co Ltd	6894
Business Address (Street Number/Name)	**Municipality**
6847 Hiram Dr.	Ottawa
Province	**Postal Code**	**Business E-mail Address**
ON	K4P 1A2	twright@marathondrilling.com
Bus. Telephone No. (inc. area code)	**Name of Well Technician (Last Name, First Name)**
6138220571	Wright Terry
Well Technician's Licence No.	**Signature of Technician and/or Contractor**	**Date Submitted**
0715		2013 06 27

Well owner's information package delivered ☐ Yes ☐ No

Date Package Delivered Y Y Y Y M M D D

Date Work Completed Y Y Y Y M M D D

Ministry Use Only

Audit No. Z 82651

Received JUL 25 2013

0506E (12/2007) **Ministry's Copy**

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Ontario — Ministry of the Environment and Climate Change

Measurements recorded in: ☒ Metric ☐ Imperial

Well Tag No. *(Place Sticker and/or Print Below)* A149011 **Tag#: A149011**

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
Airport Golf Land			

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
6357 Emerald Links Drive	Greely	Ontario	K4P1M4	6138505468

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
4795 Bank Street	Gloucester		

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa Carleton	Gloucester	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	453909	5018388		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Soil	Stones	Packed	0	3.65
Gray	Till		Hard Packed	3.65	9.75
Gray	Limestone	Brown Layers	Medium	9.75	68.57

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used *(Material and Type)*	Volume Placed *(m³/ft³)*
11.58	0	Grouted Cement & Bentonite	.42m3

Method of Construction

☐ Cable Tool ☐ Diamond
☒ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☒ Air percussion
☐ Other, *specify* _____

Well Use

☐ Public ☐ Commercial ☐ Not used
☒ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, *specify* _____

Construction Record - Casing

Inside Diameter *(cm/in)*	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness *(cm/in)*	Depth (m/ft) From	Depth (m/ft) To
27.13	Open		0	11.58
15.86	Steel	.48	+1.60	11.58

Construction Record - Screen

Outside Diameter *(cm/in)*	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To

Status of Well

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

Water Details

Water found at Depth	Kind of Water	
20.11 *(m/ft)* ☐ Gas	☐ Fresh ☒ Untested ☐ Other, *specify*	
65.83 *(m/ft)* ☐ Gas	☐ Fresh ☒ Untested ☐ Other, *specify*	
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, *specify*	

Hole Diameter

Depth (m/ft) From	To	Diameter *(cm/in)*
0	11.58	15.86
11.58	68.57	15.55

Results of Well Yield Testing

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

If pumping discontinued, give reason:

Pump intake set at *(m/ft)*: 60.95

Pumping rate *(l/min / GPM)*: 36.4

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping *(m/ft)*: 45.

If flowing give rate *(l/min / GPM)*:

Recommended pump depth *(m/ft)*: 60.95

Recommended pump rate *(l/min / GPM)*: 36.4

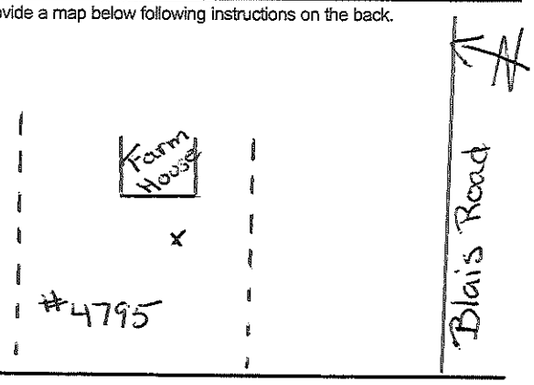
Well production *(l/min / GPM)*:

Disinfected? ☒ Yes ☐ No

Draw Down Time *(min)*	Draw Down Water Level *(m/ft)*	Recovery Time *(min)*	Recovery Water Level *(m/ft)*
Static Level	6.21		
1	7.71	1	42.55
2	8.88	2	40.77
3	10.42	3	39.66
4	11.69	4	37.82
5	12.90	5	36.20
10	17.07	10	30.30
15	18.65	15	25.95
20	20.33	20	21.60
25	24.90	25	19.10
30	28.60	30	18.40
40	34.99	40	17.60
50	40.10	50	16.06
60	45.	60	13.06

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
P.O. Box 490	Stittsville	Ontario	K2S1A6	office capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
6138361766	S Miller, Stephen	0097		2016 12 09

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☒ Yes ☐ No	2016 12 08	2016 12 07

Ministry Use Only

Audit No. Z226858

Received MAY 25 2017

0506E (2014/11)

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